

MUSIC THEORY AND ARRANGING TECHNIQUES FOR  
THE CHURCH MUSICIAN

by

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A THESIS

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## An Abstract of the Thesis of

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The rising popularity of the use of “contemporary music” for worship in Christian churches has created an ever-growing body of music professionals who, coming largely from a rock-influenced folk idiom, are often untrained in music theory. As the style of music has shifted from the traditional model, stemming from classical genres, to one dominated by popular music, many of these musicians see theory education as impractical or at least unneeded given their particular stylistic approach. In order to address this issue, a method must be developed, departing from standard methods of theory pedagogy to one employing selected concepts and

applications pertaining particularly to the context the contemporary worship setting and presenting them in a manner immediately beneficial to these musicians' vocational considerations. This thesis serves as a possible solution by proposing such a method and comparing it to the approaches of three major theory methods on these terms.

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## CHAPTER I

### PREFACE

This paper will propose a method for teaching practical elements of music theory to music professionals operating in Christian churches practicing a “contemporary worship” style. The method is directed primarily at those in charge of arranging music and leading musicians for the purposes of conducting music for a worship service. The topics considered include notation, the fundamentals of pitch and rhythm, harmony and its use in popular music, arranging techniques such as chord substitution and modulation, and the necessary applications of these concepts. It will also provide a commentary that examines its content and organization in light of three theory texts, namely *Music Theory for the Music Professional* by Richard Sorce,<sup>i</sup> *Music Theory for Today’s Musician* by Ralph Turek,<sup>ii</sup> and *The Musician’s Guide to Theory and Analysis* by Jane Piper Clendinning and Elizabeth West Marvin.<sup>iii</sup> The text aims to assert a more focused and practical tool for theory pedagogy than those currently available in order to bridge the “theory gap” between these musicians and the traditional classically trained world.

#### **Background**

Music in the Christian church today is very different than it was 40 years ago and so are the kinds of musicians who lead it. The influence of the Charismatic movement has left its mark on the worship services of many contemporary Protestant denominations, even those who are not technically associated with Charismatics. The movement, which began in the 1960’s, adopted a musical style for worship services from the contemporary folk idiom rather than the hymn-based worship of more traditional churches. Strophic chorale-style hymns were supplanted by improvised performances of songs written in a popular style.

Instrumentation also changed dramatically from choir and organ, to rhythm sections that included guitars and drums. Since then, the popularity of this style has spread and is now used extensively in Christian churches, primarily in Protestant Evangelical traditions, but also in some Roman-Catholic churches.

As this style of music draws its musical influences more from popular culture than church tradition, many of the musicians who have assumed positions of musical leadership have the kind of experience that reflects the musical backgrounds of most popular musicians – that is, they are untrained and are not musically literate. Bob Kauflin<sup>1</sup> has said about musical literacy in the church today, “Fewer young people are drawn to pursue more formal methods of music training, and fewer musicians in the church can read notes...tens of thousands of churches have sung and continue to sing God’s praise, led by untrained musicians.”<sup>iv</sup> As the contemporary style of worship has become more popular, the amount of untrained musicians leading music in the church has increased as well.

Though I am unaware of any empirical study that has pursued research in this regard, this too has been my experience in the church. In most of the churches I have attended that have a traditional style of worship, the music leaders in the church are literate, having at least a rudimentary understanding of music theory, but in contemporary-style churches, the leader is often one who is untrained, playing mostly by ear. Even in churches that blend styles, using both styles, either within a single service or different services, a more musically literate musician often is responsible for leading worship in the traditional style.

It seems that as the number of church musicians grows who are untrained in theory, a method for teaching them theoretical concepts that are specifically practical for their vocation is needed to fill the growing rift or “theory gap” as identified by Richard Sorce,<sup>v</sup> between the formally trained, musically literate body of musicians and the body of those who are not. Pedagogical texts have largely served

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<sup>1</sup> Bob Kauflin is Director of Worship Development for Sovereign Grace Ministries, a multi-national organization of churches.

the purpose of responding to – or in a sense playing “catch-up” with – the evolution of music throughout history by attempting to explain its trends so that its students may understand them from an academic perspective. As expected, theory pedagogy has addressed the needs of musicians enrolled in academic institutions seeking to prepare themselves for professions in music. The number of vocations in music has grown and diversified beyond the traditional classical realm since the 1970's,<sup>vi</sup> consequently so has the need of theory pedagogy to adequately address students' academic needs. A particularly notable case of this has been in the ever-growing inclusion of jazz and other popular musical forms into theory texts. As an increasing number of music schools begin to offer select courses and degree programs that include the study of jazz or even popular music, so have theory texts accommodated this change.<sup>2</sup> However, I don't believe that these texts are currently sufficient to concerns of musicians in the church who utilize a popular music style.

My thesis attempts to fill this void by addressing the specific needs of church musicians in their contexts. The large majority of theory textbooks are designed to be practical to the classical musician by addressing theoretical concepts that arise in classical repertoire and providing musical examples that reflect these trends and little attention is given to doing the same for popular music. This is largely due to the fact that the majority of music students enrolled in the average music school are classically oriented musicians. Furthermore, the fact that popular music is generally regarded as being far simpler than art-music may have contributed to a consensus amongst the academic community that this music does not need to be examined on its own terms. After all, classical music eclipses popular forms with most of its theoretical concepts being used in popular music to some degree. Many theory texts may devote only a small section or chapter to discussing popular music.

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<sup>2</sup> *Music Theory for the Music Professional* by Richard Sorce and *Theory for Today's Musician* by Ralph Turek are a few notable texts that have attempted to update their material to accommodate the growing number of non-classical musicians enrolled in academic institutions.



Yet this places the undue burden of practical application on the shoulders of the student of popular music far more than it does for the classically oriented musician. Considering many students of popular music may already be at a disadvantage in terms of their ability in reading music and understanding of music theory,<sup>3</sup> it is no mystery why such musicians would be averse to studying music theory with the aid of materials currently available. Furthermore, there are many untrained music professionals who – already well into a career in church music ministry – may not have the ability to dedicate time needed to complete a theory program at a music school, especially when there is the undue stress of having to filter what and how the material is applicable to their style and vocation or imagine its use in their own body of repertoire.

Since there are many aspects to the role of musical leadership within the church that seem to have no close parallel outside the church, theory education should have the capacity to address issues that concern contemporary church musicians and provide examples for the practical application of the theoretical content. Thus, a method is needed to eliminate many of the hurdles such a musician would face in a program of study with current theory pedagogy by tailoring the content to fit the vocational concerns of the student and with attention to appropriate styles.

### **Contributions to the Topic**

Despite this apparent need, there has been very little significant work published for the teaching of music theory for the contemporary church. Probably the most significant contribution would be *The Language of Music: Practical Music Theory for the Worshiping Musician* by Tom Brooks.<sup>vii</sup> This method, written for use by the Worship Arts Institute at Yonsei University in Seoul, is fairly comprehensive and covers many of the same topics that would be discussed in a conventional

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<sup>3</sup> Public primary and secondary education for the large part still caters to developing these skills in musicians studying classical styles.

theory method, yet tailors this material for reception by aspiring church musicians. Brooks begins with music fundamentals, works through a discussion of harmony in popular music, instructs the reader in how to read lead sheet notation, teaches Roman numeral analysis, and includes a section concerning chord substitution, an important topic missing from many similar texts. Though this method is more complete in scope than any text of this kind, it seems to propose too much information for the text to be as practical as his title boasts. For by providing detailed explanation of many theoretical concepts, many of which find little or no application in the realm of music making Brooks addresses (for example, the construction of enigmatic scales and modes, like the locrian mode or “Hungarian minor”), he risks losing the focus of his readers by overwhelming them with unnecessary information. In his attempt to bring church musicians completely across the theory gap, he pushes them over the edge by not giving a sufficiently practical context for the theory he teaches. Furthermore, the visual presentation and organization of his text is cluttered and incoherent through a multitude of fonts, tables, and graphics that are undoubtedly meant to organize the text, but in fact make it appear more complex. As a result, it becomes difficult to decipher what information is critical to the concepts at hand from what are intended as helpful examples, what are suggestions for practical application, and what is merely extraneous musical trivia. Altogether, in terms of its content and presentation, this text provides a method that would seem overly imposing to most music students.

Another book that was written with many of the same goals as Brooks’ publication is *The Worship Musician’s Theory Book* by Steve Bowersox.<sup>viii</sup> This book is designed as a self-study music theory course that covers the rudiments of music theory from notation to the fundamentals of diatonic harmony. This includes basic intervals, major and minor triads and scales, transposition, simple modulation techniques, and some common chord progressions found in the repertoire and incorporates musical examples from traditional and contemporary styles throughout. Though it is, with the exception of Brooks’ text, one of the most

comprehensive methods available of its kind, it rarely expounds how to use theoretical information practically. Furthermore, it does not sufficiently go in depth into the structure of harmony to adequately address many techniques pertaining to song arranging. It seems that this book is designed as a text to teach musicians how to read music with the aid of examples from church repertoire. Indeed this is what Bowersox has claimed is the purpose of this text, he states, "I am not diminishing the reading of music, (after all that is why I wrote this book!)"<sup>ix</sup> In light of this, it seems Bowersox's book seems to fulfill only one small need of music theory while failing to expound on the many benefits learning theory has for church musicians.

Another popular work, *Music Theory Made Easy* by Paul Baloche,<sup>x</sup> is in the form of an instructional DVD. This video with its accompanying instructional packet available for online download, presents music theory in a way more immediately practical than either Brooks' or Bowersox's books. Paul Baloche does well to present basic concepts of music theory from notation to diatonic harmony and Roman numeral analysis by approaching these topics from a worship leader's perspective. These themes are approached from the keyboard and the guitar and applied directly to the playing of common worship songs. However, Paul Baloche's course is fairly limited in scope, being less comprehensive than even Bowersox, though he does touch very briefly on ear training by encouraging viewers to attempt to sing and aurally recognize numeral analysis of the chord progressions he demonstrates, something entirely overlooked in the Bowersox text. However, Baloche simply does not sufficiently go in depth to properly develop a student's skills in ear training. It seems that the brevity of this DVD instruction course is both a hindrance and virtue. Its accessibility, practicality, conciseness, and cost have all seemed to help make this more popular in the realm of instructional material for worship on Christian music websites, disseminating music theory instruction to a larger audience, albeit inadequately.

Though a variety of other more instrument-specific publications are available that address some very rudimentary aspects of theory as it applies to playing a

certain instrument in a worship setting, they usually fall short in covering issues that worship leaders face as performers, band leaders, arrangers, and composers.

The above resources have approached the theory gap from the side of the untrained church musician yet have not been adequate to sufficiently carry him to the other side. From the classical-academic end, theory texts have, in their own way, reached out across the void to the untrained individual (the church musician included), some with more effectiveness than others. Two texts that make such strides are *Music Theory for the Music Professional* by Richard Sorce and *Theory for Today's Musician* by Ralph Turek. These methods, designed for use in a typical university or conservatory setting, attempt to balance references to classical music with references to popular music with some success, but in my opinion, are inadequate to appeal to the more focused needs of a church musician in a contemporary context, and despite their apparent focus fail where more conventional texts succeed.

It appears that the available material does not go far enough to remedy a growing disparity between the study of music theory and the church musician, causing the study of music theory to seem out of reach or entirely impractical. My paper will take the approach that Brooks, Bowersox, and Baloché do by writing from the perspective of a church musician to make the study both practical and vital, yet serve better to bridge the gap by being more comprehensive in the scope of theoretical material it covers. To show this, I will provide a commentary that compares my work to Sorce and Turek's theory texts in an attempt to show what divergences from the common methods are necessary, as well as a more conventional theory text: *The Musicians Guide to Theory and Analysis* by Jane Piper Clendinning and Elizabeth West Marvin, to show how my work compares to a more commonly used theory method.

## **Method**

In order to create a method that can simultaneously instruct an untrained musician in the practical aspects of music theory while addressing specific musical issues that musicians in the contemporary Christian church may face, I have designed my work to be in the form of a curriculum for self-study or corporate-study, much like the Brooks and Bowersox books have done. It will cover many of the same topics that a freshman-level theory course would, but will not discuss concepts idiosyncratic to classical repertoire and will replace examples from classical music with popular Christian worship songs. It will give special attention to the issues that worship leaders face by continually applying concepts through theoretical and – where appropriate – ear training exercises, performance exercises, and musical analyses. The theoretical content will essentially serve as a platform for which to discuss issues including, notation, harmony, rhythm, song arranging & reharmonizing of contemporary choruses and hymns, and modulation, constantly giving reference to its use in leading a band and facilitating a corporate worship service in a church utilizing a contemporary style.

In order to keep this work accessible, I will use the perspectives of musicians who both have no formal instruction in theory and those who have some experience. A sufficient discussion of notation and its use in the church will allow the reader to utilize the knowledge to communicate musical ideas using universal musical terminology so that as a leader, ideas may be expressed more specifically and directly than an illiterate musician could. Also they will have the fundamental knowledge with which to read a score and understand any direction given on a lead sheet or chord sheet. As an arranger, the reader will be taught how to create a cohesive arrangement of any song or songs and understand the impact of making certain musical decisions in a setting of corporate worship.

In creating a pedagogical text, I hope that this would be viewed less as a study of contemporary music in the church, but rather evaluated in terms of its practicality as an instructional aid for an untrained church musician. I feel that I

have written this in the spirit of the early theorists, Guido, Johannes de Garlandia, and Zarlino, whose treatises were created to serve the musicians of the church to help them be better students of the music they were tasked with performing. It is my aim to create a modern treatise for the new era of church music that will be used in this similar capacity. This treatise is written to bring music theory to an area of music culture that in my opinion so desperately needs it. Ultimately I hope this work that is both a resource to the Church and the academic community, in so much that music education is made more accessible to musicians of any background and vocation so that they are more fully equipped to tackle the many challenges they will encounter in the professional world and teachers are given the adequate tools with which to most effectively instruct said pupils.

### **Notes**

<sup>i</sup> Richard Sorce, *Music Theory for the Music Professional* (New York: Arsdley House Publishers, Inc., 1995).

<sup>ii</sup> Ralph Turek, *Theory for Today's Musician* (New York: McGraw Hill, 2007).

<sup>iii</sup> Jane Piper Clendinning and Elizabeth West Marvin. *The Musician's Guide to Theory and Analysis*. (New York: W.W. Norton & Company, Inc., 2005).

<sup>iv</sup> Worship Matters, "Are We Responsible for Musical Literacy in the Church?," Bob Kauflin, <http://www.worshipmatters.com/2007/11/whats-happening-to-musical-literacy-in-the-church/> (retrieved August, 16, 2010).

<sup>v</sup> Sorce, xxiii.

<sup>vi</sup> Ibid.

<sup>vii</sup> Tom Brooks. *The Language of Music: Practical Music Theory for the Worshiping Musician, 2d ed.* (Laguna Niguel: New Earth Publications, Inc., 2010).

viii Steve Bowersox, *Worship Musician's Theory Book* (Ponte Verde Beach: The Bowersox Institute of Music, 1991).

ix Ibid., 84.

x Paul Baloché, *Modern Worship Series: Music Theory Made Easy*, 94 min., (Via Productions, 2005), DVD.

## CHAPTER II

### INTRODUCTION

*“Sing unto Him a new song; play skillfully with a loud noise.”*

*Psalm 33:3<sup>xi</sup>*

In the spring of 2008, I was asked to lead worship services at First Baptist Church of Eugene. It was my first time doing so. I had led worship for the college-aged ministry many times, but I knew that leading music for the morning services was going to be a very different experience. The collegians met in a very informal setting that I had become very accustomed to. Every Sunday evening we gathered to sing in a dimly lit living room of an old sorority house on the campus of the University of Oregon. It was packed with students who were eager to worship God through fellowship, teaching, and music. As a musician, it was easy to feel relaxed while worshipping alongside my peers who, though they were nuzzled close, didn't seem to care if I missed notes or fumbled over a few words. The services carried along nicely, abiding all manner of hiccup in leadership. But when I stood on stage in front of a congregation of 2000 or more worshipers on that Sunday morning, I sensed that the pressure was on in a way I hadn't experienced before and I was confident that I had to bring my very best in order to keep things going smoothly.

Having been briefed in my new responsibilities, I was told I was now going to be in charge of just about everything musical from the choosing music creating arrangements, composing vocal charts, recruiting musicians, and rehearsing the band, and leading it all on Sunday morning. To most, this may have sounded like a lot to take on all at once, but to me *this* was the easy part. At the time I was a graduate student of music theory at the U of O and all throughout my time in music school I, my music education had taught me how to write and arrange charts and



lead a group of professional musicians. So like any other time, I prepared myself to lead the service by probing the depths of my music education and bringing all my creative senses to bear on the music.

Having a love for song arranging and composition, I had studied the music well and developed some very specific ideas of what the musicians could do with the songs and, wanting to set them all up for success, I made sure I was as clear as possible in what instructions I had for them. I carefully edited the charts and clearly articulated my thoughts as I led the musicians through rehearsal. As we practiced, we discovered some obvious kinks, but most everything had panned out beautifully and I felt adequately prepared to meet the demands of the Sunday morning service. I thought I had covered everything.

When I stepped into the church on Sunday, the stage was bigger than a small house and the sanctuary was brightly lit, full of people of all ages. It felt like the Roman Coliseum compared to what I was used to. I was accustomed to leading college students crammed into a cozy space no more than five feet in front of me, but the first row that morning seemed almost a mile away and the feeling was anything but a cozy; it seemed cold. Shrugging this feeling off, I gave a nervous greeting to the congregation and the band struck up the chords to the opening song. The group was well rehearsed and the set panned out like clockwork. As the service progressed, the band played all the music we had worked out the week before and sounded great, thanks to their exceptional skills and musical intuition. The songs came to life in the moment, taking on a new character, though obviously shaped by the musical conversation we had as a band, the congregation now taking part in that experience.

However, when the opening set of songs had ended and the last chord of my guitar had ceased ringing, silence filled the room. The pianist shifted in her chair and I felt all eyes on me, waiting to be led to the next element of the service. Usually the person up front knows what to do next, but I didn't. I thought the offering was next, but who was going to introduce it? Maybe it was me, but I could not

remember. My mind had gone blank. The pastor quickly picked up on my mental impasse, and took initiative to lead in my stead. The musicians left the stage and the service continued on smoothly. This awkward moment was only a minor glitch, but I still felt a measure of shame. In that moment, I realized that I had become so consumed by the music – in its preparation, rehearsal, and performance – that I had neglected my other responsibilities as a worship leader and favored one function of the service at the expense of another. Certainly all my musical practice and prowess had paid off, but it would only go so far and I had forgotten that my role as a worship leader continues when the music stops.

I begin with this story because I want to remind the reader that the role of a church musician, and the worship leader specifically, is a very complex and demanding one. He or she not only needs to bring excellence in music, but also needs to lead people, including non-musicians to non-musical places. This means a church musician must learn to worship God and develop their skills in ways that extend well beyond that of music.

Thankfully, ministry is as much about grace as it is about excellence. We are allowed these stories in part to inspire ourselves to be better at what we do and teach us this very important virtue: the song continues through every moment of worship. Thus, in order to play skillfully, as the Psalmist says, you must do so in a variety of ways, especially in the areas you are least comfortable. You must hone the things you can do well and “go back to school” on the things that need real work.

Therefore, as you read a book on how to employ music theory for the church musician, I expect you will do so with the full realization that it concerns only a portion of the responsibilities facing a worship leader and that it is only part of the equation. Yet as this is a book on music specifically, I expect it will be especially valuable to you if you feel music needs some work specifically. As a music theory book, it will deal mainly with employing musical *knowledge* towards skills in the church context. By restricting the scope of this book, I intentionally avoid discussing many issues of being a worship leader or other church musician that are as

important or more important in these roles as music so that more attention can be placed on music here (and allow room for other concerns to be placed elsewhere). Many of the issues faced by musicians in the church – the social, spiritual, theological, and clerical – are too complex to be discussed in depth here. Moreover, I am not equipped to teach them. As there is any number of texts that address these issues in the church, I leave this discussion to women and men who are wiser in these areas than I.

Everyone has strengths; mine is mostly music. It is easy for anyone to do as I did and focus on only the things they excel in or enjoy while not adequately confronting those things that need more improvement. We can even make excuses for our shortcomings while over-estimating the importance of the things we naturally do well. This book was written for those church musicians, like me, who recognize this and want to avoid it. It is for those of us who know where we come up short and want to do something about it.

If you feel that your lack of an understanding of music serves as limitation for your ministry, keep reading. Or perhaps you are not even sure what music theory is or how it can help, but you are curious to learn more. In that case, the following pages may help convince you that this book will benefit you. So, the next section will deal briefly with what music theory is and what makes it important to musicians in the church.

### **What Is Music Theory and Why Do We Use It?**

Music theory is the study of how music works on a technical level. Like an auto mechanic looks under a hood of a car to see how everything is put together, a music theorist looks at notes to understand music better. Music theory *allows* us to do this. This means that when we directly discuss any of the mechanical characteristics that make music what it is, like notes and rhythms, we are using

music theory.<sup>4</sup> So it is likely that you intuitively know some music theory already. Music theory is used to answer some of the most fundamental questions about music. If you've ever wondered: What makes it sound the way it does? What makes good music sound good and bad music sound bad? How can I make music sound the way I want it to? It will help answer these questions.

### **Music Theory is a Teaching Tool**

You may be surprised to hear that music theory got its start in the church. The men who came up with the theory that evolved into what we use today used it as a teaching tool for other church musicians. One of the earliest and most famous of these theorists was a Benedictine monk named Guido of Arezzo who developed in the eleventh century the first musical staff and an early form of solfège, both of which are still used today in their modern forms. Guido created his music theory to serve his fellow worshippers who he noticed were having difficulty learning the vast number of chant melodies that they had to sing weekly. His theories eventually spread throughout the church, and became standardized, as they brought order and clarity to the teaching of this music. Since then, music theory has not lost its place as a centerpiece of music education. Today it is taught in a nearly universal form in schools worldwide.

### **Music Theory is Language**

This common vocabulary that music theory provides allows musicians of all backgrounds and skill levels to discuss music clearly. By creating a common ground that supersedes individual musical experiences or philosophies, people can help each other learn and collaborate on the same level. The metal guitarist from the U.S. can share his or her musical ideas with the classical violinist from Korea even when they are not familiar with the other's style of music.

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<sup>4</sup> Though music theory has the capacity to discuss many more aspects of music than these mechanical ones, they are beyond the practical scope of this book.

### **Music Theory is Creative Potential**

Every musician is armed with a creative mind, and music theory empowers you to use it. Possessing knowledge of how music works gives you the power to bend, break, or employ those rules at your will. As a musician you must know what tools are available in order to use them effectively. How much more creative is a painter who can see what colors are on his palette? He must see the colors to be able to paint what he wants. Otherwise it is just guesswork.

### **Music Theory is Musical Power**

By making music intelligible, music theory makes any kind of music accessible. It provides the means to comprehend any music so that it can be understood and replicated. If you've ever wanted to know how to play jazz, gospel, or reggae, music theory can help provide insight to any genre of music so that you are brought from thinking merely, "Wow, that sounds different!" to having the ability to understand it and the skills to employ it at your will. Understanding music gives you practical knowledge. And if knowledge is power, understanding music makes you a powerful musician.

### **Do We Need Music Theory?**

When Guido of Arezzo devised the musical staff, he was responding to a need in the musical life of the church. He saw his fellow musicians were struggling and knew that if they were going to get better, they would need to be challenged in the way they learned and perceived music. His musical staff allowed them to think objectively about the notes they were singing so that they could take more control of their own musical development.

Granted, music in the church has changed a lot since the eleventh century. Technology and advances in musical style have made the experience of the aspiring worship leader different from that of the cloistered monks of the middle ages. But has our complicated age rendered learning music theory obsolete? On the contrary,

it is my opinion that we need it more than ever. Music in the church has become so complex and demanding in the last 1000 years that a worship leader cannot afford to be complacent or mediocre in his or her musical development:

Despite its apparent value and benefits, music theory has never been the most popular subject among musicians because it is a challenging way to think about music. Music theory is as complex as the music that it explains, and the music we play in church *is* complex. Every chord we play is its own highly organized system of notes working in concert to create music that on the surface seems simple and organic. It took a millennium of innovation to get music from Guido's time to where it is today. This has resulted in a modern music theory that is extremely complex and time consuming to learn. The real question is: Is it worth all the effort? Of course I think it is, but many musicians in the church have chosen not to pursue it for a variety of reasons.

Not convinced? Below is a list of some reasons why worship leaders say they have chosen not to study music theory. Following this are a few of the many reasons for learning it that are directly applicable to those who lead worship in the church today. I hope the commentary on each idea will help convince you that learning music theory is not only worthwhile but also *essential* for your growth as a church musician and worship leader.

## **What Some Church Musicians Say About Theory**

### **1) Learning music theory will take too long.**

It is right to say that learning music theory is no small task. It takes time to develop even a basic working knowledge of the subject. However, learning just the basics can take you a long way. Some scholars spend their whole lives studying music theory, but most musicians know a little, and use what they know on a daily basis. Studying the Bible is an enormous endeavor too, but you chip away at it a little bit at a time and you do it

because you believe it is important. If you come to feel that learning music theory is worth the effort, try not to be overwhelmed with the idea of committing yourself to learning it. Reserve a little time in your week to learning something new and don't move on until you've grasped it.

**2) I don't even read music, how can you expect me to understand music theory?**

You do not *need* to read music to understand music theory, although it certainly will make it easier. I have attempted to make it possible for any musician to grasp these ideas and immediately put them into practice while constantly incorporating examples of written music. Hopefully by the end, you will have a good knowledge of music theory *and* be able to read music to the degree that you need it.

**3) With the available software and resources available through Christian Copyright Licensing International (CCLI) and other worship music resources, hasn't technology made it unnecessary for me to know this information myself?**

Not at all. Such software resources can be extremely valuable to worship leaders and though they can be helpful for changing keys or providing pre-arranged lead sheets at the click of a button, they are no substitute for a *creative mind*. I recommend that rather than using pre-packaged music arrangements, a worship leader uses his or her ears and theoretical knowledge to craft a service for his or her church's needs. Certainly, such technology can be helpful. I use them sometimes, myself. But every time I print out a lead sheet from a software resource, I play through it with a discerning ear and a pen ready to tailor a song to better suit the service, the musicians involved, and for the congregation I am leading. If your pastor were downloading his sermons from the Internet (and without

even checking what they said!) rather than using his own God-given gifts, he would probably not be your pastor for long. As a *musician*, why should your standards be any less?

**4) If I work with musicians who don't know anything about music theory either, what good will it do for me to learn it?**

This is a good point. While studying music theory, you will develop a vocabulary with which to communicate musical ideas more effectively, but granted this vocabulary won't help as much if your fellow musicians only hear a bunch of theoretical jargon from you that they don't understand. However, studying music theory will give you a greater understanding of the music you and your whole team plays. Having a clear understanding of the music before you hand it out and while you play it is a crucial part of being able to lead a team of musicians, and conveying your musical vision as a leader. It is important to be musically aware not only in terms of what you play yourself, but also to be able to understand what others are playing. Music theory will allow you to hear and recognize what other musicians are playing even if you have no knowledge of how to play their instrument. Furthermore, much can be said about the role of a worship leader in fostering the musical growth of the members of his/her team. Your personal education can enable you to be a better leader and teacher to gently help others along in becoming better stewards of their craft.

**5) Isn't music theory just a list of rules? Won't that hinder my creativity?**

No. Music theory is not a list of rules. It is simply a way of organizing and describing musical sounds and thus de-mystifying them. When one studies music theory, they are not learning what they can and cannot do, but what *has been done* and thus what *could be done*. Understanding what others have done opens up more avenues of creativity for you.



Musicians who do not know music theory often hold the misconception that what musical ideas they formulate apart from theoretical knowledge are more novel than they really are. However, it is generally accepted that there is “nothing new under the sun” (to reference Ecclesiastes) when it comes to music. It has been said: “...the tools of musical creation have remained virtually unchanged for the last 300 years. There are no new pitches, chords, rhythms, or dynamics. Every element of syntax that was available in 1700 is still used today. What has changed is the style in which these syntactical elements are employed.”<sup>xii</sup>

This statement should not be defeating to the aspiring musician, however. Rather, with a good theoretical knowledge of what is the norm in a style or a multitude of styles, a studious musician has cultivated the ability (and indeed liberty) to emulate or deviate from the norm at his or her leisure and make her own “mark” in a given style. In short, if you know where you want to go, you must also know where you are in order to know how to get there. Music theory will open up pathways for creativity that you never knew existed.

**6) Music theory isn’t for me; I just play by “feel” and have gotten along just fine without it.**

Don’t limit yourself. Too many people hold the misconception that there are two types of musicians: those who play by ear and don’t need to read music or learn theory, and those who do. Don’t confine yourself to either stereotype. Once you get better at it, music theory can be felt and understood as clearly as a good groove. Through careful study and practice, music theory can become as intuitive as tapping your foot to a beat. I challenge you to become a better-rounded musician. The greatest musicians in this world are the ones who constantly challenge themselves to be better. They have the pioneer’s spirit, never resigning to what is merely comfortable

or immediately intuitive. There is always something new to learn and most of the fun is the challenge.

**7) I have made it this far without knowing *any* music theory already, why should I start over and learn it now?**

First of all, I am guessing you do know *some* theory. Any musician who knows that a C is different from a D knows some theory. It is difficult to even talk about music without using theory. Just as learning your first chord put music literally at your fingertips, expanding your knowledge to include the material covered in this book will broaden your musical potential in the same way. You began your study of theory the same day you learned your first chord, and your next step is to go deeper and apply your knowledge in new and amazing ways.

**8) I am content with what I know about music already; I don't need music theory to do what I want to do.**

If you are absolutely content with what you can do on your instrument or where you are as a worship leader and you feel that you have learned everything you care to learn, then congratulations! You have reached a level only few musicians dream of and have no need of this book.

### **Some Reasons to Study Music Theory**

**1) You have more freedom to express your musical ideas.**

Learning music theory is a lot like learning how to read and write. No one can argue against the idea that learning the fundamentals of grammar will make your writing clearer or even better. Sure, there are those gifted individuals who can write brilliantly having never sat through a college composition class, but the rest of us could use a bit of help. Learning how

language functions doesn't necessarily give you great literary ideas, but it will allow you to express your thoughts more clearly and more the way you want to. Music theory works the same way, it cannot tell you how to write a great worship song, or how to arrange the "perfect" worship service, but it will give you the tools you need to better express yourself and perhaps unlock potential that has been locked up inside.

## **2) You will be more efficient and self-sufficient.**

One of the great benefits of music theory is that it illuminates patterns in music (and contemporary Christian music is full of them). One can learn a song and memorize it in less time by being able to recognize and apply these musical patterns in performance. Furthermore, if you have musical ideas that you know how to play in one context (a particular key for example), theory can show you what potential those ideas may have in other contexts.

Also, having a fundamental understanding of how music is structured enables you to become your own teacher when it comes to learning new things. For example, if you are learning a new song you may be unfamiliar with how to play a certain chord indicated on a lead sheet. A working knowledge of chord theory will help you learn how to play any chord without the need for a person or book to show you where to put your fingers.

## **3) You will be able to better articulate musical ideas to your worship team.**

In order to be an effective leader, you must be able to communicate your ideas to the people on your team. If you have an idea you wish to convey, you must be able to verbalize it in a way that can be universally understood. Music theory allows for this; it takes musical ideas and organizes them into a common language. Developing this vocabulary among your team will help put everybody on a common level. Without it, you are stuck with coming up with vague analogies to get people to hear what you

are hearing. You might say, "Remember that one riff at the beginning of that one album?" or even showing them your instrument and saying, "No. Play like this! *This* is what I mean." Such communication methods are time consuming and vague. They can also be very frustrating to a musician who feels singled out and is given the unfair burden of interpreting instructions offered by a leader who lacks the ability to clearly describe what it is he or she desires.

**4) You will have the ability to transcribe musical ideas quickly and efficiently.**

Have you ever had a melody that you wanted another musician to play or hear a chord progression on the radio that caught your ear and really wanted to know? Music theory will give you the tools with which to transcribe melodies, rhythms, and chord progressions quickly and accurately without even having an instrument in front of you. With adequate theory and ear training, you can take what you hear in your car on the way to work and know how to play it even before you get there.

**5) You will relate better to a wider range of musicians in your community.**

Developing a universal vocabulary through an understanding of music theory will allow you to relate better to musicians who are classically trained. Being able to communicate with them on their level will make it easier for you to involve them in your ministry and help them along in their own musical development. Or perhaps you will learn something from them without feeling utterly lost if they use theoretical terms.

**Making the Most of the Text**

So, if you feel that you want to learn more about music theory and you want to use this knowledge in a practical way, then be prepared to make an effort and

sacrifice time in order to do it. This book covers many of the same topics that would be included in a full year of a college-level music theory course, so it should come as no surprise that it might take that long for you as well to master the concepts herein. There is no quick way to learn music theory. Learning it cannot be accomplished overnight and learning to use it in practical ways takes even more time. You may be serious about learning it and excited about what it can do for you, but you must be patient for your studies to pay off. They will in due time. So, to honor the time and effort you will be putting into this study, here is a list of things you can do to make the most out of it:

**1) Set aside a few minutes in your day to study it.**

Be consistent with your study in order to keep the concepts fresh in your mind. Learning music theory is a lot like learning another language, so be prepared to spend some time on it every day. Ten minutes a week won't be enough.

**2) Play what you've learned on your instrument.**

Read about a few of the concepts and practice the ear training exercises, but always play them out on your instrument. Putting music theory into practice not only helps solidify the knowledge while learning it, but also turns seemingly abstract theories into practical skills. As the music theory is unveiled throughout this book, sheet music and tablature (TAB) is provided so you can immediately apply them to your instrument. Also, don't skip over practice assignments or musical examples.

**3) Make it a part of your practice routine.**

When you pick up your guitar or sit down at the piano to play, keep what music theory you've learned in the back of your mind. Try to relate it to whatever songs you are working on throughout the week by actively looking

for music theory in the music. Applying music theory in this context is an essential part of using theory in a practical way.

**4) Learn it with a friend or as a worship team.**

Having friends who are learning along with you can encourage you when things are confusing or boring. Learning it as a group will help your team build a common theoretical vocabulary and help build excellence and team unity.

**5) Most importantly, keep at it.**

Don't give up on it if it seems difficult or if the benefits aren't obvious right away. Learning music theory from beginning to end is a very sequential process. Later concepts build off of earlier ones, so things at the end won't make sense without the context given by the stuff at the beginning. Don't skip around looking for the most immediately interesting or beneficial topic and don't move on from a concept until you feel you've got it.

**Text Organization**

The portion of the text directly teaches music theory, Chapters III-XV, is divided into 3 parts. Part 1 (Chapters III-VII) covers theory fundamentals including notation, the fundamentals of pitch, rhythm, popular song structure, keys, scales, and intervals. This provides the necessary foundation for what is the meat of the book. Part 2 (Chapters VIII-XII) concerns chord theory from basic triads through extended harmony, chord inversion, and chromaticism. Part 3 (Chapters XIII-XV) concerns some advanced theoretical concepts and arranging techniques. It is the culmination of the preceding materials. It attempts to muster all the theory concepts and techniques thus far towards developing a more compositional approach towards worship music and creating a worship services. Yet before any of

that, question of music theory must be addressed: What is Music? We will approach this in the following chapter.

### **Notes**

<sup>xi</sup> Ps 33:3 KJV.

<sup>xii</sup> Richard Sorce, xxiv.

## CHAPTER III

### PRELIMINARIES & NOTATION

To begin to tackle any major subject, one must always learn fundamentals. These are the concepts that everyone must learn before moving on to more complex topics. Fundamentals provide the basis for everything else, establishing a framework upon which we can address some of the more flashy and exciting theoretical concepts and techniques. This present section forms Part I of the text, wherein we discuss theory fundamentals. In it, we will cover the basics of notation, pitch, rhythm, keys, scales, and intervals, the building blocks of everything else. But even before we get into any of that, we must first address the more fundamental question: What do we mean when we even say the word music?

#### **What Is music?**

“Music” is a broad term that means many things to many different people. To most, music is what you hear on the radio or what musicians make when they play instruments or sing, but some people have more subjective notions of what music is. I have heard people say things like, “That rap music isn’t music at all, it’s just noise!” Others have a more enigmatic approach, arguing that birdsong or even the crashing of waves on a shore are types of music too.

These theories of music have their place in a discussion of music, but *music theory* requires a more conventional model for the definition of music as it deals with the specific mechanics of music that are used in music composition. Music theory assumes certain definable qualities present in music and uses them to explain how it sounds.

Traditionally, music is defined as having four major characteristics: *pitch*, *rhythm*, *dynamics*, and *timbre*. Below are some working definitions of each:



## Pitch

**Pitch** is the specific frequency or frequencies that make up notes in music. This includes a song's **melody** – a strand of individual pitches played in succession, and its **harmony** (or the chords) – individual pitches which, when grouped together, interact to create a simultaneity that forms a larger cohesive structure usually underpinning a melody.

## Rhythm

**Rhythm** pertains to the duration of time that pitches are sounded and their temporal organization. It determines how long or short a note is and also governs the time between notes when no pitch is present. **Tempo**, a facet of rhythm, is the speed at which a given rhythm is played.

## Dynamics

How loud or soft a note or series of notes are played is called **dynamics**. **Articulation**, often called the “attack” of the note is a concept that is not restricted to mere dynamics and is also affected by rhythm and timbre.

## Timbre

Loosely defined, **timbre** pertains to the quality of sound produced by a pitch. Quality does not mean good or bad, but relates to the *way* it sounds, as how an electric guitar sounds different from an acoustic guitar. Even when two guitars play the same notes, these instruments don't sound the same because each has its unique timbre.

Though music theory has the capacity to explain aspects of music that pertain to any of these categories, the music theory we will be dealing with in this book will be concerned primarily with the first two: pitch and rhythm.

### **What Is Notation?**

In order to communicate nearly any of these musical concepts in a book, we must use one or more types of music notation. Simply put, **notation** is music instructions in written form. Whether the notation is in the form of a conductor's orchestral score or a few chord symbols scribbled over a sheet of lyrics, this written depiction of musical ideas is considered notation. Notation allows us to communicate our ideas with other musicians through a common language. In the same way that the ability to read a written language is vital for functioning in a society, reading notation is necessary to operate in the music world. If you never learn to read or write any notation, communication with other musicians will be at best vague and always challenging. Furthermore, you will always feel out of the loop when around musicians who do use notation.

As a church musician, you should become fluent with at least one method of notation. A good place to start is with the style most commonly used by the musicians who serve in your ministry. However, the more styles you learn, the more versatile you may become in your communication of musical ideas. There are three notation styles commonly used in the church today: traditional music notation, lead sheets, and chord sheets. Also, there is tablature, which is widely used by guitarists, who indeed make up a large musical force in the church today. These styles serve as the common tools of communication, allowing musicians to exchange musical information and ideas with each other. Each style has its own set of advantages and disadvantages and these will be explored here. Additionally, we will discuss two very common, yet instrument-specific styles of notation: tablature and rhythm sheets. It will be beneficial to become familiar with each one so you can effectively work with whatever musicians may be involved in your ministry. Inevitably, you will encounter musicians of all abilities and backgrounds and being able to meet each person on common ground is necessary to working well with them.

## Traditional Music Notation (Sheet Music)

**Figure 3.1** I Know that My Redeemer Lives – Samuel Medley & John Hatton



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**Traditional music notation**, often called sheet music (Figure 3.1), is the primary notational style used by classically trained musicians and is used extensively in traditional worship services. Most pianists, organists, and choirs are trained to read this style. It is the most specific of any notation, meaning it has the capacity to visually depict nearly any aural component of musical performance.

Traditional music notation is written on a series of horizontal lines and spaces, called a **staff**. Notes and other symbols can be placed on the staff to supply any information about melody, harmony, rhythm, dynamics, and form (how sections of a song are laid out from beginning to end), leaving a musician with few questions of how to play any given song. For this reason, it has been the style of choice for professional musicians for the last 400 years. When this amount of information is communicated in written form, musicians can quickly establish the “basics” of performance and focus their attention on “fine-tuning” their performance.

Sheet music’s specificity means it is usually intended for relatively little improvisation, i.e. the musician will play what is written note-for-note. Also it has the advantage that it can also be instrument-specific or group-specific, meaning that the written music can be tailored for an individual instrument (as in a **part**) or many instruments (as in a **score**).

The main drawback to this style is that, because it is thorough, it is rather complex and not learned quickly. It can take weeks or even months of practice to be

able to read it and years to be fluent. Unless musicians are confident in their reading, it can be frustrating and discouraging for them to have to read from sheet music.

An additional side effect is that instrument parts and especially scores can become rather lengthy, spanning many pages for just a few minutes of music. If you have ever seen a conductor turn 40 pages of a symphony during an orchestra concert, you'll know what I mean. This is cumbersome for musicians who need both hands to play, like guitarists. Writing sheet music for musicians can also be time consuming, costly, or both. Writing by hand can be very time intensive and music notation programs tend to be expensive as well, though they have sped up the writing process considerably.

Another noticeable drawback to sheet music is that it can foster in the musician a dependence upon written musical instruction. In more improvisatory styles, like popular music and jazz, a musician who has developed such dependence may feel uncomfortable improvising their part. In extreme cases, some musicians may refuse to play music apart from the aid of sheet music.

## Lead Sheet

**Figure 3.2** I Know that My Redeemer Lives – Samuel Medley & John Hatton

D            A7/E    D/F#    G    C#°/E    D    A/E E7    A

I know that my re - deem - er \_\_\_\_\_ lives!

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Another method of notation, similar to traditional notation, is the lead sheet. The *lead sheet* is the most common notation used in popular music and jazz (Figure 3.2). It incorporates elements of both traditional notation and chord symbols, which are the main element of chord sheets (discussed below). On a lead sheet the melody

of the given song is written on a single staff of traditional notation with an underlay of lyrics and chord symbols above the staff.

There are many advantages to this format. It contains enough information that a musician has all essential instructions for playing the song, including the song's melody and rhythm, chords and their duration, and overall form. The main difference between this notational style and traditional music notation is that the harmony is not written out note-for-note, but represented by chord symbols above the staff. It is then up to the musician to "realize" the chords and bass line in an *improvised part*, meaning that how the chords and rhythms are played is up to the interpretation of the musician, which will likely be different from performer to performer. Though this allows for a great deal of individual expression and spontaneity in performance, it usually means that a group of musicians take more time to adjust each of their individual parts to create a more cohesive whole.

Lead sheets are also not usually instrument-specific. Multiple instruments read off the same part as the staff gives a general "road map" for musicians to follow so they are on the same page, literally, but the rest of the music is improvised. Length can also be an issue with this style as with traditional notation, though they are not usually as long. For a 3 to 5 minute song, a lead sheet may be two to five pages in length.

### Chord Sheet (Lyric Sheet)

**Figure 3.3** I Know that My Redeemer Lives – Samuel Medley & John Hatton

<b>D</b>	<b>A7/E</b>	<b>D/F#</b>	<b>G</b>	<b>C#°/E</b>	<b>D</b>	<b>A/E</b>	<b>E7</b>	<b>A</b>
I	know	that	my	Re	-	deem	-	er
								lives!

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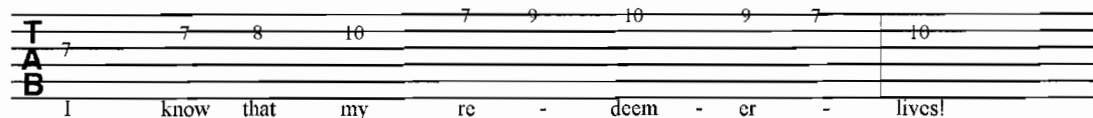
The *chord sheet* (or lyric sheet) is another very popular style of notation. Here, the lyrics to a song are presented with chord symbols placed over the appropriate words (Figure 3.3). Though there is no staff or notation of melody,

there are some very clear advantages to this style. The greatest benefit is perhaps that it is very user-friendly. One only needs to know a tune goes and how to read chord symbols to follow a chord sheet, making it accessible to musicians of all skill levels and backgrounds. Chord sheets are also relatively concise, often fitting onto one page and thus avoiding page turns, a clear advantage for guitarists and other musicians who must use both hands to play their instrument.

However, a big drawback to this style is that it is quite vague in terms of musical instruction. Words and chord symbols are often the only instructions provided, meaning that the melody of the song, duration of chords, musical form, etc. is learned by rote and memorized. Consequently, it is quite difficult, if not impossible, to play or sing a song from a chord sheet without already being well acquainted with the tune. Learning new music and being creative with familiar music becomes a very time intensive process as the bulk of musical ideas must be communicated verbally or demonstrated on an instrument to be taught. For instance, if a band leader or music arranger has specific ideas for parts or how he wants another musician to play a part, such as a counter melody for a vocalist, a specific strumming pattern for a guitarist, or melodic “hook” for the lead guitarist to play, the chord sheet does little (if anything) to communicate these ideas. Despite its obvious shortcomings, its “quick and dirty” approach remains the favored notational style in many churches that have adopted a popular style of music.

### Tablature (TAB)

**Figure 3.4** I Know that My Redeemer Lives – Samuel Medley & John Hatton



©Public Domain, arr. by the author

**Tablature**, or simply TAB, is notation specific to fretted instruments, namely guitar and bass (Figure 3.4). Though it can hardly replace any of the other notational styles, it is often used to supplement them by indicating specific musical ideas for a guitarist to play.

TAB has a series of horizontal lines representing the strings of the guitar's neck. Numbers placed on the lines indicate which frets to play certain notes or chords. The number of strings represented by the TAB varies according to instrument, but normally there are 6 horizontal lines for a guitar and 4 for a bass guitar. The orientation of the strings is such that the guitar neck positioned vertically is seen rotated counter-clockwise 90° with the 1<sup>st</sup> string is situated laterally above the rest, on top.

This style of notation has its limitations as well, showing only what notes to play on a guitar, specifying their location in terms of strings and frets, but sometimes chord symbols, lyrics, and even rhythms are added.

As a music arranger, it is important to know how to read and write TAB as well since the majority of guitarists are familiar with it and few are comfortable with traditional notation. Many musical examples in this book will be depicted in tablature as well for the guitarist, to connect the concepts at hand with familiar and tangible examples on the guitar.

### **Rhythm Sheet**

A fifth notational style that should be mentioned is the **rhythm sheet**. This is a style used primarily for percussion instruments where the definition of pitch is not a factor, but it can also be useful for indicating rhythms as strumming patterns for a guitar. On a rhythm sheet, rhythmic information is often communicated through note values and bar lines on a single-line or sometimes multi-line staff. Drummers playing a trap set will commonly use a five-line staff. Here, each line indicates the rhythm of a specific instrument (such as the bass drum, hi-hat, snare, or cymbals, etc.) Therefore, on a five-line rhythm sheet (Figure 3.5), the activity of the whole

drum-set may be notated on a single staff (Figure 3.6). This style of notation will be used on occasion throughout this book where it is necessary to depict rhythm-only ideas.

**Figure 3.5** Single-line Rhythm Sheet:



**Figure 3.6** Five-line Rhythm Sheet (Drum Set):



### **What Notation Style Should You Use?**

Notation is meant to serve the musicians who use it. So a simple answer to this question is to use a style that your team can read. If your musicians are unfamiliar with reading any type of notation, begin by teaching them chord symbols and how to use a chord sheet. Chord sheets provide a good starting point for learning notation as they are simple to create, quick to learn, and easy to read. As a result, they tend to be the most commonly used notational style in contemporary services, but one should be hesitant to resign them to using only this notation.

### **Making the Step Towards Staff-Based Notation**

As we have seen, chord sheets are easy to use in one sense because there is little information on the page for the musician to interpret. However, this also gives the performer the responsibility of memorizing or improvising what isn't indicated. This makes the greatest benefit of the chord sheet also its greatest detriment. Notational styles that give more information to the reader are harder to learn, just as picture books are generally easier to understand over prose. Music notation



styles could be seen on a spectrum of ease of use/non-specificity and difficulty/musical specificity (Figure 3.7).

**Figure 3.7** Easy of Use vs. Specificity:

←Ease of use/Non-Specificity                      Difficulty/Specificity→  
Chord sheet      Tablature      Lead Sheet      Traditional notation

If you have mastered reading chord sheet notation, it is beneficial to then become acquainted with notation that uses a staff and lays out the music temporally (with measures or bars), though it may seem like a great challenge initially. Indeed reading this notation will be challenging at first, but as a church musician, there are distinct benefits to knowing how to read and create lead sheet and sheet music, some of which have already been mentioned:

**1) It will allow you to communicate more specific musical ideas to your musicians.**

If you have musicians who can read, you can minimize rehearsal time spent on the more rudimentary aspects of music making by avoiding questions like, “Where do we play that chord again?” or “How many times do we repeat the last chorus?” The less time you have to spend on those kinds of questions, the more time you have to devote to pursuing creativity and excellence.

**2) It will make you a more effective leader and empower the musicians on your team.**

It is important that your musicians are gently led in a way that gives them opportunity to take responsibility for the music they make. Providing a part for a musician clarifies their role in a positive way. It gives them all the directions they need, thus giving them the power to bring the music to life in

accordance with the leader's vision and their own creative ability. If you are a creative person who has a lot of ideas for your band, verbally telling them what to do every step of the way can be very frustrating, and even discouraging when they feel singled out or made to feel that they can't be given responsibility for their own part.

**3) You will be able to involve classically trained musicians who may not be comfortable with improvisation.**

There are many incredible musicians out there who are highly skilled at reading music, but have trouble improvising a part. Often, the thought of having to play music without much direction can seem mortifying. But why restrict the music making on Sunday morning to only the musicians who are comfortable playing "by ear"? Being able to incorporate other types of instrumentalists like string players and horn players can be refreshing for your worship and be healthy for your congregation. Consider Psalm 150:

*"Praise Him with trumpet sound;  
Praise Him with harp and lyre.  
Praise Him with timbrel and dancing;  
Praise Him with string instruments and pipe.  
Praise Him with loud cymbals;  
Praise Him with resounding cymbals.  
Let everything that has breath praise the Lord.  
Praise the Lord!" -Psalm 150: 3-6<sup>xiii</sup>*

When it came to worship, I think the Psalmist wanted musicians to get involved. Some of my most rewarding experiences have been in helping musicians share the opportunity to make music unto God in the way they know best and bringing together musicians of different musical backgrounds and disciplines to play together.

**4) The more musicians you involve the greater the need becomes to have specific parts written.**

Have you ever wondered why symphonic orchestras are usually so big (40-100 players) while pop bands and jazz combos tend to stay small (5 or less payers)? This is a practical matter. If you do get more musicians involved, you will have to do more managing as a leader. It takes serious thought and creativity to get a large ensemble to play together well. If you have ten different instruments on stage, playing whatever they want throughout the entire song, there is a good chance things can become musically chaotic. Unless all your musicians are skilled enough to be sensitive to each other and work out their specific roles amongst themselves, it is likely the sound you will be creating will become messy and unpleasant. Too many different parts going on in the low-end of the sound spectrum sounds muddy, too many instruments playing in the high-end can make melody indiscernible and fatiguing to hear. It is in these instances where overwhelmed sound techs may start pulling people out of the mix because there is simply too much going on. Orchestras pull it off because they have sheet music to organize each musician's part and a conductor to help give the musicians a single mind or focus. Even if you don't go so far as to pull together a full orchestra, if you can write a part when needed, you still have the advantage of being able to organize and delineate responsibility to musicians who would otherwise trample over each other if left to improvise their own parts.

**Is Notation Necessary for Music Theory?**

An analogous question might be: is writing necessary for learning history? At the most basic level, the answer to these questions is "no". Just as one can learn history as easily from an oral account as from a book, one can also learn theory by ear and in a more "hands on" approach, but using a written language vastly

improves a clear and accurate dissemination of knowledge. Since a book is inherently a form of written language, this one will undoubtedly make use of “written music”, primarily in its more specific form, staff notation.

Though it is not the easiest way of communicating music in written form, it remains the most effective. In this respect notation is necessary for learning music theory. Notation is an attempt to communicate music in written form and music theory is an attempt to explain music, they depend on each other to an extent. Music theory can be very complex, but notations can make things more clear, so it will definitely help to learn how to read staff notation as you learn music theory. This doesn't mean that you have to read sheet music to understand music theory or use this book, but I will use examples of musical notation to make my points clearer.

Throughout this book I will make extensive use of lead sheet, staff notation, and TAB to communicate the concepts I discuss to make this book accessible to as many church musicians as possible. Carefully reading each will help you be better rounded in your approach to notation. I encourage you, as you go through this book, to make the attempt to understand what each diagram is saying. If you are a guitarist, do not ignore the staff notation simply because an example in TAB is provided.

At the beginning of this chapter we discussed the 4 components of music: pitch, rhythm, dynamics, and timbre. The next two chapters begin our study of “music theory proper” by discussing two of the most fundamental and all encompassing aspects of music, its pitch and rhythm, which form the basis for most of what we will discuss in this book.

### **Notes**

## CHAPTER IV

### FUNDAMENTALS OF PITCH

To begin to unpack some of the basics of music theory, such as pitch, a few concepts regarding the science of sound must first be mentioned. A discussion of the physics of sound may seem of little importance from the perspective of a musician, but a basic understanding of some simple concepts will be very helpful to an understanding of music fundamentals. Music notation and theory puts into pictures and words what happens musically in the real world, so it should come as no surprise that scientific concepts are used to explain what real world elements create that music. In fact some things, like octave equivalence, are perhaps impossible to understand without the help of science.

The physics of sound explains musical pitch through *frequency* – the rate at which a sound wave vibrates the air. Every note or pitch is created by a steady vibration in the air and by something that creates that vibration, be it the hammers of a piano striking the strings, a man's vocal chords vibrating the air in his throat, or the oscillations of a loud speaker moving the air inside a church.

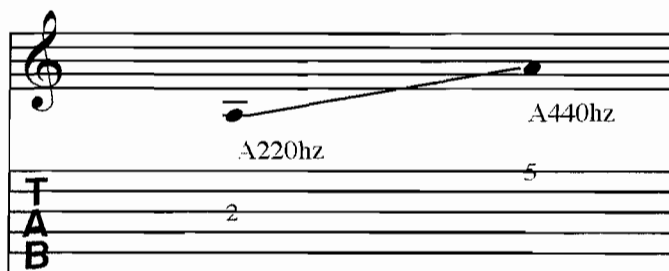
A higher sounding pitch has a higher frequency (more vibrations or cycles per second) than a lower sounding pitch and of course notes that are the same pitch will vibrate at the same rate. Thus, a mosquito creates a higher pitched sound by beating its smaller wings faster than a hummingbird would. Similarly, a small girl will sing higher than a tall man because her vocal chords are vibrating faster than his, but when they sing the same pitch, they are vibrating their vocal chords at exactly the same speed.

## The Octave

Now here's the interesting part; when a pitch has twice the frequency as another, our ears hear it as the same note, only higher. So, every time we double a frequency no matter how high or low we go, we get the same note (but not the same pitch), which is why the girl and the man can sing the same melody together, but obviously in different vocal ranges.

The distance between a note and another twice its frequency is called an **octave**. For example, the note A above middle C (named after the middle key on the piano) vibrates at 440hz (440 cycles per second), so 880hz would be A an octave higher, and 220hz would be A an octave lower (Figure 4.1). In essence, all the different notes that we can play in music will fit into an octave, because they are repeated in the next octave. This acoustical phenomenon is called **octave equivalence**.

**Figure 4.1** The Octave<sup>5</sup>:



## **Octave Register**

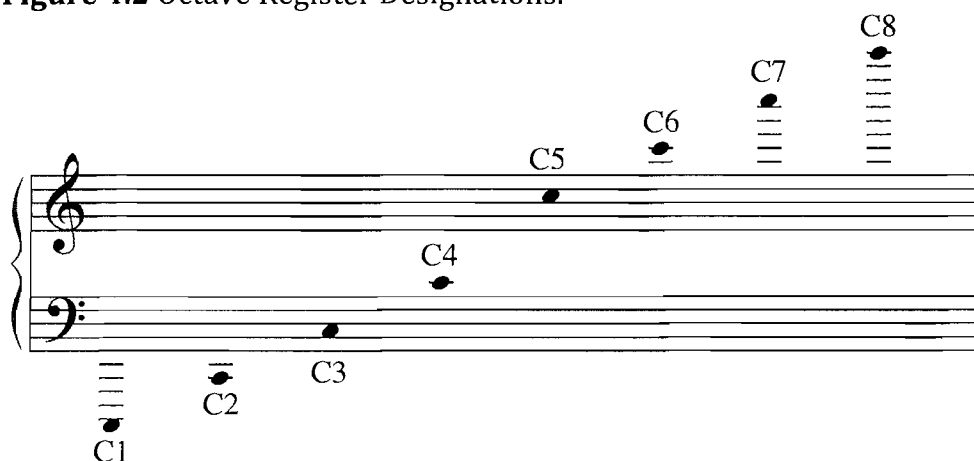
To differentiate between octave equivalent notes, musicians designate each octave according to its own **octave register** by dividing the range of octaves and numbering relative to their placement on an 88-key piano. Each new octave begins

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<sup>5</sup> The notation depicts the notes in the guitar at their sounding pitches. However, since the guitar occupies a range that strides both the treble and bass clefs, guitar music is usually written on the staff up one octave from where it actually sounds. In other words, what is indicated in tablature is one written octave below the staff notation. Thus, all staff notation paired with tablature will reflect this practice from this point onward.

with C. The lowest C on the piano is  $C^1$ , making the lowest octave span from  $C^1$  to  $C^2$ . The next higher octaves are  $C^2 - C^3$ ,  $C^3 - C^4$ , etc. to the highest note,  $C^8$ .  $C^4$  is called “middle C” because it rests in the middle of the keyboard. Don’t become overly preoccupied with memorizing each note’s register designation, though; for unless one is speaking very specifically about register, musicians don’t usually bother with speaking of notes this way. It is sufficient to know the name of the note apart from its octave register designation (Figure 4.2).

**Figure 4.2** Octave Register Designations:



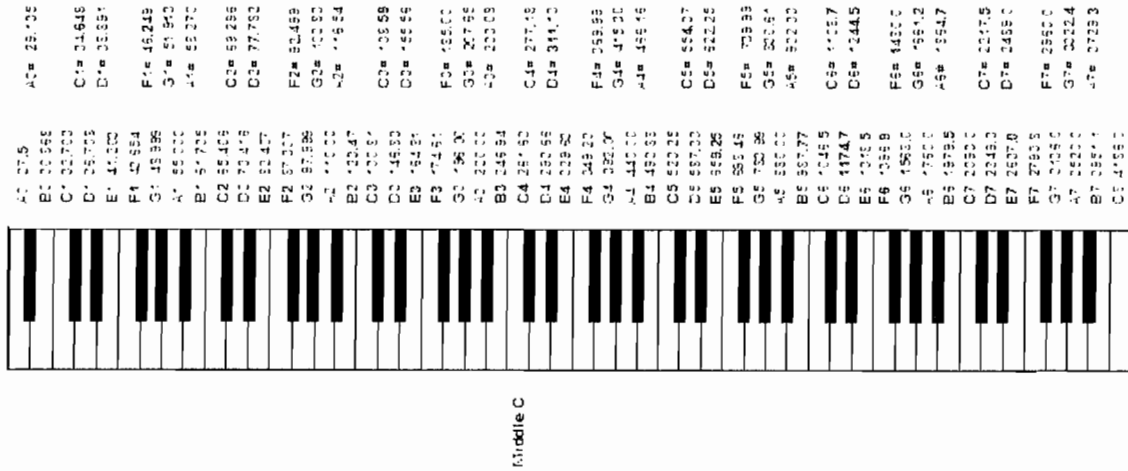
The image below (Figure 4.3) shows a full 88-key piano keyboard and indicates both register and frequency in hertz (Hz) of each note.

**Tip: A Note About Register**

Register is a very important concern when musicians come together to play. When musicians play with each other they must think about register differently, so that they can work together. A solo musician, like a pianist playing on his own, doesn’t have the same concerns about register. He may (and usually should) occupy a wide dynamic range to fill up the spectrum of pitches to his instrument’s potential. However, once you add in a bass guitar, guitarist, or other instrument, things

change. Suddenly, our pianist needs to be careful not to get in the way of the other musician’s sound.

**Figure 4.3** Keyboard, Notes, and Frequencies<sup>xiv</sup>:



For any given instrument combination, there is usually some degree of overlap in terms of the range of frequencies the instrument occupies. This overlap is expected and isn’t necessarily a bad thing, but as musicians do their dance, they must be careful not to step on each other’s toes, so to speak. This is especially important in the low registers (C<sup>1</sup>—E<sup>3</sup>), which can easily get muddy if too many instruments play different parts in this range. Take for example, a piano, guitar, and bass combo. The piano has a range that eclipses both of the other instruments spanning a range of A<sup>0</sup>—C<sup>8</sup>, though pianists will regularly play within a range of C<sup>2</sup>—C<sup>6</sup>. Depending on the bassist’s style, he or she would usually play in a range of E<sup>1</sup>—B<sup>2</sup> or even up to E<sup>3</sup>. Rhythm guitarists will regularly play chords between E<sup>2</sup>—B<sup>4</sup> and on octave higher (E<sup>5</sup>) or more if playing a lead guitar part. This means that the pianist’s left hand, the bass, and the guitar all occupy the same register from E<sup>2</sup>—E<sup>3</sup>. This is the *danger zone* for church musicians and is the reason why many worship teams sound muddy in the low registers when they play. If you or your



team hasn't developed the vocabulary to talk about octave register in this way, here are some simple solutions to this problem:

- 1) **Piano** – Have your pianist scoot the piano bench to the right so that the center of their body is higher up on the keyboard. Or simply ask them to play fewer notes in their left hand or none at all.
- 2) **Bass** – If your bassist has a tendency to creep higher up into the register of the piano and guitar, ask him or her to restrict their notes to the first five frets.
- 3) **Guitar** – Guitarists are taught from day one to play all six strings when playing most chords and this can be a difficult habit to break. However, if they keep from striking notes on the 6<sup>th</sup> and 5<sup>th</sup> strings (E and A strings), they will stay out of the way of the other instruments that play in those low registers.

### **The Musical Alphabet & Natural Notes**

Since every note is repeated at the octave, all the note names we will ever talk about in music fit into the space of an octave. In music we use the first seven letters of the alphabet to name these musical notes. The notes A – G, are ordered this way from low to high (Figure 4.4). So, in the span of one octave, B is one note higher than A, C is one note higher than B, and so on. After the seventh note G, you start back on A, but in a new octave. This A is the eighth note after G. This is where we get the term octave. These seven notes are called natural notes or simply “naturals”, indicated by just the note name or sometimes with a natural symbol (♮).

**Figure 4.4** Musical Alphabet:

←Low PITCH High→  
A—B—C—D—E—F—G—A

**Steps**

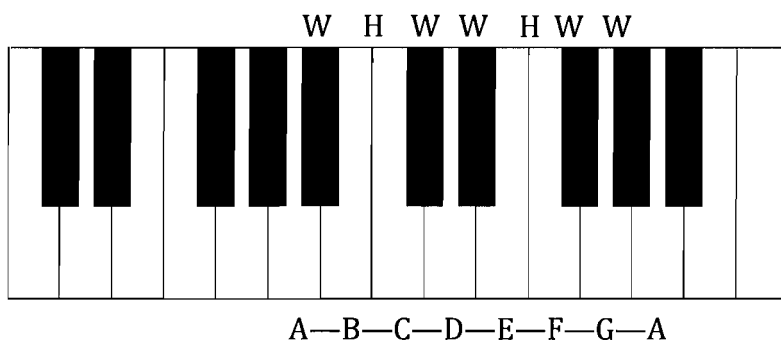
Notes are separated by what are called steps. The distance from one note to the next note, like A—B, is called a step. There are two sizes of steps, half steps and whole steps. Each natural note is separated by a whole step (W), except for between B and C and E and F, where there are half steps (H) (Figure 4.5).

**Figure 4.5** Musical Alphabet with Whole and Half Steps:

W H W W H W W  
A—B—C—D—E—F—G—A

***On the Piano***

On the piano, a half step is the distance from one key to the next on the right or left. Two half steps equal a whole step, so a whole step is equal to every other key. As you will notice, these seven pitches (A—G) correspond to the white keys on the piano where they are separated by black keys except B—C and E—F where there are no black keys and only half steps between notes (Figure 4.6).

**Figure 4.6** Steps on the Piano:

### On the Guitar

Like the keys of a piano, every fret on the neck of a guitar is a half step from the one next to it. Whole steps are every other fret. Moving up the neck of a guitar, it is easy to find whole steps and half steps (Figure 4.7).

**Figure 4.7** Steps on Guitar (One String):

Figure 4.7 illustrates the steps on a single guitar string. The top staff shows a treble clef with notes on the first string. Below the staff are letters W and H indicating whole and half steps. The bottom staff is a tablature with fret numbers 0, 2, 3, 5, 7, 8, 10, 12 and corresponding note names A, B, C, D, E, F, G, A.

But crossing strings is a bit more complicated. A whole step between two strings on a guitar is found by moving from a low string, like the sixth string, to the next higher string three frets back towards the nut. The exception is between the third and second strings where a whole step is two frets back. This distance is *increased* by one fret for half steps between strings. So half steps are four frets except between the third and second strings, which are only three frets apart. Steps on the bass guitar are the same as for the 3<sup>rd</sup>-6<sup>th</sup> strings on guitar (Figure 4.8).

**Figure 4.8** Steps on Guitar:

Figure 4.8 illustrates the steps between strings. The top staff shows a treble clef with notes on the first string. Below the staff are letters H and W indicating half and whole steps. The bottom staff is a tablature with fret numbers 8, 9, 8, 4, 5, 2, 8, 10, 8, 5, 5, 3 and corresponding note names C, D $\flat$ , C, D $\flat$ , C, D $\flat$ , C, D, C, D, C, D.

## **Accidentals**

The rest of the notes we haven't discussed yet, which are the black keys on the piano are called ***accidentals***. An accidental is an alteration of a natural note, making it higher or lower by a half step. ***Sharps*** raise a note by a half step and ***flats*** lower a note by a half step. For instance, if you start at A and go up to the next black key or the next fret of a guitar, you will be on A sharp (A#). Going one note higher yet will be B. Likewise, if you lower A by one note you will get A flat (Ab). Ab is one note lower than A, but one note higher than G. So the distance between G to B is two whole steps or four half steps (Figure 4.9).

**Figure 4.9** Accidentals

H   H   H   H  
G—Ab—A—A#—B

## **Enharmonic Equivalence**

There is only one note/black key between A and B, so if you change B into Bb, it will be the same note as A#. So, the black key between A and B has two names, A# and Bb. This same thing occurs with any other sharp or flat. The term for this is called ***enharmonic equivalence***, which simply means “two names for one note”.<sup>6</sup> There are even enharmonic equivalents for B, C, E, and F since they are separated by half steps, though these names are not often used. Their enharmonic equivalents would be Cb, B#, Fb, and E#, respectively.

The obvious question might be, “Why does one note have two names?” There is a good reason for it. It allows us to keep all seven of the note names (A—G) in every key without omitting any notes and doubling up on others. For instance, if we

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<sup>6</sup> This fact is not always true in the case of tuning systems of previous centuries, where A# and Bb may have represented two different pitches. Our current tuning system, equal temperament, divides each octave equally into the same number of half steps, creating enharmonic equivalence.

only used sharps and not flats, the key of F would have two A's and no B's which causes confusion (Figure 4.10).

**Figure 4.10** Incorrect vs. Correct Scale Spelling

Incorrect:

F—G—A—A<sup>#</sup>—C—D—E—F

Correct:

F—G—A—B<sup>b</sup>—C—D—E—F

If this seems like a trivial point now, it will seem more important later in the next chapter, as we discuss scales. So, to summarize, there are 12 notes total in the space of an octave (Figure 4.11).

**Figure 4.11** Chromatic Scale:

A—A<sup>#</sup>/B<sup>b</sup>—B—C—C<sup>#</sup>/D<sup>b</sup>—D—D<sup>#</sup>/E<sup>b</sup>—E—F—F<sup>#</sup>/G<sup>b</sup>—G—G<sup>#</sup>/A<sup>b</sup>—A

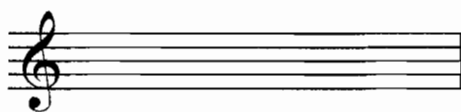
These 12 pitches in this order form what is called the *chromatic scale*. A scale is an ordering of pitches from low to high and will be discussed later. The word chromatic means “color” and indicates that this scale uses the full spectrum of notes (or colors) available in western music.<sup>7</sup>

<sup>7</sup> “Western music” pertains to the music that utilizes the notes from the chromatic scale, developed in Europe (as opposed to “country western”). The folk music of Near East and East Asian cultures often use pitches outside this scale.

### **Notation on the Staff**

In traditional notation and lead sheet notation, musical symbols represent various aspects of performance (pitch, rhythm, dynamics, etc.) by notes on a staff. A staff is a set of five lines separated by four spaces on which we notate musical notes. Variations in pitch are distributed vertically; high notes are higher on the staff than lower notes (Figure 4.12).

**Figure 4.12** The Staff:



On its own, a staff cannot tell you which note is which as it is only a set of lines. A clef, which is a symbol placed at the beginning of the staff, determines pitch names on the staff. There are two main clefs used by instruments and voices. The treble clef and the bass clef are the most common clefs, though some other clefs are used at times. Just like the treble and bass knobs on a stereo are used for high and low frequencies, so are these clefs. The **treble clef** is reserved for higher sounding instruments, including the guitar, the right hand of the piano, and the female voice. Bass guitarists, the piano's left hand and male voices, mostly use the **bass clef**. Though a hymnal will usually separate the voices in this way, treble and bass, lead sheets tend to use the treble clef for all instruments regardless of range. In this case each musician will sing or play the notes in their own register. As a worship leader with a contemporary style band, learning how to read notes on the treble clef is more immediately important than learning the bass clef.

### **Notes on the Treble Clef**

A careful look at the contour of the treble clef will reveal a stylized "G" whose loop circles around the second line from the bottom of the staff. This clef is

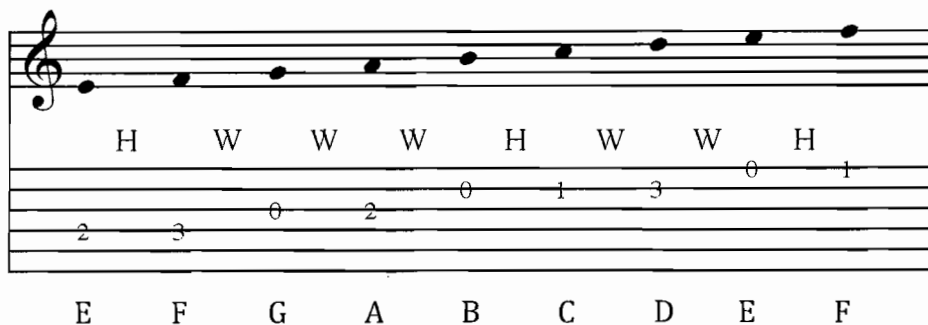
indicating that notes on this line are G. For this reason, the treble clef is often called the “G Clef” (Figure 4.13).

**Figure 4.13** Treble Clef:



Simply by knowing where G is, one can easily determine where any other note is. As pitches are arranged on the staff from low to high using both lines and spaces, the space directly up from the second line would be reserved for the note A and the space below it for F. So the lowest line of the staff to the top line would cover just over an octave from E—F (Figure 4.14).

**Figure 4.14** Notes on the Treble Clef:



***Tip: Learning Notes on the Treble Clef***

There are some helpful ways of remembering where the notes are on the treble clef that you may remember from grade school. If you isolate only the notes that are found on the five lines of the staff they would be E, G, B, D, F from lowest to highest. The acronym using these letters is “*Every Good Boy Does Fine*”. Note that “fine” rhymes with “line.” This is a very helpful mnemonic for remembering what notes go on the lines from lowest to highest. Also the four spaces from lowest to

highest spell the word FACE, which also rhymes with space, another helpful coincidence (Figure 4.15).

**Figure 4.15** Learning the Treble Clef:

Every Good Boy Does Fine:                      FACE:

The figure shows a musical staff with a treble clef. The first staff contains the notes E, G, B, D, F, F, A, C, E. The second staff is a guitar tablature with fret numbers: 2, 0, 0, 3, 1, 3, 2, 1, 0. The notes are labeled E, G, B, D, F, F, A, C, E below the tablature.

### Notes on the Bass Clef

**Figure 4.16** Bass Clef



The bass clef, like the treble clef, is a symbol that specifies the placement of one pitch. It is often called the “F Clef” as it vaguely resembles an F (Figure 4.16). Its characteristic dots surround the second line from the top of the staff and indicate the location of F just below middle C. The rest of the notes can then be determined above and below this line. The range of pitches on the five line staff of this clef spans over an octave from G—A. Here, bass guitar tablature has been used since these notes go below the natural range of a six-string guitar (Figure 4.17).



**Figure 4.17** Notes on the Bass Clef:

Figure 4.17 shows a bass clef staff with eight notes: G, A, B, C, D, E, F, and G. Below the staff, the notes are labeled with letters: W, W, H, W, W, H, W, W. Below the guitar fretboard, the notes are labeled with letters: G, A, B, C, D, E, F, G, A.

**Tip: Learning Notes on the Bass Clef**

Similar mnemonics can be applied to familiarizing yourself with notes on the bass clef. The notes on the lines from low to high are ordered G, B, D, F, A. The corresponding acronym “Good Boys Do Fine Always” is helpful. Also the arrangement of notes on spaces from low to high creates the word ACEG and one can remember that “All Cows Eat Grass” (Figure 4.18).

**Figure 4.18** Learning the Bass Clef:

Figure 4.18 shows two mnemonics for learning the bass clef. The first mnemonic is “Good Boys Do Fine Always:” with notes G, B, D, F, A. The second mnemonic is “All Cows Eat Grass:” with notes A, C, E, G. Below the staff, the notes are labeled with letters: G, B, D, F, A, A, C, E, G.

**Ledger Lines**

Notes that are higher or lower than those that fit on the staff can still be indicated in the music through ledger lines. **Ledger lines** are drawn above or below the five line staff to extend it in either direction higher and lower to allow for notes that are outside of the range of the staff (Figure 4.19).

**Figure 4.19** Ledger Lines:

Figure 4.19 shows musical notation with ledger lines. The top staff is a treble clef with notes F, G, A, B on the first ledger line above the staff, and E, D, C, B on the first ledger line below the staff. The bottom staff is a guitar TAB with fret numbers 1, 3, 5, 7 for the first four notes and 2, 0, 3, 2 for the last four notes. The notes are labeled F, G, A, B, E, D, C, B below the staff.

**8va and 8vb**

Although ledger lines are used quite frequently when the notes drift above or below the staff, they can become very difficult to read when there are too many. For instances when a melody is exceedingly high above or below the staff, melodies are generally written in a register where they occupy the staff with a notational indication that the given melody is intended to be played an octave higher or lower. For melodies that are intended to be played an octave higher than written, the **8va** symbol is used. This is an abbreviation for *ottava*, meaning octave. This symbol is accompanied by a dotted line that shows what part of the melody to transpose up an octave (Figure 4.20).

**Figure 4.20** 8va:

Sounding pitches:

Written:

Figure 4.20 shows musical notation with the 8va symbol. The left staff shows 'Sounding pitches' with notes written on a standard staff. The right staff shows 'Written' with notes written on a standard staff, but with a dashed line above the staff and the symbol 8va indicating that the notes are written an octave higher than they sound.

For melodies that are intended to be played an octave lower than written, **8vb** is used. This is an abbreviation for *ottava bassa*. The pitches are written an octave higher than where they actually sound (Figure 4.21).

**Figure 4.21** 8<sup>vb</sup>:

Sounding Pitches:

Written:

**The Grand Staff**

The bass and treble clefs together form the *grand staff*. The treble and bass clefs are actually fairly close to each other in terms of range. A juxtaposition of the two clefs, the treble directly above the bass, necessitates only one ledger line between them on the note C. This is the location of middle C (C<sup>4</sup>).

**Figure 4.22** The Grand Staff:"Middle C" (C<sup>4</sup>)

Much music is arranged on the grand staff, most notably keyboard music, organ music and choir music, like what is found in most hymnals. In the case of keyboard instruments, the right hand plays all the notes on the treble clef while the left hand plays the notes found on the bass clef. For hymnals, the grand staff serves a dual purpose in that it provides the music for an accompanist, usually piano or organ, and a choir or soloist(s). For these arrangements, there are usually four separate melodic lines that, when sung simultaneously, create a harmonic (or chordal) composition. These four lines are delineated as soprano, alto, tenor, and

bass (SATB).<sup>8</sup> In most cases the soprano and alto parts are notated on the treble clef while the tenor and bass lines are notated on the bass clef. Take this arrangement of the hymn *I Know That My Redeemer Lives* for example. This is a typical SATB arrangement notated on the grand staff, sung by a choir, played by a keyboard instrument or both (Figure 4.23).

**Figure 4.23** I Know that My Redeemer Lives – Samuel Medley & John Hatton

The musical score is presented on a grand staff. The top staff uses a treble clef and the bottom staff uses a bass clef. The key signature has one sharp (F#) and the time signature is 2/2. The melody in the treble clef consists of the following notes: G4 (quarter), A4 (quarter), B4 (quarter), C5 (quarter), B4-A4 (beamed eighth notes), G4 (quarter), F#4 (quarter), E4 (quarter), D4 (quarter), C4 (half). The bass line consists of: G2 (quarter), B1 (quarter), D2 (quarter), E2 (quarter), F#2 (quarter), G2 (quarter), A2 (quarter), B2 (quarter), C3 (half). The lyrics are placed below the treble staff: 'I know that my re - deem - er - lives!'.

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So far we have discussed the pitch element of music and how it is notated on a staff, but before we dive into an in depth discussion of how pitch creates melody and harmony in a song, we will turn our attention to the temporal aspect of music, rhythm, in the next chapter.

### **Practice Exercises**

Take a moment to practice what you've learned with the exercises below. For the examples that contain notes on the staff, pencil in the note names, where they could be located on the TAB, and identify what type of step is between them. For examples that have notes already written in the TAB, indicate where they are located on the staff and what kind of step it is. Use W, H, or N to designate between whole step, half step, or neither (Figure 4.24).

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<sup>8</sup> SATB arrangements are the norm, but SSA, SATTB, SSATTB and other variants occur for denser arrangements (those with more than four voices).

**Figure 4.24** Practice Exercises

The figure displays four sets of musical notation for guitar practice exercises. Each set includes a standard musical staff and a corresponding TAB staff.

- Exercise 1:** The standard staff is in treble clef. The first two measures contain quarter notes G4 and A4. The third measure contains a quarter note B4 with a sharp sign (#). The TAB staff shows fret numbers 0, 2, and 1 3.
- Exercise 2:** The standard staff is in treble clef. The first measure contains quarter notes F#4 and G4. The second measure contains quarter notes A4 and Bb4. The third measure contains a quarter note C5. The fourth measure contains a quarter note B4. The TAB staff shows fret numbers 10 and 8.
- Exercise 3:** The standard staff is in bass clef. The first two measures contain quarter notes G3 and A3. The third measure contains a quarter note B3 with a flat sign (b). The fourth measure contains a quarter note C4. The TAB staff shows fret numbers 0 1, 3, and 5.
- Exercise 4:** The standard staff is in bass clef. The first measure contains quarter notes G3 and A3. The second measure contains quarter notes B3 with a sharp sign (#) and C4 with a flat sign (b). The third measure contains a quarter note D4 with a sharp sign (#). The fourth measure contains a quarter note E4 with a sharp sign (#). The TAB staff shows fret numbers 6 and 8.

### Notes

<sup>xiv</sup> Piano, "Welcome to the Vibration Data Piano Page," Tom Irvine, <http://www.vibrationdata.com/piano.htm> (accessed August 7, 2010).

## CHAPTER V

### RHYTHM & POPULAR SONG FORM

Rhythm is an aspect of music theory that many people gloss over too quickly. The reason may be that for many musicians learning rhythm seems largely intuitive and is more of a visceral thing than pitch. There are many musicians who can execute highly complex rhythms seemingly without a lot of effort or even repeat back almost any rhythm with an instrument after only one hearing. So, discussing the concepts within this chapter may feel laborious when it takes a lot of words to describe something your ear can understand quite quickly. But taking time to study rhythm from a theoretical position is absolutely necessary for the ability to read any notation that includes rhythm, for understanding of more complex theory, and for mastering many of the concepts and techniques discussed in this book.

#### **The Beat**

The beat is something which most everybody, even the non-musician, is familiar. It is one of the most immediately perceptible aspects of music and one of the most deeply felt. The beat is the pulse in music that makes your body want to move. When people react physically to music through movement, it is usually manifested in the beat. We tap our feet, clap our hands, bob our heads, and dance with a friend to the beat.

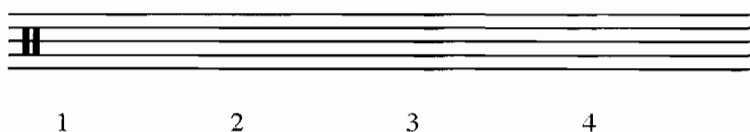
The beat is fundamental to rhythm for it is what any rhythm, fast or slow, is measured by. The speed of the beat is measured in terms of its *tempo* and tempo is determined by the beats per minute (bpm). Average tempos for slow, medium, or fast tempo songs might be 66, 92, and 120bpm, respectively. A good way to establish a steady tempo during practice or to measure tempo is to use a metronome, a device that creates a steady pulse according to beats per minute.

## Meter & Measure

Listen for the beat in most any style of music, especially popular music<sup>9</sup> and jazz, and you should begin to perceive a regular grouping of beats. In rock music, you will be drawn to the sound of the drums, specifically the interplay of the kick drum, snare drum, and hi-hat laying down a regular “BOOM-chick-POP-chick-BOOM-chick-POP-chick” pattern (or something similar). The kick and snare together delineate the repeated beat grouping of 4 beats and the hi-hat shows the division of the beat of 2 notes per beat (“BOOM-chick” and “POP-chick”). The cyclic grouping and division of the beats is called the *meter*. Every rhythm that the drummer or any other instrument plays is governed by and is relative to the meter.

A single cycle of the meter is called a *measure* and is depicted on the staff through bar lines drawn vertically through the staff. Depending on the meter, a measure may be very short, being 2 to 4 beats in length, or longer, having 6 beats. Also odd groupings may occur as well, with measures that are 5, 7, or even 9 beats long. The most common meter is a four beat pattern (called common time), as in our rock beat. Here a new bar line will be drawn every four beats (Figure 5.1).

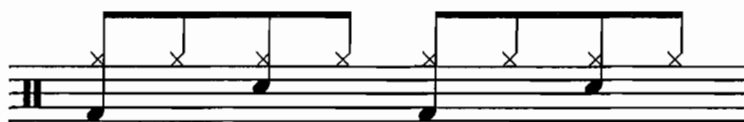
**Figure 5.1** One Measure in Common Meter:



Here is how a basic rock beat described above would appear fitted into a single measure (Figure 5.2).

---

<sup>9</sup> Throughout this book, references to “popular music” or “popular genres” indicates music typified by mainstream popular musical genres including, rock, country, folk, etc. as opposed to classical or jazz styles.

**Figure 5.2 Basic Rock Beat (1 Measure):**

BOOM - chick - POP - chick - BOOM - chick - POP - chick

1 2 3 4

Listen to just about any music and you can count measures as they go by. Sing the hymn *Holy, Holy, Holy* while clapping or tapping a 4 beat meter. This metric grouping should be immediately obvious (Figure 5.3).

**Figure 5.3 Holy, Holy, Holy – John Dykes & Reginald Heber**

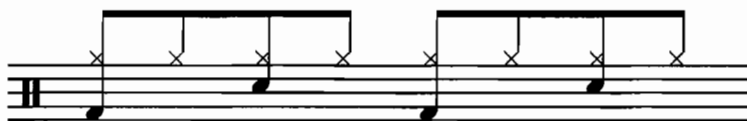
C Am G C F C

Ho - ly, ho - ly, ho - ly! Lord God al - migh - ty!

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### **Divisions of the Beat**

Until now, we've discussed *groupings* of the beat (beats, measures, and phrases), but most of what is played on a given instrument is shorter and related to the larger grouping as a *division* of the beat. Some rhythms are faster than the beat and occur several times between the beat, like how the drummer divides the beat into 2 with his hi-hat in our basic rock beat (Figure 5.4).

**Figure 5.4 Basic Rock Beat (1 Measure):**

BOOM - chick - POP - chick - BOOM - chick - POP - chick

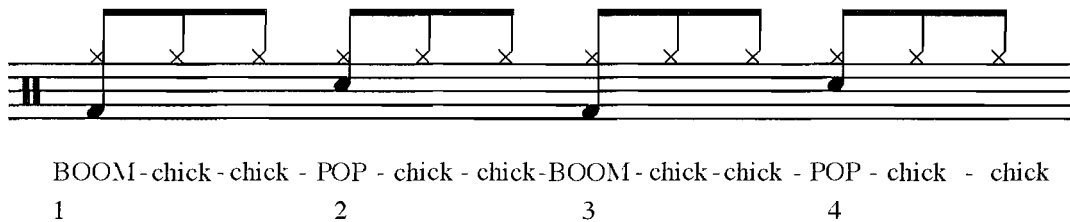
1 2 3 4



## Simple vs. Compound Meter

When the beat is immediately divisible by 2 like this, it is called a *simple meter*. However, when the beat divides by 3, it is called a *compound meter*. With this meter, we could modify our rock beat slightly to accommodate a compound division, e.g. “BOOM-chick-chick-POP-chick-chick, etc.” on the drums (Figure 5.5).

**Figure 5.5** Rock Beat in Compound Meter:



We will discuss further the various applications of simple and compound meters, but first we must further develop our rhythmic nomenclature by turning to a discussion of the notation of rhythmic duration.

## Notation of Rhythmic Durations

Thus far we have developed a basic vocabulary and understanding for rhythm, but to be able to talk with any specificity about meter beyond the surface elements that delineate it, we must develop a vocabulary for all the possible durations of rhythm.

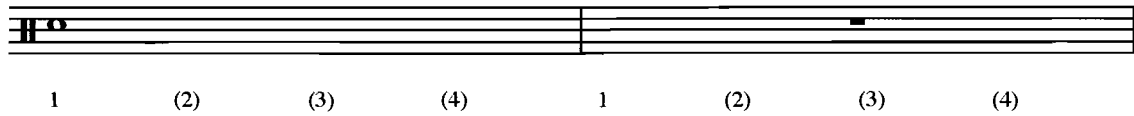
### Note Durations

**Whole Note** – This note value will last four beats and thus will last the whole duration of a four beat measure. Play a note and count four beats before stopping the sound or playing again (Figure 5.6).

**Figure 5.6** Whole Notes & Rests

Whole Note:

Whole Rest:



Listen for this note duration in the context of the song *Jesus Messiah* on the long note of the last syllable of the word “Emmanuel” (m. 4). Play and sing this example (Figure 5.7).

**Figure 5.7** Jesus Messiah – Chris Tomlin, Daniel Carson, Ed Cash, & Jesse Reeves

Bles-sed Re-deem - er; Em-man-u-el. The Res-cue for

©2008 Vamos Publishing

**Half Note** – This note value lasts half as long as a whole note, thus it lasts only two beats. It appears like a whole note, but has a stem that will point either up or down. Count, “1, 2, 3, 4” playing a note on beats 1 and 3 (Figure 5.8).

**Figure 5.8** Half Notes & Rests

Half Notes:

Half Rests:



The familiar hymn *Holy, Holy, Holy* provides a good example of half notes on the words “holy” and “mighty” (Figure 5.9)

**Figure 5.9** Holy, Holy, Holy – John Bacchus Dykes & Reginald Heber

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**Quarter Note** – A quarter note is a quarter of a whole note and lasts for only one beat. It looks like half note, but its note head is filled in. Count, “1, 2, 3, 4” and play a note on every beat of the measure.

**Figure 5.10** Quarter Notes & Rests

Quarter Notes:

Quarter Rests:

Note that stems may point up or down depending on where they are placed on the staff. Usually notes placed above the third line (B on a treble clef) have stems that point downward. This is only to insure that the stems don't stray too far or above the staff and does not affect the way they are played. See the example below.

**Figure 5.11** And Can it Be – Charles Wesley & Thomas Campbell

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**Eighth Note** – This is half a quarter note and so it is the first division of the beat itself. There would be two equal eighth notes per beat, so count and play, “1 & 2 & 3

& 4 &.” Eighth notes appear like quarter notes, but have a flag or may be beamed together if played succession (Figure 5.12, 5.13).

**Figure 5.12** Eighth Notes & Rests

Eighth Notes: Eighth Rests:

1 & 2 & 3 & 4 &      1 & 2 & 3 & 4 &

**Figure 5.13** Everlasting God – Brenton Brown & Ken Riley

B $\flat$  B $\flat$ <sub>sus4</sub> B $\flat$  B $\flat$ <sub>sus4</sub>

Strength will rise as we wait up - on the Lord, we will wait

©2005 Thankyou Music

**Sixteenth Note** – There are two sixteenth notes for every eighth note, four for every quarter note, and sixteen for every whole note. They look like eighth notes but have two flags or beams. These are best counted, “1 ee & a, 2 ee & a...” and so on. These are usually the fastest rhythms normally played, though faster divisions may exist, 32<sup>nd</sup> notes, and even 64<sup>th</sup> notes. As further divisions are created beyond the sixteenth note, more flags or beams are added (Figure 5.14).

**Figure 5.14** Sixteenth Notes & Rests

Sixteenth Notes: Sixteenth Rests:

1 ee & a 2 ee & a 3 ee & a 4 ee & a      1 ee & a 2 ee & a 3 ee & a 4 ee & a

Sing and play the beginning of Matt and Beth Redman’s *You Never Let Go* and listen for the quick bounce of sixteenth notes. The rapid succession of the words over

these note values ensures that this song isn't played too fast or a congregation couldn't keep up (Figure 5.15).

**Figure 5.15** You Never Let Go – Matt & Beth Redman

B

E - ven though I walk through the val - ley of the sha - dow of death, Your

©2005 Thankyou Music

### A Note About Rests

Just as the notes we play make up rhythm, so do the notes we *don't play*. Every rhythmic note value has its equivalent rest, which is merely musical silence or space. The concept of the rest makes readily significant the precise duration of notes. Any silenced note creates a rest. For example, if you strum your guitar once and let it ring out for 4 beats, this is strikingly different from strumming it once and stopping on the second beat. The first instance would create a chord four-beats long, while the second would be one-beat long followed by 3 beats of rest. It seems that rests are often overlooked in performance. I have found it is easy to get caught up in thinking about what I should be playing that I forget that the act of not playing, creating space, is in itself a very important musical act.

As we have already seen, rests are counted the same way as their equivalent notes, but are given notated symbols. In nearly every case, notes and rests relate to the beat as divisions of either two or three. Also, if a rhythm has longer note values than the beat itself, it may be a multiple of two or three times the beat.

The arrangement below of *You Never Let Go* shows how rests can help create a very powerful moment, perhaps beyond what any notes would do in their place. This arrangement of the end of the bridge section is depicted on two staves, one depicting melody and one with rhythm (this is written as a drum part, but assume that the rest of the band would play along with the drums here). On the second

measure the rhythm section hits a quarter note on beat 1, allowing the melody to “spring off” the downbeat. At this point, the rhythm section rests for the next two beats while only the voices sing, “still I will praise You,” and on the last beat the band re-enters to drive the bridge back into the chorus (Figure 5.16).

**Figure 5.16** You Never Let Go – Matt & Beth Redman (Rhythm Chart):

The figure shows a musical score for the song "You Never Let Go" by Matt & Beth Redman. It consists of two staves. The top staff is a vocal line in treble clef, with a key signature of three sharps (F#, C#, G#) and a 4/4 time signature. The lyrics are "still I will praise You, still I will praise You." The bottom staff is a rhythm chart in bass clef, showing a drum pattern with 'x' marks for cymbals and asterisks for snare. Above the rhythm chart are chord symbols: F#sus, E2, B, F#sus, E2.

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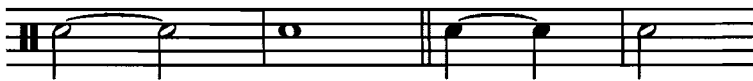
This is perhaps a more dramatic example, showing how a whole band can rest or “cut out” to make an exciting musical arrangement, but rests should be used more subtly, throughout any given arrangement and by all instruments to provide necessary space. Think about it this way: We’ve made much use of the analogy of music as language, so it is appropriate to think of rests like the spaces between words or sentences in speech. Listeners need to have space in order to process what they hear. For example, if someone were to speak to you without any breaks in their speech, you would eventually stop listening, no matter much you wanted to listen, because people *need* the space or they become fatigued. The same is true for music. Music must have space, which makes rests so valuable. As was said earlier, musicians should listen as much for when not to play as for when to play. In so doing they not only to make space for other musicians to fill, but make rests so that the listener can rest as well. This is a hard lesson to learn for many musicians, because playing is so fun! But there is virtue in thinking of others first and working together to create something beautiful, even when it means sacrificing musical real estate that you would otherwise occupy.

**Ties**

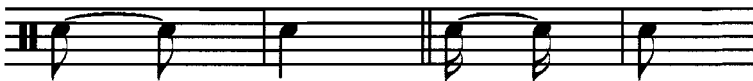
An important notational device used in music is the tie. A tie is an arched line drawn in the music that connects two notes of the same pitch. Two notes that are tied together are connected so that they become one note that equals the sum of their lengths. For instance, two quarter notes that are tied become one half note (Figure 5.17).

**Figure 5.17** Ties:

Tied Halves = Whole etc.



Tied Eighths = Quarter etc.



One reason that a tie would be used in the music rather than a half note is that sometimes it is necessary to show a half note as two quarter notes. A good example of this would be an instance when a note is held over a bar line dividing two measures. See the opening phrase of Matt Redman’s *Let My Words Be Few* (Figure 5.18).

**Figure 5.18** Let My Words be Few – Matt & Beth Redman



You are God in hea - ven, and here am I on earth,

©2000 Thankyou Music

Another instance where a tie is often used is when a long note value obscures the middle of the measure, which would be beat 3 in common time. This beat, being the

halfway mark and a natural stable point of the measure, is helpful for musicians to see, especially in the case of more complex rhythms. So, in order to graphically show where this stable beat is, a tie may be used where a longer note value would obscure its location (Figure 5.19).

**Figure 5.19** Ties:

Sounded:

Preferred:

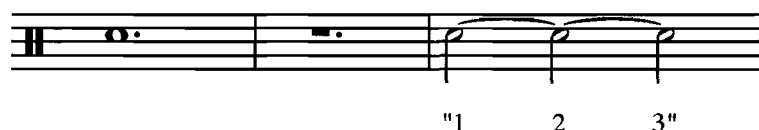


## Dots

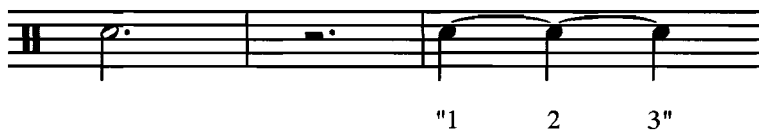
Until now, we have discussed rhythm division that are multiples of two, but a rhythmic grouping of 3 can be achieved through the use of the *dot*. When a dot is attached to a note value it increases the length of the note by 50%. In other words, a dot adds half of the value of the original note or rest. Thus, a half note (worth two quarters) would be worth three quarters in length with a dot (Figure 5.20).

**Figure 5.20** Dots:

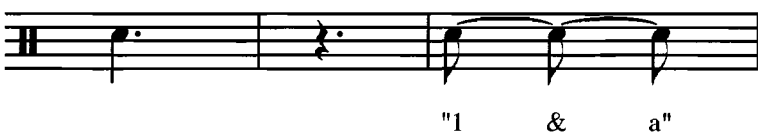
Dotted Whole Note & Rest:



Dotted Half Note & Rest:



Dotted Quarter Note & Rest:





## Dotted Eighth Note &amp; Rest:



Dotted rhythms are used extensively in compound meters where the beat divides into three parts (to be discussed in the next section). The example below of the hymn *Blessed Assurance* shows how dotted rhythms achieve this necessary grouping in a compound meter. Every 3 eighths equal 1 beat, putting the dotted quarter on every beat (Figure 5.21).

**Figure 5.21** Blessed Assurance – Fanny Crosby & Phoebe Knapp

The image shows a musical staff in treble clef with a key signature of one sharp (F#) and a 3/8 time signature. The melody consists of eighth and dotted quarter notes. Above the staff, the following chords are indicated: D, G, D, A/E, E7, A, D. Below the staff, the lyrics are: "Blessed as-sur-ance, Je-sus is mine! \_\_\_ O what a fore-taste of glo-ry di-vine! \_\_\_ Heir of sal".

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Dotted rhythms are used in simple meters as well when a note carries over into the first part of the next beat. Sing *Great Is Thy Faithfulness* and listen for how the dotted quarter note effects the rhythm in measure 2. Here the dotted quarter, which is worth 3 eighths, spans beat 1 (2 eighths) and the first half of beat 2 (1 eighth) (Figure 5.22).

**Figure 5.22** Great is Thy Faithfulness – Thomas Chisholm & William Runyan

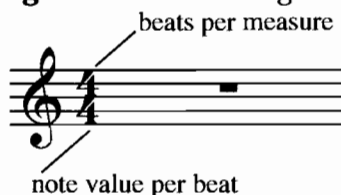
The image shows a musical staff in treble clef with a key signature of one sharp (F#) and a 3/4 time signature. The melody consists of quarter and dotted quarter notes. Above the staff, the following chords are indicated: D, D+, Gmaj7, G6, A7, G/B, A7, G/D, D. Below the staff, the lyrics are: "Great is Thy faith-ful-ness, O God my Fa-ther,".

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## Time Signatures

Now that we have discussed the different note values possible, it is possible to explain the time signature. The *time signature* is the symbol placed at the beginning of a song or section of music (often after the key signature) to show the meter and explain how it is notated. The time signature is shown by two numbers stacked on top of each other, as in a fraction. The top number represents the number of beats in the measure, so a four beat meter would have a 4 on top. The bottom number tells you what rhythmic value equals the beat. Like the denominator of a fraction, the bottom note gives the rhythmic value. An eight on bottom means an eighth note equals the beat, a 4 means that the quarter note gets the beat, a 2 means a half note, etc. For example, if you have a four beat meter where the quarter note gets the beat, it will say 4/4. This is called “four-four time” (Figure 5.23).

**Figure 5.23** Time Signature:



Another common simple duple time signature is 2/4. Its steady plodding beat is reserved usually for marches, plenty of which can be found in hymn repertoire. The time signature 3/4 is a common example of simple triple meter. Its uneven 3 beat meter has a characteristic swaying or rocking feel. It is often called the “waltz” as this meter was very popular in classical dance music.

It is never difficult to find an example of a song in 4/4 time, most tunes are written in this meter. Out of CCLI’s Top 100<sup>10</sup> as of January 2009, 95 are written in

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<sup>10</sup> Christian Copyright Licensing International’s recorded 100 most popular according to number of downloads from their online database.

4/4 time. This time signature is so common that it has even earned the name common time. Consequently, this meter is occasionally indicated only by a “C” instead of the usual 4/4 signature. Yet some other simple meters can be found among the most popular worship songs. *In Christ Alone* written by Stuart Townend and Keith Getty is in 3/4 (Figure 5.24) and *How Deep The Father’s Love For Us* by Stuart Townend is written in a rare 5/4, though it is often performed in 6/4 (Figure 5.25).

**Figure 5.24** *In Christ Alone* – Stuart Townend & Keith Getty

G     D     G     A     D/F#     G     D/F#     Em7 G/A     D     G

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**Figure 5.25** *How Deep the Father’s Love For Us* – Stuart Townend

D                     Em D/F#G                     D/F#                     D/A     A

©1995 Thankyou Music

### Pick-ups

You will notice that, with the exception of the first, the measures in each song contain rhythms that add up to equate the number of beats in the time signatures, 3 and 5, respectively. However, the first measure of either song doesn’t add up this way. The first bar of *In Christ Alone* has the equivalent of three eighth notes and the beginning to *How Deep The Father’s Love For Us* has only a single eighth note. These are both called pick-up measures. A song has a ***pickup measure*** (or ***anacrusis***) when the first notes of a song occur as an upbeat preparation. Listen for how the

anacrusis works as a lead-in landing on a later syllable: “*In Christ Al – one*” and “*How Deep.*”

### Rhythms in Compound Meter

Compound meters subdivide the beat into three parts, so naturally there will be many dotted rhythms used. In compound meter, the beat equals a dotted quarter note instead of a quarter note, so that the beat divides into three eighths not two. After that, the eighth notes simply divide into 2 sixteenths, as normal, so the first division of the beat is the only one that marks a difference between simple and compound meters.

**Figure 5.26** Simple vs. Compound Meters:  
Metrical Division in Simple Duple (2/4):

Musical notation for Simple Duple (2/4) meter. The staff shows four measures. The first measure has a dotted quarter note. The second measure has two eighth notes. The third measure has a quarter note followed by an eighth rest and another eighth note. The fourth measure has a quarter note followed by an eighth rest and another eighth note. Below the staff, the metrical division is indicated: 1 (2) 1 2 1 & 2 & 1 ee & a 2 ee & a

Metrical Division in Simple Triple (3/4):

Musical notation for Simple Triple (3/4) meter. The staff shows four measures. The first measure has a dotted quarter note. The second measure has three eighth notes. The third measure has a quarter note followed by an eighth rest and another eighth note. The fourth measure has a quarter note followed by an eighth rest and another eighth note. Below the staff, the metrical division is indicated: 1 (2) (3) 1 2 3 1 & 2 & 3 & 1 ee & a 2 ee & a 3 ee & a

Metrical Division in Compound Duple (6/8):

Musical notation for Compound Duple (6/8) meter. The staff shows four measures. The first measure has a dotted quarter note. The second measure has two eighth notes. The third measure has a quarter note followed by an eighth rest and another eighth note. The fourth measure has a quarter note followed by an eighth rest and another eighth note. Below the staff, the metrical division is indicated: 1 (2) (3) (4) (5) (6) 1 (2) (3) 4 (5) (6) 1 2 3 4 5 6 1 & 2 & 3 & 4 & 5 & 6 &

Metrical Division in Compound Triple (9/8):

Musical notation for Compound Triple (9/8) meter. The staff shows four measures. The first measure has a dotted quarter note. The second measure has three eighth notes. The third measure has a quarter note followed by an eighth rest and another eighth note. The fourth measure has a quarter note followed by an eighth rest and another eighth note. Below the staff, the metrical division is indicated: 1(2)(3)(4)(5)(6)(7)(8)(9) 1(2)(3)4(5)(6)7(8)(9) 1 2 3 4 5 6 7 8 9 1 & 2 & 3 & 4 & 5 & 6 & 7 & 8 & 9 &

Compound meters may still have any number of beats, usually 2, 3, or 4, and outside an initial division of the beat, the rhythms are still divided by two.

### Compound Duple & Compound Triple

A compound duple meter is one where two or four dotted rhythms get the beat. Although songs with compound meters are less common than those with simple meters, there are still a number of popular worship songs that use this meter. *He Is Exalted* by Twila Paris is written in 6/8 meter (Figure 5.27).

**Figure 5.27** He Is Exalted – Twila Paris

F                      F/A                      B $\flat$                       B $\flat$ /C                      C7

He is ex-alt-ed, the King is ex-alt ed on high, I will praise Him.

©1985 Straightway Music/Mountain Spring Music

The opening words, “*He is exalted, the King is exalted...*” exemplify 6/8’s characteristic duple grouping of 6 eighth notes. Compound triple meters have a grouping of three dotted rhythms for beats. The most common of these is 9/8, which is not often used in popular music. The classic hymn *Blessed Assurance* by Fanny Crosby and Phoebe Knapp is perfect example of a song with a compound triple meter (Figure 5.28).

**Figure 5.28** Blessed Assurance – Fanny Crosby & Phoebe Knapp

D                      G                      D                      A/E      E7                      A                      D

Blessed as-surance, Je-sus is mine! O what a fore-taste of glo-ry di-vine! Heir of sal

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You will notice in both 6/8 and 9/8 meters that though the beat is every three eighth notes, the time signatures suggest that the beat is on every eighth note. Compound meters pose a problem with the notation of their time signature. Since there is no whole number to represent a dotted note for the bottom number in a

signature, these time signatures are notated to represent the division of the beat and not the beat itself. For instance, a “4” represents a quarter note in the bottom number of the signature, so a dotted quarter note would be 4.5 or something equivalent. Rather than do this, the compromise represents the time signature in terms of its number of eighth notes. So a simple duple time is 6/8 instead of 2/4.5 and a compound duple is 9/8 instead of 3/4.5. For both, the beat is still on the dotted quarter, though the time signature doesn’t show this.

### **Syncopation**

As you learn to play various rhythmic values and patterns in different time signatures, you will notice that some rhythms may be easy while others are more difficult. Certain rhythms are hard to feel because certain portions of the beat are more difficult to perceive than others.

The division of the measure into multiples of two, beginning with the whole note and ending with the sixteenth creates a hierarchy that is very perceptible. For instance, the whole note in 4/4 whose articulation (the point where the value begins) is on beat 1 of the measure. This is felt as the strongest and most stable point in the measure. The next division, the half note creates another articulation on beat 3, since a divided whole note becomes two half notes on beats 1 and 3. The third beat marks the middle of the measure and the next most stable point.

The first points of syncopation in a measure lie on the weak beats of the measure, beats 2 and 4. These beats, together called the “back beat,” mark the least stable beats in common time. Even less stable points are those points that fall between beats. An eighth note division creates articulations on the upbeats (or “&’s”), which are half way between beats. The least stable portions of the hierarchy are the articulations created by sixteenth notes. The “ee’s” and the “a’s” are half way between each eighth note subdivision (Figure 5.29).

**Figure 5.29** Division of the Beat:

As we move down this hierarchy, we become more dependent on knowing where the stable points are in order to accurately play notes in the less stable points. When music obscures these points of stability by emphasizing the unstable points this is called syncopation. The example below shows a steady quarter note pulse followed by a syncopation of the pulse where every note but the first is played on an off-beat.

A great way to work on developing your rhythmic accuracy is to practice syncopated rhythms. Practice playing syncopated quarter notes by playing notes only on beats 2 and 4; it shouldn't be too difficult. However, as one move down the hierarchy of rhythms, it will become increasingly challenging to play the right rhythms. By the time you are playing syncopated sixteenths (only playing notes on the "ee's" and "a's") it will be very difficult, especially at higher tempos. The reason is that it is our natural impulse is to play *with* the beat, not against it. It takes a lot of practice to learn how to play syncopated rhythms (Figure 5.30).

**Figure 5.30** Syncopation:  
Syncopation of Half Notes:

Syncopation of Quarter Notes:



### Syncopation of Eighth Notes:

1 & 2 & 3 & 4 & 1 ee a (2) ee a (3) ee a (-4) ee a

### Mental Subdivision

If you found the above exercise in syncopation very difficult or even impossible, a helpful way to increase your rhythmic accuracy is to practice subdividing the beat mentally. This means being able to hear in your mind (or at least perceive) a continuous subdivision of the beat. It is relatively easy to feel a quarter note division because this is usually equal to the beat. However, eighth notes and sixteenth notes are faster than the beat making them more difficult to feel. Practice by playing half notes while mentally counting quarter notes, "1, 2, 3, 4". Tap your foot to the beat as you play to keep it physically internalized. When you feel that you have mastered this at a medium tempo, attempt it at a smaller subdivision. Play quarter notes while thinking eighth notes in your mind. Mentally count, "1 & 2 & 3 & 4 &" and keep tapping your foot to the beat. When you get to sixteenth notes at a medium tempo, it may be too fast to internalize a subdivision that is twice the speed of what you are playing, so simply count sixteenth notes in your mind as you play them. When it takes little mental effort to steadily play sixteenth notes at a medium tempo, attempt to do this while playing syncopated quarters, eighths, and sixteenths.

### Duplets vs. Triplets

Another form of syncopation occurs when a triple rhythm is superimposed on a duple meter and vice versa. In the first case, a simple meter will contain rhythms that divide into three what would normally divide in two. This is a common rhythm known as a **triplet**. For example, create a steady beat by tapping your foot or by using a metronome. Then count, "1 & 2 & 3 & 4 &" to establish the sound of a duple meter. Create triplets by fitting 3 equal notes into the space of one



beat. Also count them out loud by saying, “1 & a” or “Tri-puh-let”. Once you have got the feel of triplets try going back to the original duple rhythm to practice transitioning between the triplets and duplets (Figure 5.31).

**Figure 5.31** Triplets Against Duplets:



Sometimes a duple rhythm will be superimposed onto a compound meter; this grouping is called a **duplet**. Try doing the same exercise as above, but start by establishing a compound meter and oppose it with duplets. Count, “1 & a, 2 & a, etc.” and then pair it with duplets, “1 & 2 & 3 & 4 &” or “Du-ple”.

The note value of a triplet or duplet is of the same denomination as the rhythm it is taking the place of. For example, a quarter note would normally divide into two equal eighth notes, so a triplet that fits into the space of a quarter note would be called an eighth note triplet. Likewise, eighth note duplets would fit into a dotted quarter note taking the place of three eighth notes. Triplets and duplets can be superimposed over any note value, thus there is the possibility of dividing notes longer or shorter than a beat. There could be quarter note triplets over a half note or conversely, quarter note duplets over a dotted half. Also, sixteenth note triplets and duplets can be used for faster rhythms (Figure 5.32).

**Figure 5.32** Duplets Against Triplets:



### **Popular Song Structure**

The above discussion has been concerned primarily with beat groupings and divisions that make up the bulk of rhythm found in music. However, there is a

larger temporal aspect that is central to the way a song is experienced, its musical form. Form pertains to the larger temporal constructions that determine how a song progresses from beginning to end. At this point we will begin with the measure and work our way outward to the largest possible units of song structure (verse, chorus, etc.).

### Phrase

Measures are the basic unit of time that delineates meter, but they are not the largest. As beats group together to form measures, measures themselves are grouped together to form a larger unit, called a **phrase**. Phrases are a collection of measures that make a complete musical unit that makes sense all to its own. In other words, a phrase doesn't sound like it needs any more measures to resolve it. Phrases are usually 4 or 8 measures in length, though some irregular measure groupings may occur. Listen to the opening phrase to *You Are My King (Amazing Love)* by Billy Foote. Even though there are four measures here, they don't sound complete. If you were to stop at this point in the song, things would seem awkward indeed (Figure 5.33).

**Figure 5.33** You Are My King (Amazing Love) – Billy Foote

D, F#                      G2                      A sus                      A

I'm for-giv - en, \_\_\_\_\_ be - cause You were \_\_\_\_\_ for - sak - en.

D, F#                      G2                      A sus                      A

I'm ac - cep - ted, \_\_\_\_\_ You - were \_\_\_\_\_ con - demned.



general purposes and uses in a given song. Song sections are often delineated in the staff through the use of **double bar lines**, as between the verse and chorus of the song below (Figure 5.36).

**Figure 5.36** Blessed be Your Name – Matt & Beth Redman

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**Verse** (or **Stanza**) – This is a section of a song that usually poses some sort of question, problem, or dialectic that is often resolved by the chorus. As a result, it is often introduced before the chorus and could be described as being more “wordy.” When multiple verses occur in a single song, the music is often repeated, while text can change each time to further develop ideas answerable by the chorus. Key musical features are: a more confined melodic range, lower melodic tessitura, and faster and more regular rhythms.

**Chorus** (or **Refrain**) – This section of music usually follows a verse and often poses the answer or solution to the verse’s text. The text of the chorus, providing the punch line for much of the rest of the song’s text, is often seen as carrying the central message or point of the song. Though it almost always has different lyrical and melodic content than the verse, the harmonic accompaniment may be the same. Key musical features: more expansive or “majestic” range, higher melodic tessitura, and more expansive (slower) rhythms.

**Bridge** – Although the bridge has carried a variety of more specific definitions in the history of music, in the most general of terms it refers to a section of music that is in contrast to both the verse and chorus, usually signaling the return of one or both of

those. It occurs later in a song development, usually after several repetitions of a verse, and though it can serve as an instrumental section, the bridge's text often develops ideas found in either the earlier choruses or verses. Key musical features: contrasting melodic and harmonic material.

***Pre-Chorus*** – The pre-chorus usually serves as connecting material between the verse and chorus. The music is used to build to the climax of the chorus, while the text leads into the chorus by connecting the lyrical “question” of the verse with the chorus’s “answer.” Key musical features: confined melodic range, lower melodic tessitura than chorus, anticipation-type chord progression (utilizing subdominant and related chords), and shorter in length.

***Intro*** – Simply put, it is a musical section that begins a song (usually instrumental). It sets the mood and musical context for the song by establishing the “groove” and preparing for the onset of the verse. Likewise, it usually contains the same harmonic progression as the section following it (usually the verse), though the music can be unique to that section.

***Outro*** – The outro, like the intro is a section defined by its location. It serves to wrap up the song, often through a harmonic “tag” that repeats the last several chords or measures of the song. It is often used to wind down a song that has ended big. Key musical features: typified by the use of a fade-out, and gradual decrease in tempo.

***Instrumental Solo*** (or ***Instrumental Interlude***) – A section of a song that utilizes the harmonic material from another section (e.g. verse or chorus) while an instrument or voice improvises a melody, often inspired by or identical to the song’s melody. It can serve to give space or reprieve between texted sections of the song, develop the song by transitioning to a new section, or perhaps take a song to a

higher level of intensity or expression than it otherwise could have. Sections of music that are reserved for instrumental accompaniment and where there is no text, are usually notated with **slash notation** – slashes drawn through the staff to delineate beats (Figure 5.37).

**Figure 5.37** Slash Notation:



- ***Concerning the Instrumental Solo: An Author's Note***

The use of the solo, especially the guitar solo, has been a point of great contention in the Church. As churches started to incorporate the musical idiom of rock in their worship services, the guitar solo was bound to come along as well much to the chagrin of many church goers. Surely, this is understandable as CCM was beginning to take root while the narcissism and blatant self-indulgence of late 80's glam-rock's guitar solos were in their heyday. But the concern over the use of non-texted musical expressions in worship is one that was hotly debated nearly 1500 years before Van Halen and probably well before that. St. Augustine (354-430), one of the most influential and respected of church fathers has written what may come as a surprise to those who hold that textless musical expression has no place in worship. Consider his words, "It is a certain sound of joy without words...it is the expression of a mind poured forth in joy...A man rejoicing in his own exultation, after certain words which cannot be...understood, bursteth forth into sounds of exultation without words, so that it seemeth that he...filled with excessive joy cannot express in words the subject of that joy."<sup>xv</sup> On a similar note, to those who discourage worship leaders from employing vocal flourishes not found in the music and thus seem flashy, consider Pope Damasus I (ca. 305-384) who wrote concerning similar vocal techniques,

“...we understand that which neither in words nor syllables nor letters nor speech is it possible to express or comprehend how much man ought to praise God.”<sup>xvi</sup>

### **More Vocabulary & Notation**

In order to navigate your way through all the aspects of a song structure, some further concepts must be explored that concern the order and expression in a given song.

### **Notation for Navigation**

Some of the most common notation that determines the order of a song are repeat signs, endings, signs, and codas, among others.

**Repeats** – The repeat sign is attached to the bar line on the front of a measure, the back, or both to indicate that all the music contained within the given area is to be repeated once, or more times if indicated. In the example below, the 4 measures enclosed by the repeat signs are to be repeated. Repeat signs help reduce the length of a score by consolidating identical sections of music into a single repeated passage. If only a backward repeat sign (one attached to end of a bar line) is present, the entire composition up to that point is to be repeated (Figure 5.38).

**Figure 5.38** Repeat Signs:



Similarly, for smaller sections of music, like individual measures, the **measure repeat** sign may be used. It is simply drawn over a measure to indicate that the content of the given measure is identical to the one preceding it. This

doesn't save page space so much that it saves one the effort of writing (and thus reading) bars that are identical (Figure 5.39).

**Figure 5.39** Measure Repeats:



**Endings** – Endings are used in conjunction with the repeat sign to direct the performer to a different way to end the repeated section of music. The 1<sup>st</sup> ending is the music as it is played the first pass through the repeated section. At the backward repeat sign, a bracket extends up from the end of the bar to enclose the measure(s) included in the 1<sup>st</sup> ending. The performer takes the repeat back to the beginning of the section and upon reaching the portion enclosed by the 1<sup>st</sup> ending bracket, skips that and goes immediately to the 2<sup>nd</sup> ending, enclosed by another bracket and usually indicated with a number 2. This may sound confusing at first, but it becomes second nature soon enough. For an example, refer to the pre-chorus that leads into the final chorus in Paul Baloché and Brenton Brown's *Hosanna (Praise Is Rising)* (Figure 5.40).

**Da Capo** – This means “to the beginning.” Like a repeat, it is written over a specific measure to indicate to the performer to start over from the beginning. It is often used in conjunction with the *fine* or *coda*.

**Fine** – It simply means “end”, this word is written into the music to indicate when to end a song when it isn't the last measure on the page. This usually occurs when a repeat or other symbol has directed the musician to another place in the score (where *fine* has been notated) after having played through all the measures on the page. It is often paired with *D.C.* or *D.S.*



**Figure 5.40 Hosanna (Praise Is Rising) – Paul Baloche & Brenton Brown**

The musical notation consists of three staves in treble clef with a key signature of one sharp (F#). The first staff contains the melody for the first line of lyrics: "'Cause when we see — You, we find strength to — face the day." Above the staff, the chords D(4) and C are indicated. The second staff continues the melody for the second line of lyrics: "In Your pre - sence all our fears — are — washed a - way." Above the staff, the chords G5, G5, and D are indicated. The third staff continues the melody for the third line of lyrics: "'Cause when we see washed a - way. \_\_\_\_\_ Ho". Above the staff, the chords G5 and D are indicated, with a first ending bracket and a second ending bracket labeled "2." below it.

©2006 Integrity's Hosanna! Music

**Coda (⊕)** – This symbol refers to a section of music, separate from all previous music, and is used to end a song. The performer, upon encountering *To Coda* or the coda symbol at a specific bar in the music then jumps to the measure where the other coda symbol is located. It is often used in conjunction with *D.C. al Coda* or *D.S. al Coda*.

**Segno (♯)** – The *segno* (or sign) is a symbol that is placed above a specific measure to indicate a specific point to return to in the music, much like a forward repeat sign. It is always paired with *D.S. al Fine* or *D.S. al Coda*, which indicate at some later point in the music to return to the measure that had the sign. The 4 notational terms above result in 4 common phrases found in music that combine these terms to create a specific set of instructions. They are:

- 1) **D. C. al Fine** – This phrase directs the performer to return to the beginning (*da capo*) and play the music to the end (*al Fine*).

- 2) **D. C. al Coda** – This means to return to the beginning and play the music to the coda sign (*al Coda*), at which point they will skip to the other Coda sign and play the coda section.
- 3) **D. S. al Fine** – Return to the sign (*dal Segno*) and play to the end (*al Fine*).
- 4) **D. S. al Coda** – Return to the sign and play to the coda sign (*al Coda*), at which point the performer will skip ahead and play the coda section.

### Notation for Expression

There are many types of notational symbols and phrases that indicate to a performer how to express certain musical passages, too many to be explored here. For a more complete treatment of such concepts and terms, see a music dictionary. However, a few very important ones will be discussed presently.

**Ritardando (Ritard)** – The ritard (often abbreviated as “rit.”) is a term that describes a gradual slowing down of the tempo. Ritards are most often used in the last few bars of a song to help bring the song to an end. Sometimes a ritard can be used momentarily in the middle of a song to help draw attention to the beginning of a new section of music (such as a final chorus or bridge). This would work well in Darlene Zschech’s *Shout To The Lord* in last measure of the verse, transitioning to a final declaration of the chorus (Figure 5.41). Ritards can also be used to facilitate a transition from a song of faster tempo to one of a slower tempo.

**Figure 5.41** Shout To The Lord – Darlene Zschech

The musical notation is on a single staff in treble clef with a key signature of two sharps (F# and C#). The melody consists of eighth and quarter notes. Above the staff, the following chords are indicated: F#m, G, D/F#, Esus4, E, A, and F#m. A ritardando (rit.) is marked with a dashed line over the notes corresponding to the Esus4 and E chords. A tempo change to 'a tempo' is marked above the A chord. The lyrics are: 'ne-ver cease to wor - ship You. Shout to the Lord, all the earth,'.

***A Tempo*** – Meaning, “in time”, this is a term that is used to indicate a return to original tempo after some kind of tempo alteration has been employed (Figure 5.41).

***Accelerando*** – The accelerando (accel.) is the opposite of a ritard. It is a gradual increase in tempo. An accelerando can be used as both a transitional device between songs and in the middle of a song to create anticipation and excitement in the music.

***Rubato*** – Traditionally, this term has a more strict meaning of how it affects rhythm, but it is commonly used to express the free use of time. Playing rubato allows the performer to slow down or speed up notes at will. The completely free use of time is often employed by a chord-playing instrument to create a specific atmosphere during reflective moments of a service, as during prayer.

***Fermata*** (  $\frown$  ) – A fermata placed on a particular note holds a particular pitch or pitches until the conductor or leader signals the group to continue. Fermatas are often used at the end of a song to hold out the last chord or else where in a song to bring attention to a key note or word as in the final phrase of the hymn *How Great Thou Art* by Stuart Wesley Keene Hine (Figure 5.42).

**Figure 5.42** How Great Thou Art – Stuart K. Hine

A            E7/B            A/C#            Bm7/D            F#7/C#    Bm    E7            A

Thee; \_\_\_\_\_ How great Thou art, \_\_\_\_\_ how great Thou art!

©1953 Stuart K. Hine, Renewed 1981 Manna Music, Inc

### **Practice Exercises**

The practice exercise for this chapter involves examining the rhythmic content and form of Joel Houston's song, *From The Inside Out*, in its entirety (Figure 5.43). This song provides a great example of song that contains many of the concepts discussed in this chapter. Match the vocabulary on the list below with the song by circling where you find it in the score and identifying it with the term's designated number.

- |                              |                            |
|------------------------------|----------------------------|
| 1) Measure                   | 18) Time signature         |
| 2) Bar line                  | 19) Syncopation            |
| 3) Double bar line           | 20) Slash notation         |
| 4) Half note                 | 21) Forward repeat sign    |
| 5) Quarter note              | 22) Backward repeat sign   |
| 6) Eighth note               | 23) 1 <sup>st</sup> ending |
| 7) Sixteenth note            | 24) 2 <sup>nd</sup> ending |
| 8) Half rest                 | 25) 3 <sup>rd</sup> ending |
| 9) Quarter rest              | 26) <i>D.S. al Coda</i>    |
| 10) Eighth rest              | 27) Coda (symbol)          |
| 11) Sixteenth rest           | 28) Coda (section)         |
| 12) Tie                      | 29) Segno                  |
| 13) Dotted quarter note      | 30) Fermata                |
| 14) Dotted eighth note       | 31) Verse                  |
| 15) Dotted quarter rest      | 32) Chorus                 |
| 16) Dotted eighth rest       | 33) Pre-Chorus             |
| 17) Pickup measure/Anacrusis | 34) Instrumental Solo      |

Figure 5.43 From The Inside Out - Joel Houston

F C G

1. A thou-sand times I've failed, still Your mer - cy re-mains. And should I

F C G

stum - ble a - gain, still I'm caught in Your grace. Ev - er last -

A m F C G

- - ing, Your light will shine when all else fades. Ne - ver end -

A m F C G

- - ing, Your glo - ry goes - be - yond all fame.

F C G F C G

2. Your will a -

F C G

bove all else, my pur - pose re - mains the art of

F C G

lo - sing my - self — in bring - ing You praise. Ev - er - last -

Am F C G

- - ing, Your light will shine when all else fades. Ne - ver - end -

Am F C G

- - ing, — Your glo - ry goes be - yond - all fame.

F C Am

In my heart, in my soul, — Lord, I give you con - trol. — Con - sume me from the

G F Am

in - side - out, Lord. Let just - ice and praise — be - come my em - brace, —

G

to - love You from the in - side out. in - side out. Ev - er - last -

Am F C G

- - ing, Your light will shine when all else fades. Ne - ver - end -

Am F C G C F

- ing, — Your glo - ry goes be - yond all fame. And the cry — of my heart — is to bring -

G A m F G F G 2nd time to Coda

- You praise, from the in - side out, Lord, my soul cries out.

F C A m G F A m G D m D.S. al Coda

♩ F C A m

In my heart, in my soul, Lord, I give you con-trol. Con-sume me from the

G F A m

in - side - out, Lord. Let just - ice and praise be - come my em - brace,

C F G A m F G

cry of my heart is to bring You praise, from the in - side out Lord, my soul

F G F G F G F

- cries out, from the in - side out, Lord my soul - cries out, Lord.

**Notes**

<sup>xv</sup> Gustave Reese. *Music in the Middle Ages* (New York: W.W. Norton & Co., Inc., 1940), 64.

<sup>xvi</sup> *Ibid.*, 63.

## CHAPTER VI

### KEYS AND SCALES

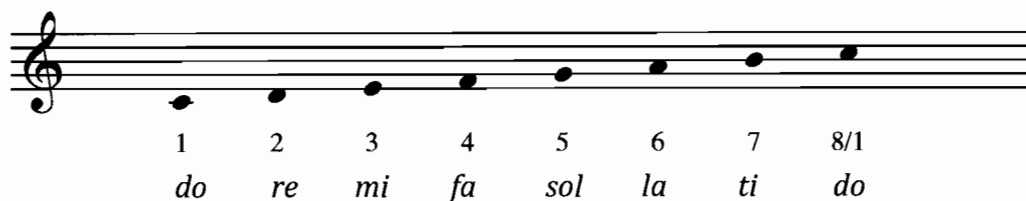
#### Keys & Scales

The use of keys and scales is relevant for nearly any aspect of music making that involves pitch (which is almost all of it), thus it is unfortunate that scales have developed a negative connotation with many aspiring musicians. To many, they are associated with long hours of grueling, seemingly unmusical practice. However, understanding scales is an *essential* part of music theory. Scales are inextricably related to keys they describe, and provide the basis for nearly all of music composition. Scales also create intervals, which are the building blocks of chords, which give music harmonic (chordal) substance. Therefore, in order to grasp chord theory and tackle music composition, one must first confront scale theory.

In Chapter III, we briefly mentioned the chromatic scale. Though the chromatic scale uses all eleven pitches that are available, most songs will not. Songs are written in keys, which utilize a restricted amount (or collection) of pitches. The **key** determines what collection is taken from the chromatic scale. It limits what pitches are to be used in the music's composition and bases them around a single pitch, called **tonic**. This tonic note is also what gives keys their names. For example, if the tonic of a song is C then it is said to be "in the key of C."

A **scale** takes the notes used in a key and lays them out in order (usually depicted in ascending order) spanning a full octave, meaning that most scales have a total of seven *different* notes (the eighth is simply a repetition of the first in the next octave) (Figure 6.1).



**Figure 6.1** The Seven Notes of a C major scale:

- 1—Tonic (“do”)
- 2—Supertonic (“re”)
- 3—Mediant (“mi”)
- 4—Subdominant (“fa”)
- 5—Dominant (“sol”)
- 6—Submediant (“la”)
- 7—Leading Tone (“ti”)
- 8/1—Tonic (“do”)

The 1<sup>st</sup> and 8<sup>th</sup> notes are called the tonic or *do*; they are foundation of the scale and key. As for the six other notes of the scale, the name describes how that note relates to tonic. For example, the supertonic (*re*) is so called because it is above tonic. Likewise, the seventh note of the scale (*ti*) is the leading tone because it “leads to tonic” from below. Play and sing the examples below for a clear understanding of these pitches relation to the tonic (Figure 6.2).

**Figure 6.2** Supertonic & Leading Tone:

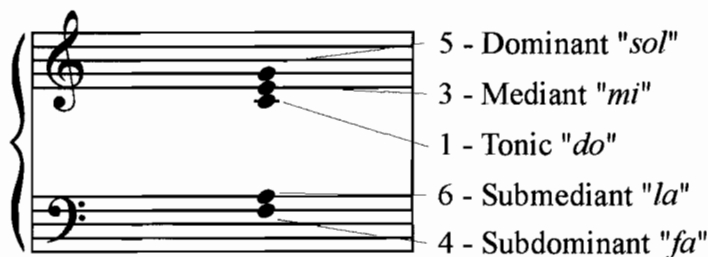
Supertonic → Tonic:

Leading Tone → Tonic:

*re do ti do*

The reason for the other scale names is made a bit clearer if we position the notes of the scale so that the tonic is on a central axis and the other notes are arranged above and below in stacked thirds (thirds are intervals and will be discussed in the next chapter). The below diagram shows notes from a C major scale (Figure 6.3).

**Figure 6.3** Scale Degree Note Names:



Arranged this way, we see that scale degrees 4<sup>^</sup> and 5<sup>^</sup> (*fa* and *sol*) are at the ends of the axis, the position named “dominant.” *Sol* is the dominant while *fa* is the dominant below, hence subdominant. Degrees 3<sup>^</sup> and 4<sup>^</sup> (*mi* and *la*) are given corresponding designations, mediant and submediant, respectively, as they lie midway between the tonic and dominant.

This naming system may appear to be of technical paltriness at first, but these designations become increasingly relevant as you progress further with scale and chord theory. But let us return to the present discussion of scales and keys.

### **The Major Key**

There are two general types of keys used in music and therefore two primary scales associated with them: major and minor. The major scale is used most often in church music probably due to its intrinsically optimistic quality of sound. Minor scales, used less frequently, are often described as sounding sad or introspective.

As stated, any scale, whether major or minor, is merely an orderly arrangement of the pitches used in a key, starting on its tonic, *do*. This arrangement is based on a pattern of whole steps and half steps specific to that scale, giving each scale and key its particular sound. The pattern of whole steps and half steps for a major scale beginning and ending with the root is:

“W” represents a whole step between notes and “H” represents a half step.

W—W—H—W—W—W—H

Thus a major scale starting on the note C would be arranged as such:

W W H W W W H  
C—D—E—F—G—A—B—C

**Figure 6.4** C Major Scale & Key Signature:

T								
A		0	2	3	0	2	0	1
B	3	0	2	3	0	2	0	1
	<i>do</i>	<i>re</i>	<i>mi</i>	<i>fa</i>	<i>sol</i>	<i>la</i>	<i>ti</i>	<i>do</i>

We use the C major scale first, because it has no sharps or flats, only natural notes (Figure 6.4). However, major scales with any other root than C will need to accidentals to adhere to the same pattern of whole steps and half steps. For instance, a scale starting on D with only natural notes would not be a major scale since the pattern of whole steps and half steps is different (Figure 6.5).

W H W W W H W  
D—E—F—G—A—B—C—D

**Figure 6.5** C Major Scale (D to D):

re mi fa sol la ti do re

So to make a D major scale, two sharps need to be added. The F $\sharp$  must be raised to an F $\sharp$  and the C $\sharp$  must be raised to a C $\sharp$  (Figure 6.6).

**Figure 6.6** D Major Scale & Key Signature:

do re mi fa sol la ti do

W W H W W W H  
D—E—F $\sharp$ —G—A—B—C $\sharp$ —D

### **Key Signature**

In the example above of D major, we had to add 2 accidentals (F $\sharp$  and C $\sharp$ ) to create a major scale step pattern starting on D. These two sharps make up the key signature for D major. A **key signature** is the collection of accidentals needed in a particular key to create a major or a minor pitch collection. The key signature is

shown at the beginning of every line of staff, immediately to the right of the clef, to show the key on every line of the song (this is important, as sometimes the key in a song, and thus key signature, may change). The example below shows the beginning of Billy Foote's *You Are My King (Amazing Love)*. The two sharps in the key signature tell us that this song is in the key of D major (Figure 6.7).

**Figure 6.7** You Are My King (Amazing Love) – Billy Foote

D F#                      G2                      Asus                      A

I'm for-giv - en, \_\_\_\_\_ be - cause You were \_\_\_ for - sak - eu.

©1996 worshiptogether.com songs

**Tip: Using Correct Scale Spellings**

In Chapter II, we learned about enharmonic equivalence and though some notes “equal” others (say, G $\flat$  and F $\sharp$ ), getting the correct spelling is crucial for using the right notes in a key. In D major, for example, using G $\flat$  instead of F $\sharp$  would be an incorrect spelling. By using G $\flat$ , the scale would be spelled with two G’s (G $\flat$  and G $\natural$ ) with no F of any kind. Furthermore a key signature could not accommodate the simultaneous accidentals of G $\flat$  and G $\natural$  on the same line (Figure 6.8).

**Figure 6.8** Incorrect Spelling of D Major Scale:

T  
A  
B

0                      2                      4                      0                      2                      0                      2                      3

W W H W W W H  
D—E—G $\flat$ —G—A—B—C $\sharp$ —D

All seven letters of the pitch alphabet must be used. Although, this may seem an insignificant issue at first, such discrepancies cause confusion among musicians.

The use of confusing notation and terminology can make chart reading difficult for musicians who become accustomed to seeing keys spelled the correct way. Therefore, learn how to speak the language correctly. As a church musician who may be in charge of creating charts for the musicians in your band you should set other musicians up for success and avoid needless errors.

Here are 2 rules about scales that will be helpful in ensuring you use the right pitches at the right times:

- 1) A scale must use all 7 of the letters of the musical alphabet, also:
- 2) Scales may use sharps and flats, but none use both at the same time.<sup>11</sup>

These rules have made necessary the use of F $\flat$ , E $\sharp$ , C $\flat$ , and B $\sharp$ . It may be annoying at first to think about E $\sharp$  or F $\flat$  instead of F or E, but there are some cases where these enharmonic equivalents are needed (Figure 6.9, 10).

**Figure 6.9** F $\sharp$  Major Scale & Key Signature:

W W H W W W H  
 F $\sharp$ —G $\sharp$ —A $\sharp$ —B—C $\sharp$ —D $\sharp$ —E $\sharp$ —F $\sharp$

---

<sup>11</sup> In fact, there are some scales that use both, but they are not diatonic, making them very rare in popular styles.

**Figure 6.10** C# Major Scale & Key Signature:

W W H W W W H  
 C#—D#—E#—F#—G#—A#—B#—C#

Below are some uses of the notes C $\flat$  and F $\flat$  (Figure 6.11, 12).

**Figure 6.11** G $\flat$  Major Scale & Key Signature:

W W H W W W H  
 G $\flat$ —A $\flat$ —B $\flat$ —C $\flat$ —D $\flat$ —E $\flat$ —F—G $\flat$

**Figure 6.12** C $\flat$  major & Key Signature:

W W H W W W H  
 C $\flat$ —D $\flat$ —E $\flat$ —F $\flat$ —G $\flat$ —A $\flat$ —B $\flat$ —C $\flat$

**Tip: Learning To Identify Key Signatures**

Determining a key based on its signature alone would require you to write out all the notes in the key and arrange them until you found an order that matched with the whole step/half step configuration for major or minor (which will be discussed later). But depending on the key, a key signature may up to 7 sharps or flats (as with C# major and Cb major, respectively). Furthermore, there are 14 different major keys alone, meaning that most people attempt to memorize the key signatures. Eventually, musicians do memorize them all, but in the meantime there are a few shortcuts that make key signature identification easier.

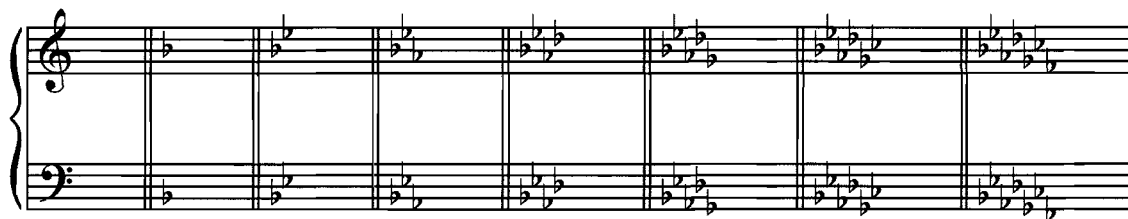
**Sharp Keys** – These may be learned through a helpful fact: The last sharp in the sequence is the leading tone of the key, with the exception of C major (where there are no accidentals). Thus in G major, the F# leads to the tonic G, and the next example, with 2 sharps, the C# leads to D, and so on (Figure 6.13).

**Figure 6.13** Sharp Key Signatures:

C major:    G:        D:        A:        E:        B:        F#:        C#:

**Flat Keys** – The trick for learning flat keys is a little different: The with the exception of C major and F major (where there is only one flat), the second to last flat in the sequence is the key. Thus, in the 3<sup>rd</sup> example, the second-to-last flat is Bb, which is the key, and in the next one, Eb, and so on (Figure 6.14).



**Figure 6.14** Flat Key Signatures:C major:    F:        B $\flat$ :    E $\flat$ :        A $\flat$ :        D $\flat$ :        G $\flat$ :        C $\flat$ :

### Double Sharps and Flats

There are special notational symbols that allow one to sharpen or flatten a note twice. The double sharp ( $\sharp\sharp$ ) raises a note by two half steps, thus A $\sharp\sharp$  or “A double sharp” is enharmonically equivalent to B. Double flats ( $\flat\flat$ ) lower a note by two half steps, meaning that A $\flat\flat$  (“A double flat”) is enharmonically equivalent to G. However, this notation only occurs in very esoteric keys, like D $\sharp$  major, E $\sharp$  major, G $\sharp$  major, A $\sharp$  major, and B $\sharp$  major, and F $\flat$  major. Because these keys are never used and can always be reinterpreted as their enharmonic equivalents, they will not be discussed in depth in this book. Double sharps and flats are also used for the spelling of some rather uncommon intervals, which will not be discussed either as they are rarely, if ever, ever encountered in popular music.

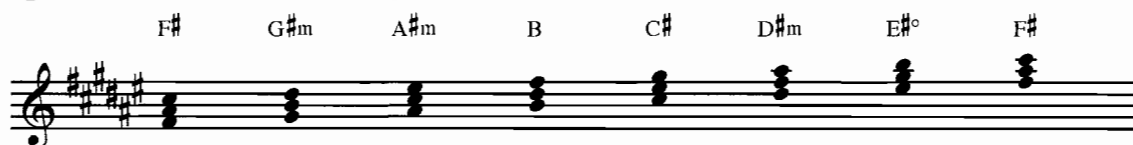
### *Tip: Which Key to Use?*

Worship leaders are often placed in the role of arranging and distributing music. It then becomes the responsibility of such an individual to make important decisions, like what key to play a song in. Though every key has its enharmonically equivalent key, oftentimes worship leaders will chose to notate a given song in the first key that comes to mind without giving a thought to the other possible key spelling. Yet, in an earlier discussion, we found that certain interpretive difficulties arise from having to read music in enigmatic keys that require confusing notation, like double sharps and flats. Potential problems like these may be avoided simply

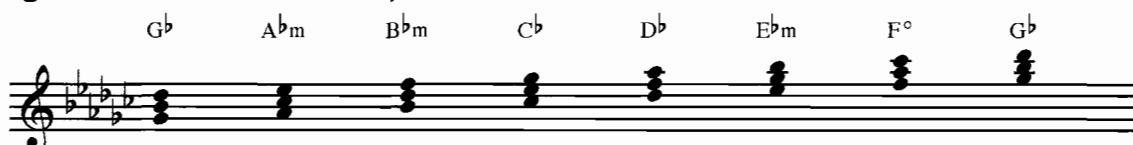
by using an enharmonically equivalent key. For instance, use  $A\flat$  major instead of  $G\sharp$  major, because the pitch content of  $A\flat$  major has only 4 flats, while  $G\sharp$  major has 6 sharps and 1 double sharp. In such cases, the decision seems obvious. It is apparent that being conscientious about what how you notate your music is important. But what about more equally related enharmonic keys?

The keys of  $G\flat$  major and  $F\sharp$  major both have 6 accidentals in their key signatures. Although either key has equal number of sharps or flats, there may be more of a difference than is at first perceived. Consider the chords that occur in either key (Figure 6.15, 16).

**Figure 6.15** Chords in  $F\sharp$  Major:



**Figure 6.16** Chords in  $G\flat$  Major:



If you are a guitarist, you might be staring at the 6 sharps  $F\sharp$  major thinking, “I like sharps.  $F\sharp$  major just looks better to me.” I would agree with you. Musicians who play stringed instruments tend to prefer keys with sharps rather than keys with flats. So, as a guitarist, I would much rather play in the key of  $F\sharp$  major. The reason has to do with the way stringed instruments are tuned. The guitar’s strings are tuned to the notes E, A, D, G, and B. Each one of these keys is a key that uses sharps. Therefore, the music that is idiomatic for guitar uses open strings and tends to be in these keys. Hence, guitarists generally prefer sharps. Knowing your

musicians well enough to understand they're preferences can be big aid in trying to make playing together as efficient as possible and when in doubt, choose the key with the fewest accidentals.

### Solfège for Major

Being able to conceptualize theory in words is only half the battle; hearing and recognizing these patterns in the music is as important or perhaps more important for using theory in a practical way. To hear and recognize the notes of a scale as they are played is an important skill to develop and can be helpful for singing harmony, transcription, among other things.

A common method for ear training is solfège, which was briefly introduced at the beginning of this chapter. *Solfège* is a method for learning to sing and aurally identify notes through use of special syllables. Though this method has been around for over 1000 years, you may recognize them from the Broadway musical, *The Sound of Music*.

Taking the major scale, we assign these names to each tone (Figure 6.17).

1 2 3 4 5 6 7 8/1  
Do—Re—Mi—Fa—Sol—La—Ti—Do

**Figure 6.17** Solfège in Major:

The figure shows a musical staff with a treble clef and a key signature of one sharp (F#). The notes of the major scale are written as quarter notes: C4, D4, E4, F#4, G4, A4, B4, and C5. Below the staff, the solfège syllables are written: do, re, mi, fa, sol, la, ti, do. Underneath the syllables, fingerings are indicated: 3 for do, 0 for re, 2 for mi, 3 for fa, 0 for sol, 2 for la, 0 for ti, and 1 for do. To the left of the staff, the letters T, A, and B are stacked vertically, corresponding to the top, middle, and bottom lines of the staff.

C D E F G A B C  
 Do—Re—Mi—Fa—Sol—La—Ti—Do

This allows us to be able sing a melody with the same names in any key, thus the first line of *Joy to the World* would be thus (Figure 6.18).

**Figure 6.18** Joy To The World – George Frederic Handel & Isaac Watts

Joy to the world, the Lord is come. Let earth re-ceive her king! — Let  
 do ti la sol fa mi re do sol la la ti ti do

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### The Minor Key

The other type of key is minor, and its corresponding scale, the natural minor is based on a different series of whole steps and half steps than major. For minor, the pattern is:

W—H—W—W—H—W—W

This pattern will create a whole new set of keys. Thus a minor scale starting on C would be as such (Figure 6.19).

**Figure 6.19** C minor scale:

do re me fa sol le te do

W H W W H W W  
 C—D—E $\flat$ —F—G—A $\flat$ —B $\flat$ —C

Another way to conceptualize the structure of a minor scale is in its relation to major. Notice that the C minor scale differs from the C major scale in that it has 3 flatted notes (E $\flat$ , A $\flat$ , and B $\flat$ ) on the 3 $^{\text{rd}}$ , 6 $^{\text{th}}$ , and 7 $^{\text{th}}$  scale degrees respectively. Or in other words, a minor scale is major with a  $\flat 3$ ,  $\flat 6$ , and  $\flat 7$  (Figure 6.20).

**Figure 6.20** C Major vs. C Minor:

C Major: C Minor:

$\flat 3$                        $\flat 6$      $\flat 7$

### Other Minor Scale Forms

You see that the minor scale is, from a certain perspective, an alteration of the major scale. So, going with this same logic, there are a few other minor scale patterns that are different alterations of major. These are the harmonic minor and the melodic minor. The difference here is that these alterations do not create unique minor keys, but are just different versions of the minor key.

**Harmonic Minor** – This is the same as a natural minor scale, but employs the leading tone, or *ti*, of major. Therefore, since natural minor contains a  $\flat 3$ ,  $\flat 6$ , and  $\flat 7$ , with respect to major, the harmonic minor scale may easily be thought of as having only a  $\flat 3$  and  $\flat 6$ . Thus, C harmonic minor scale contains only the accidentals E $\flat$  and

A $\flat$ . The harmonic minor has applications that will be discussed in depth in Chapter XIII (Figure 6.21).

**Figure 6.21** C Harmonic Minor Scale:

do      re      me      fa      sol      le      ti      do

W H W W H W W  
 C—D—E $\flat$ —F—G—A $\flat$ —B $\flat$ —C

### Melodic Minor

The melodic minor has two alterations that differ from the natural minor scale by using both the raised 6<sup>^</sup> (*la*) and the leading tone, 7<sup>^</sup> (*ti*) from major. This leaves only  $\flat 3$  from natural minor (Figure 6.22).

**Figure 6.22** C Melodic Minor Scale:

do      re      me      fa      sol      la      ti      do

C—D—E $\flat$ —F—G—A—B—C  
 W H W W W W H

Familiarize yourself with these minor scale forms now, as they will become more relevant as we progress through theory, especially in Chapter 10 when we discuss chromaticism through modal borrowing. For now, spend some time becoming with the sound of minor and its difference to major through solfège.

### ***Solfège for Minor***

When singing minor melodies using solfège, we must alter the syllables of the major scale to reflect for the differences in the scale pattern. Flatted pitches will change their syllables to an “-e”. *Mi* would change to *me*, *la* to *le*, and *ti* to *te*. So all the forms of minor would be sung as such:

Natural Minor (♭3, ♭6, ♭7):

“do re me fa sol le te do”

Harmonic Minor (♭3, ♭6):

“do re me fa sol le ti do”

Melodic Minor (♭3):

“do re me fa sol la ti do”

For example, the carol, *O Come, O Come Emmanuel*, which is in a minor key uses the natural minor collection, would be pronounced with these syllables (Figure 6.23).

**Figure 6.23** O Come, O Come Emmanuel - Henry Coffin, John Neale & Thomas Helmore

O come, O come, Emmanuel, and  
do me sol sol sol fa le sol fa me fa

ran some cap tive Is ra el that  
sol me do me fa re do te do

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### *Chromaticism in Solfège*

Oftentimes, in a major or minor key, you will come across a note that isn't naturally part of the major or minor key. In such cases, you must also alter the solfège to reflect this change (it is this consistency that makes solfège so effective). Generally, flatted notes receive the vowel “-e” while sharpened syllables get the altered vowel “-i”. The only exception is with the case of the rarely lowered supertonic ( $\flat 2$ ). In this case, *re* already has the syllable “-e”, so it is changed to *ra*. As a reminder, solfège syllables are relative to tonic of the key, so don't always associate C with *do* or  $D\flat$  with *ra*. A chromatic scale of solfège beginning on C would be (Figure 6.24):

**Figure 6.24** Chromatic Scale:

do di/ra re ri/me mi fa fi/se sol si/le la li/te ti do



C—C#/D $\flat$ —D—D#/E $\flat$ —E—F—F#/G $\flat$ —G—G#/A $\flat$ —A—A#/B $\flat$ —B—C

One of the most common alterations of the scale you will find is the #4 (*fi*) in major keys and is especially common in hymns. Take the hymn *It is Well* for example, the solfège accommodates the chromatic note on the word “billows” (Figure 6.25).

**Figure 6.25** It Is Well – Phillip P. Bliss

When peace, liek a ri - ver, at - ten - deth my way, when  
sol sol fa mi mi re mi fa la sol fa mi sol

sor - rows like sea bil - lows - roll, what  
do ti la la sol fi sol sol

The figure shows two staves of music in 4/4 time. The first staff contains the melody for the first line of the hymn, with lyrics underneath. The second staff continues the melody for the second line, also with lyrics underneath. A sharp sign (#) is placed above the note for 'fi' (sol) in the second staff, indicating a chromatic alteration from the natural form of the scale.

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## Key Relations

### Parallel Keys

Keys that share the same tonic pitch, yet contain a different sequence of whole and half steps are said to be *parallel keys*. For example, C major and C minor do not have the same key signatures, but they do share the same tonic, making their scales run parallel to each other. E minor is the parallel minor of E major and vice versa (Figure 6.26).

**Figure 6.26** Parallel Keys:

Parallel Keys, C major:

C minor:

The figure shows two staves of music in C major and C minor. The first staff shows the C major scale (C-D-E-F-G-A-B-C) and the second staff shows the C minor scale (C-D-E-F-G-A-Bb-C). Both scales are written in a single line of music, demonstrating their parallel relationship.

C—D—E—F—G—A—B—C  
 C—D—E $\flat$ —F—G—A $\flat$ —B $\flat$ —C

A common occurrence in music is for a piece to modulate from a major key to its parallel minor. An example of this would be the song *Again I Say Rejoice* by Israel Houghton and Aaron Lindsay. In the bridge section of the tune, during the words, “*O that men would praise His name, would praise His name to the ends of the earth*”, there is a clear modulation from E major to E minor.

### Relative Keys

Another way keys relate is through similar pitch content. If you take the keys of C major and A minor, neither has any sharps or flats. Thus they are said to have the same key signature. Major and minor keys that share the same key signature are related. A minor is the “relative minor” of C major and C major is the “relative major” of A minor. Notice that A is found on the submediant A, or *la*, of C major scale. One can easily find the relative minor of any key from this point in the major scale. Finding relative major is just as simple, simply go to the mediant (*mi*) of the minor scale. C in this case of A minor.

**Figure 6.27** Relative Keys:

Relative Keys, C Major:

A Minor:



R 2 3 4 5 6 7 R

C—D—E—F—G—A—B—C

A—B—C—D—E—F—G—A

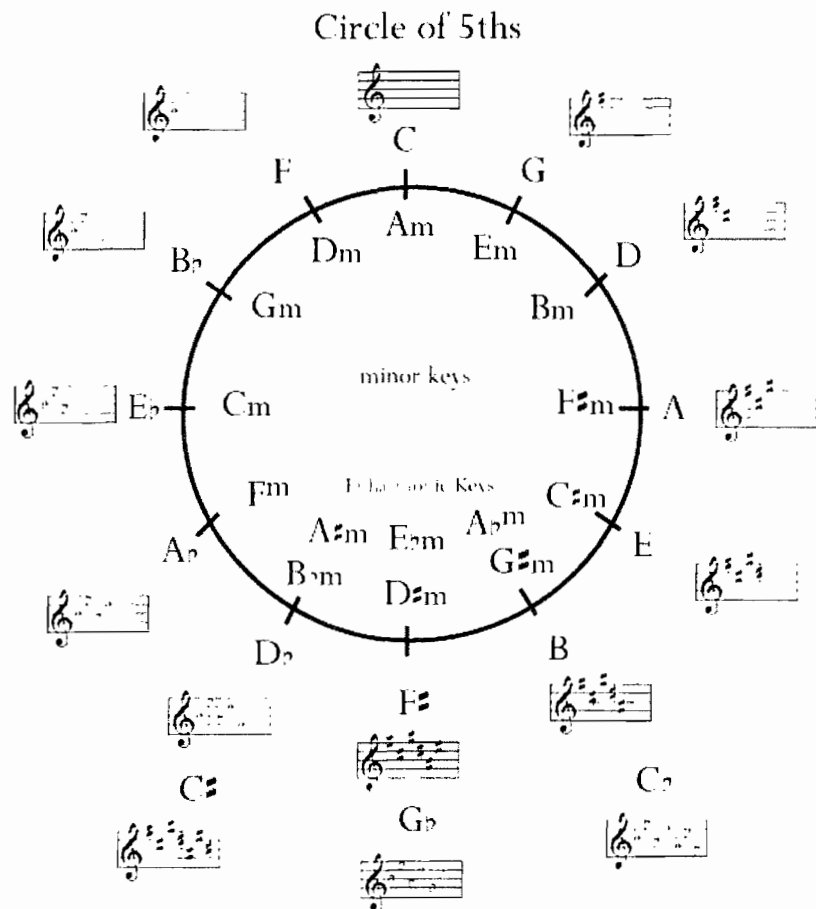
R 2 3 4 5 6 7 R

## The Cycle of Fifths

We have already seen evidence of the last key relation we will discuss. Earlier in the chapter, we saw the progression of key signatures on the staff from keys with no accidentals (C major and its relative A minor) up to keys with 7 accidentals in their signatures. This progression of keys carried a logical pattern, where the next key was five notes away each time. For example, the distance between the 1<sup>st</sup> key (C major) and the 2<sup>nd</sup> (G major) is five notes: C—D—E—F—G. This pattern is most clearly represented by the cycle of fifths. The *cycle of fifths* is a graphic depiction of keys, progressing by fifth, where major and minor keys with related pitch content (or similar key signature) are positioned adjacently. In other words, the cycle of fifths is a way of organizing keys or scales with regard to the number of accidentals they have. According to the cycle of fifths, the key of C would be more closely related to the key of G (having only 1 sharp) than it is to C# major (having 7), even though C# major is nearer to C major in terms of pitch order. As it turns out, the keys that are farthest apart in terms of pitch order are most similarly related with regard to key signature. G major/E minor is five notes away from C major/A minor, so it is said to be a 5<sup>th</sup> away, making G major/E minor is the closest key to it in the circle (moving clockwise). The next key in the cycle would be D major/B minor, because they have 2 sharps. The cycle continues around the circle to its furthest position (6 o'clock) at C# major, which has 7 sharps, the most possible.

Moving counter clockwise, the cycle passes through all the keys with flats. It begins with C major/A minor to move one position over (11 o'clock) and ending with B major/G# minor or A $\flat$  minor. This direction, we go down five notes from C major/A minor, through F major/D minor, B $\flat$  major/G minor, E $\flat$  major/C minor, etc. (Figure 6.28).

**Figure 6.28** Cycle of Fifths/Circle of Fifths:<sup>xvii</sup>



The order for the placement of flats and sharps

♯	F	C	G	D	A	E	B
♭	B	E	A	D	G	C	F

The cycle of fifths is more than just a handy aid for remembering what keys have what sharps or flats, but it shows how the keys are related. According to the cycle of fifths, the key of E is closely related to A (a difference of one sharp). This means that there is only one note different between the two keys. This becomes more important later on, especially as we discuss modulation techniques at the end of the book. For now, remember that keys have relations where some are closely related because they share a common tonic pitch (parallel keys) and others are

related because they share common pitch content (relative keys & keys related by fifth).

### **Practice Exercises**

In the practice exercises below, notate the key signature and scale both on the staff and in the tablature – either major or minor, as indicated (Figure 6.29 – 6.35).

**Figure 6.29** F Major:

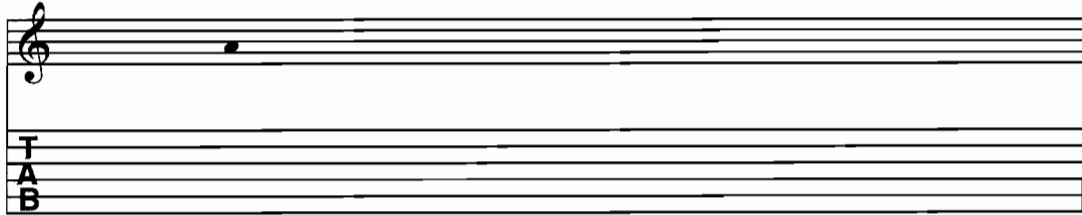
Figure 6.29 shows the notation for F Major. The top staff is a treble clef with a single note on the first line (F4). The bottom staff is a guitar tablature with the letters T, A, and B stacked vertically on the first line, indicating the fret numbers for the strings.

**Figure 6.30** G Minor:

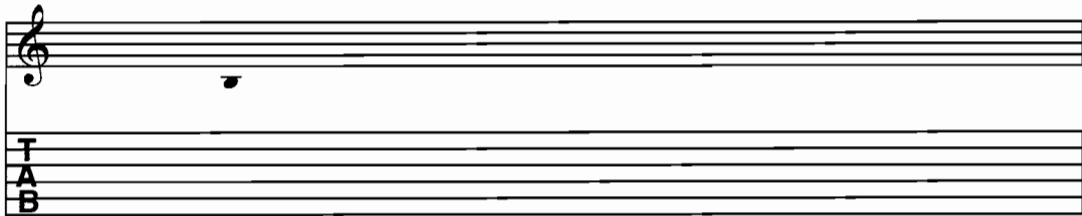
Figure 6.30 shows the notation for G Minor. The top staff is a treble clef with a single note on the second line (G4). The bottom staff is a guitar tablature with the letters T, A, and B stacked vertically on the first line, indicating the fret numbers for the strings.

**Figure 6.31** E $\flat$  Major:

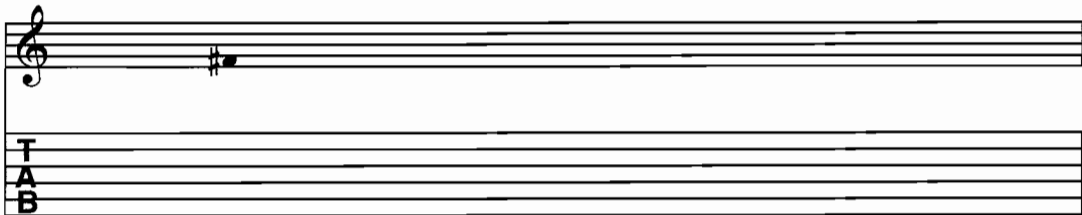
Figure 6.31 shows the notation for E $\flat$  Major. The top staff is a treble clef with a single note on the second line (E $\flat$ 4). The bottom staff is a guitar tablature with the letters T, A, and B stacked vertically on the first line, indicating the fret numbers for the strings.

**Figure 6.32** A Major:

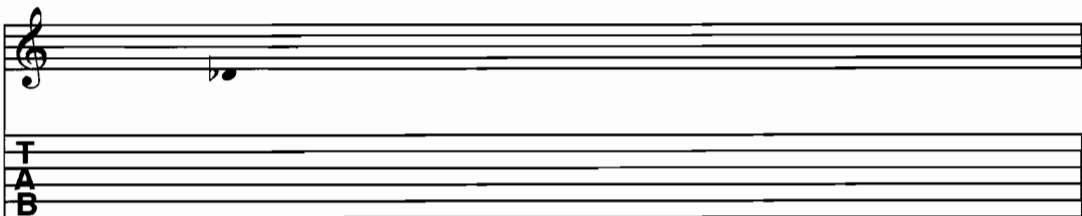
Musical notation for A Major. The top staff is a treble clef with a single quarter note on the second line (A4). Below it are three staves labeled T, A, and B, representing guitar strings.

**Figure 6.33** B Major:

Musical notation for B Major. The top staff is a treble clef with a single quarter note on the third space (B4). Below it are three staves labeled T, A, and B, representing guitar strings.

**Figure 6.34** F# Major:

Musical notation for F# Major. The top staff is a treble clef with a single quarter note on the second space (F#4). Below it are three staves labeled T, A, and B, representing guitar strings.

**Figure 6.35** D $\flat$  Major:

Musical notation for D $\flat$  Major. The top staff is a treble clef with a single quarter note on the second space (D $\flat$ 4). Below it are three staves labeled T, A, and B, representing guitar strings.

In the following exercises, identify the key of the song excerpt and then write the solfège for the given melody under the example (Figure 6.36 – 6.42).

**Figure 6.36** Blessed Be Your Name – Matt & Beth Redman

B                          F#                          G#m                          E



Bless - ed \_\_\_ be \_\_\_ your \_\_\_ name \_\_\_ in the land that \_\_\_ is \_\_\_ plen - ti - ful, \_\_\_ where Your

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**Figure 6.37** How Great Is Our God – Chris Tomlin, Ed Cash, & Jesse Reeves

C    Am7




The splen - dor or \_\_\_ the King, \_\_\_ robed in ma - jes - ty. \_\_\_

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**Figure 6.38** And Can it Be – Charles Wesley & Thomas Campbell

G                          C                          D                          G




Thou, \_\_\_ my God \_\_\_ shouldst die \_\_\_ for me? \_\_\_

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**Figure 6.39** Mighty To Save – Reuben Morgan & Ben Fielding

A                          E                          D                          A                          F#m                          E



Savior, He can move the mountains. My God is mighty to save, \_\_\_ He is mighty to save. \_\_\_ For-

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**Figure 6.40** How Deep The Father's Love For Us – Stuart Townend

D                      Em D/F#G                      D/F#                      D/A A

How Deep the Fa-ther's love for us, how vast be-yond al mea - that

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**Figure 6.41** O The Deep, Deep Love Of Jesus – Samuel Francis & Thomas Williams

Em            Em-G            B            C            Am6            B            Em

O the ——— deep, deep love of ——— Je - sus,

G            D.F#            C E B.D#            Em            Am            B            Em

vast, un - meas - ured, bound - less free,

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**Figure 6.42** Crown Him With Many Crowns – Matthew Bridges, Godfrey Thring, & George Elvey

D                      Bm                      G                      D F# D A7E D                      A

Crown Him with ma - ny crowns, the Lamb up - on His throne. Hark!

D A C# Bm D E ED A C# E7B A D E E7 A A G

how the heav'n - ly an - them drowns all mu - sic but its own. A

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## Notes

xvii Theory, "Key Signatures and the Circle of Fifths, ImprovHQ  
<http://www.improvhq.com/?id=keysignatures> (accessed August 10, 2010).



## CHAPTER VII

## INTERVALS

Simply put, an *interval* is the space formed by the distance between two notes when they are sounded together, either in succession (melodically) or at the same time (harmonically) (Figure 7.1).

**Figure 7.1** Intervals:

Melodic:

Harmonic:



Intervals provide the basic structure for music on a note-by-note level. In fact, the intervals between the notes are as important to the way music sounds as the notes themselves. They affect whether a given combination of notes will sound good or bad. Certain ones can even make the “right notes,” or those in the key, sound wrong and “wrong notes,” those not in the key, sound right. In this chapter, these intervals are categorized, analyzed, and discussed in light of practical scenarios so that a musician can harness their power over the music.

All intervals are designated by their numeric value, which is the number of notes from one note to the next, and quality, the type of interval that is created by this distance.

### **Numeric Value**

We assign a numeric value to any interval simply by counting how many notes it takes to get from one to another. At this point, it is not important whether

we use a major or minor scale, we simply count note names (pitch classes). For instance, to count the numeric interval from C to any note above it, we use an ascending scale starting on C (and counting C as 1). Each pitch class above C then has a number representing the numeric interval between C and it (Figure 7.2).

**Figure 7.2** Intervals, unison through 13<sup>th</sup>:

The figure shows a musical staff with a treble clef and a scale of notes: C, D, E, F, G, A, B, C, D, E, F, G, A. Below the staff is a fretboard diagram with three strings labeled T, A, and B. The fret numbers for each note are: C (0), D (2), E (3), F (3), G (3), A (2), B (0), C (1), D (3), E (0), F (1), G (3), A (5). Below the fretboard are the interval numbers 1 through 13 and their corresponding solfège names: 1 (do), 2 (re), 3 (mi), 4 (fa), 5 (sol), 6 (la), 7 (ti), 8 (do), 9 (re), 10 (mi), 11 (fa), 12 (sol), 13 (la).

T															
A		0	2	3		0	2	0	1	3		0	1	3	5
B	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	8														
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>11</b>	<b>12</b>	<b>13</b>		
	<i>do</i>	<i>re</i>	<i>mi</i>	<i>fa</i>	<i>sol</i>	<i>la</i>	<i>ti</i>	<i>do</i>	<i>re</i>	<i>mi</i>	<i>fa</i>	<i>sol</i>	<i>la</i>		

Notice that the scale does not stop at the octave, but continues to the 13<sup>th</sup> note above C. Though pitch classes repeat themselves in the next register, we still identify intervals that are bigger than an octave. This becomes important later on as we use these intervals to discuss complex harmonies like 11<sup>th</sup> and 13<sup>th</sup> chords.

Take, for example, the second interval created in the scale above, C—D. D is the second note, so we say the interval from C to D is a 2<sup>nd</sup>. Similarly, E would be a 3<sup>rd</sup> above C, and the E an octave higher and would be a 10<sup>th</sup>. The numeric designation follows suit with every interval, except for intervals of the same pitch class. These are termed unison and octave, instead of 1<sup>st</sup> or 8<sup>th</sup>, depending on whether the notes are in the same register. Basically, if two notes of the same name share the same register, they are a unison (1), if they are in different registers, the interval is called an octave (8).

## Interval Inversion

As we've just seen, numeric distance is specific to the distance between two given notes in the scale, meaning we measure the interval from the *lower* of two given notes. As result, for every set of two pitches, there are two possible intervals depending on which is lower. For instance, between the notes C and E, possible intervals could be a 3<sup>rd</sup> (if C were lower, Figure 6.3) or a 6<sup>th</sup> (if E were lower, Figure 6.4).

**Figure 7.3** 3<sup>rd</sup> (C—E):

Figure 7.3 illustrates a 3<sup>rd</sup> interval (C—E) on a staff and guitar fretboard. The staff shows the notes C and E. The guitar fretboard shows the fret numbers for the strings T, A, and B. The fret numbers are: T (1, 2, 3), A (2, 3), and B (3). The notes are labeled as E (1), C (do), and mi (3).

T	1	2	3
A	2	3	
B	3		
	E	C	mi
	1	do	3

**Figure 7.4** Inverted 3<sup>rd</sup> is 6<sup>th</sup> (E—C):

Figure 7.4 illustrates an inverted 3<sup>rd</sup> interval (E—C) on a staff and guitar fretboard. The staff shows the notes E and C. The guitar fretboard shows the fret numbers for the strings T, A, and B. The fret numbers are: T (1, 2, 3), A (2, 3), and B (3). The notes are labeled as C (E), mi (1), 2, 3, 4, 5, and do (6).

T	1	2	3	4	5	6
A	2	3				
B	3					
	C	E	mi	2	3	4
			1			do

When the order of notes in a given interval is reversed so that the lower note changes positions with the higher note, this is called *inversion*. It is very important to understand that two given notes can create two different intervals depending on

their order, yet acknowledge that the fact that they share the same pitch content makes them related through inversion.

Throughout this chapter, intervals related by inversion will be introduced together since, in sharing similar pitch content, they tend to share similar musical applications. Though intervals provide the basis for chord theory (begun in the next chapter), we will take advantage of the present opportunity to discuss how both instrumental and vocal musicians utilize these specific intervals to make them an immediate feature of the musical arrangement. Rather than simply being the background as the ingredients that make up the chords we hear in a song, we will see how musicians exploit intervals themselves and bring them to the musical foreground to create dynamic song arrangements.

### **Interval Quality**

Quality is the other factor that determines the type of interval. Quality is affected by the size of a specific interval and is related to the number of whole steps or half steps that make up a given interval. A variation of one or two half steps on the size of an interval will affect the interval's quality. Take the interval of a 2<sup>nd</sup> for example. The distance from C—D is a 2<sup>nd</sup>, regardless of any sharps or flats, because D is the second note in a scale starting on C. This means that C—D<sup>b</sup> is also a 2<sup>nd</sup>, because D is the next note, even though they are two different interval sizes. C—D is a half step larger than C—D<sup>b</sup>. They are both seconds, but of different qualities. C—D, as the larger interval, is called a major 2<sup>nd</sup> (M2). C—D<sup>b</sup> is one half step smaller, but is called a minor 2<sup>nd</sup> (m2).<sup>11</sup> There are in fact 5 different interval qualities: perfect, major, minor, augmented, and diminished.

---

<sup>11</sup> A whole step is the same as a major 2<sup>nd</sup> and a half step is the same as a minor 2<sup>nd</sup>. Thus, W = M2, H = m2.

## Perfect Intervals

There are four essential types of perfect intervals, the perfect unison, 4<sup>th</sup>, 5<sup>th</sup>, and octave (8<sup>ve</sup>). There is a long history explaining why they were given the name “perfect,” but part of the reason lies in the very open, seemingly crystalline, sound these intervals create when they are sounded together. In major or minor scales, the tonic note paired with the tonic, fourth, fifth, or octave of the scale creates a perfect interval. A “P” before the interval number is used to indicate these intervals. Above the octave it is also possible to have perfect intervals. The P11 and P12 are those immediately above the octave. Though the 11<sup>th</sup> is specified in some more complex chords, colloquially, we reduce compound intervals to their equivalents within an octave (P4<sup>th</sup> and P5<sup>th</sup>) for the sake of simplicity (Figure 7.5).

**Figure 7.5** Perfect Intervals On C:

Interval	T	A	B
P1			8
P4		3	3
P5		0	3
P8	1	1	3
P11 (P4)			3
P12 (P5)			3

**P1**      **P4**      **P5**      **P8**      **P11 (P4)**   **P12 (P5)**  
*do*      *fa*      *sol*      *do*      *fa*      *sol*

**Unisons** – Though “interval” is probably not the most accurate way to describe this sonority, nonetheless, intervals of the unison are created by two notes of the same pitch sounding together. Unisons are especially noticeable in light of all other intervals, which create harmony. Take any vocal section from two solo singers to a full choir there are times when singers may need to sing “in unison” as opposed to “in harmony” in order to create necessary contrast in a vocal arrangement of a song. The example below shows a unison with the tonic of the C major scale, *do* (Figure 7.6).

**Figure 7.6** Perfect Unison (P1):

C 1  
do

**Octaves** – Like unisons, octaves are made up notes of the same pitch class, but the notes may occur in different registers (Figure 7.7).

**Figure 7.7** Perfect 8<sup>ve</sup> (P8):

C 1 C 8  
do do

On a chord chart, octaves may be designated with “8” next to the root name (Figure 7.8).

**Figure 7.8** Chromatic Octaves (G—G):

G8 G#8 A8 A#8 B8 C8 C#8 D8 D#8 E8 F8 F#8 G8

T  
A  
B

8<sup>ve</sup>: G G# A A# B C C# D D# E F F# G  
 Root: G G# A A# B C C# D D# E F F# G

These intervals are especially apparent when multiple instruments in a given ensemble converge to play a given melodic line. A very common arranging technique, effectively creating an exciting moment in a song is to direct each instrument (e.g. piano, guitar, bass) to play the same melodic line in its own register. A single line melody can draw a listener's attention, often more powerfully than a chord progression, making the effect of these intervals rather striking.

For good examples of this technique, listen to the music of Israel Houghton. Octaves and unisons form a key part of the song, *Come In From The Outside*, where full chords are played in only a few key places. Here the absence of any full chord is indicated by "N.C." (no chord) The musical arrangement is reduced to a single melodic line doubled by the keyboards, bass, guitars, and horns (Figure 7.9).

**Figure 7.9** Come In From The Outside – Israel Houghton & Meleasa Houghton

N.C.

<b>T</b>										
<b>A</b>	5	5	7	8	8	10	10	10	12	12
<b>B</b>	3	5	6	6	6	8	8	8	10	10

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**Fifths** – Moving up from the *do*, we reach the fifth note of the scale, *sol*. In major and minor keys, this is a perfect fifth (P5) (Figure 7.10).

**Figure 7.10** Perfect Fifth (P5):

**G**      **1**                      **5**  
 C      do                                      sol

Another common occurrence is to play only the root of a chord and harmonize it with a fifth above it (the root and 5<sup>th</sup> of a chord). When you play a chord progression with only the interval of a 5<sup>th</sup> it creates “power chords”, a sound common to rock music. These are notated with a “5” next to the root name (Figure 7.11).

**Figure 7.11** Chromatic Fifths (G—G):

G5   G#5   A5   A#5   B5   C5   C#5   D5   D#5   E5   F5   F#5   G5

5<sup>th</sup>:    D   D#   E   E#   F#   G   G#   A   A#   B   C   C#   D  
 Root: G   G#   A   A#   B   C   C#   D   D#   E   F   F#   G

Israel Houghton’s *You Are Good* makes use of power chords during the bridge section of the song. The tab below shows power chords that are made up of both fifths and octaves. This amounts to a chord made from the root, fifth above, and the root above that (R—5—R) (Figure 7.12, 13) .



**Figure 7.12** A5 (A Power Chord):

**Figure 7.13** You Are Good – Israel Houghton

N.C. C5      B5      E5      G5      A5      N.C.      E5      D5      A C#

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Though perfect intervals are used in a musical foreground by guitars and other instruments, vocalists tend to avoid them when singing harmony. Attempt to sing a harmony in parallel fifths above the melody of *How Great Is Our God* (Figure 7.14).

**Figure 7.14** How Great Is Our God – Chris Tomlin, Jesse Reeves, & Ed Cash

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You will probably find that this doesn't create the sound that most vocalists would find appealing when attempting to harmonize a part. Though fifths and

fourths may make for some interesting vocal harmonies, most people prefer the richer sound of major and minor intervals (to be discussed later).

**Fourths** – Similarly, perfect fourths (P4) are intervals that are found naturally on the 4<sup>th</sup> scale degree (*fa*) up from the tonic (*do*) in both major and minor scales (Figure 7.15).

**Figure 7.15** Perfect Fourth (P4):

The figure shows a musical staff with a treble clef. The first measure contains two notes: C4 (middle C) and F4 (one octave above middle C). A double bar line follows. The second measure contains a sequence of notes: C4, D4, E4, F4, G4, A4, B4, C5. A line connects the C4 and F4 notes. Below the staff, the fretboard is shown with strings T, A, B and frets 3, 0, 2, 3, 0, 2, 0, 1. The notes are labeled F, C, and fa.

The P4 is the defining interval of the commonly used “sus4” chord. It’s “suspended” sound is due to its dissonance (a concept to be addressed later in the chapter), which resolves best to the 3<sup>rd</sup> note of the scale (*fa* resolves to *mi*) (Figure 7.16).

**Figure 7.16** Perfect 4<sup>th</sup> Dissonance Resolution:

The figure shows a musical staff with a treble clef. The first measure contains two notes: C4 and F4. A line connects them. The second measure contains two notes: C4 and E4. A line connects them. Below the staff, the fretboard is shown with strings T, A, B and frets 3, 2. The notes are labeled fa and mi.

Though this interval is found all throughout music – it is disguised amongst scales and chords - it usually enters the musical foreground in the form of sus4 chords, as in the chorus of *Hosanna (Praise Is Rising)* by Paul Baloche and Brenton Brown (Figure 7.17).

**Figure 7.17** Hosanna (Praise Is Rising) – Paul Baloche & Brenton Brown

D                      G sus4                      G                      Em7                      C2

Ho - san - - - na,                      Ho - san - - - na, -

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The diagram below shows the P4 interval of each sus4 chord in the chromatic scale (Figure 7.18).

**Figure 7.18** Chromatic Fourths (D—D):

D sus4 D# sus4 E sus4 F# sus4 F# sus4 G sus4 G# sus4 A sus4 A# sus4 B sus4 C sus4 C# sus4 D sus4

	5	6	7	8	9	5	6	7	8	9	10	11	12
T													
A													
B													

4<sup>th</sup>: G G# A A# B C C# D D# E F F# G  
 Root: D D# E E# F# G G# A A# B C C# D

### Major & Minor Intervals

While perfect intervals govern unisons, fourths, fifths, and octaves, in both major and minor scales, the major and minor intervals govern seconds, thirds, sixths, and sevenths as well as their octave equivalent ninths, tenths, and

thirteenthths. Earlier, we compared the intervals C—D and C—D $\flat$  and found that while they were both seconds, they had different qualities, major and minor, respectively.

Examining the interval content of major and minor scales helps to determine the non-perfect intervals larger than a 2<sup>nd</sup>. Both major and minor scales begin with a perfect unison (P1) and a major 2<sup>nd</sup> (m2), but the following major and minor intervals are different according to their respective major or minor scale. For example, a C major scale contains E, A, and B on the 3<sup>rd</sup>, 6<sup>th</sup>, and 7<sup>th</sup> scale degrees. Thus the intervals created above tonic are a major 3<sup>rd</sup> (M3), major 6<sup>th</sup> (M6), and major 7<sup>th</sup> (M7), respectively (Figure 7.19).

**Figure 7.19** Major Scale On C:

T													
A	0	2	3	0	2	0	1	3	0	1	3	5	
B	3	3	3	3	3	3	3	3	3	3	3	3	

**P1 M2 M3 P4 P5 M6 M7 P8 M9 M10 P11 P12 M13**  
*do re mi fa sol la ti do re mi fa sol la*

We already know that the 3<sup>rd</sup>, 6<sup>th</sup>, and 7<sup>th</sup>, are flatted in minor, so likewise, the intervals created by E $\flat$ , A $\flat$ , and B $\flat$ , are the minor 3<sup>rd</sup> (m3), minor 6<sup>th</sup> (m6), and minor 7<sup>th</sup> (m7), respectively (Figure 7.20).

Therefore, to determine the major or minor quality of a 3<sup>rd</sup>, 6<sup>th</sup>, 7<sup>th</sup> and the compounds (10<sup>th</sup> and 13<sup>th</sup>) is a simple matter of determining whether the higher note fits into a major or a minor scale based on the bottom note.

Figure 7.20 Minor Scale On C:

P1 M2 m3 P4 P5 m6 m7 P8 M9 m10 P11 P12 m13  
do re me fa sol le te do re me fa sol le

**Thirds** - Major and minor thirds are generated from the 3<sup>rd</sup> note up from either the major or minor scale, *mi* or *me* (Figure 7.21, 22).

Figure 7.21 Major 3<sup>rd</sup>:

E 1 3  
C do mi

Figure 7.22 Minor 3<sup>rd</sup>:

E $\flat$  1  $\flat$ 3  
C do me

**Sixths** – Major and minor sixths are generated from the sixth degree of the major or minor scale and are the inversions to the thirds.

**Figure 7.23** Major 6<sup>th</sup>:

A 1  
C do  
6  
la

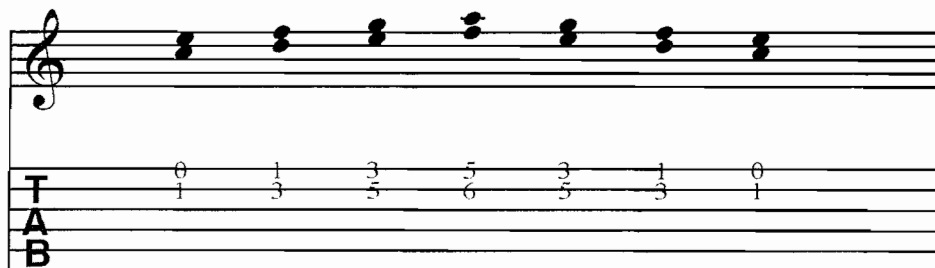
**Figure 7.24** Minor 6<sup>th</sup>:

Ab 1  
C do  
b6  
le

In the above paragraphs we saw how perfect intervals (unisons, octaves, fourths, and fifths) are all used in some way, at times, to complement a melodic line, be that a bass line, chord progression, or the song's melody. The same is true for thirds and sixths. Though any interval may be used to create such a harmony, these intervals are by far, the most common. Thirds and sixths are ideal, because they do not have the unnatural, robot-like, sound of fifths, nor do they have the irresolute, dissonant quality of fourths and other intervals.

With this type of interval, a harmony is created by a melodic line sung or played a third or a sixth away from the melody, with similar motion.<sup>12</sup> For example, if a melody were sung in the key of C major, moving from C, up by step to F (*do* to *fa*) and back down to C again (*do—re—mi—fa—mi—re—do*), the harmonist could sing beginning major 3<sup>rd</sup> above this, moving in the same direction, but staying in the key. They would sing E up to A and back (*mi—fa—sol—la—sol—fa—mi*). By confining the harmony to notes in the scale, both major and minor thirds are employed in a single line (Figure 7.25).

**Figure 7.25** Harmony in Thirds, C Major:

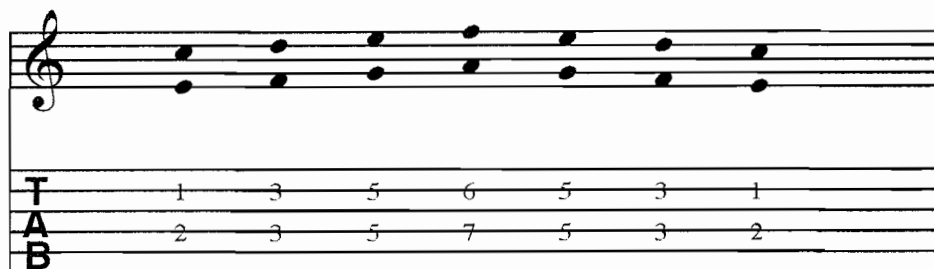


A vocalist could invert this harmony so that the line is sung below the melody, creating a string of sixths, beginning with a minor 6<sup>th</sup> below (Figure 7.26).

In a minor key, a melody moving up to the 4<sup>th</sup> note of the scale would proceed *do—re—me—fa—me—re—do*. This would be harmonized beginning a minor 3<sup>rd</sup> above, on *me*, and following the scale (*me—fa—sol—le—sol—fa—me*) (Figure 7.27).

<sup>12</sup> “Similar motion” with regard to vocal harmony implies that a harmony line follows the melody in terms of pitch direction (i.e. when the melody goes up, so does the harmony). This is different from stricter “parallel motion” which means that each vocal part moves in the same direction maintaining a strict intervallic distance (i.e. always a M3 apart).

**Figure 7.26** Harmony in Sixths, C Major:



T	1	3	5	6	5	3	1
A	2	3	5	7	5	3	2
B	2	3	5	7	5	3	2

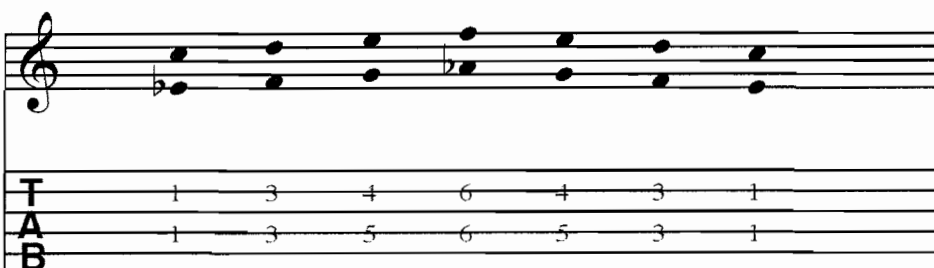
**Figure 7.27** Harmony in Thirds, C Minor:



T	4	6	8	9	8	6	4
A	5	7	8	9	8	7	5
B	5	7	8	9	8	7	5

Likewise, the inversion of this same harmony would begin a M6 below *do* (Figure 7.28).

**Figure 7.28** Harmony in Sixths, C Minor:



T	1	3	4	6	4	3	1
A	1	3	5	6	5	3	1
B	1	3	5	6	5	3	1

The bridge section of the popular song, *How Great Is Our God*, provides a perfect example of a moment where the harmonizing voice can follow the melody in thirds quite well. In this case, the harmony part is sung above the melody, but the



inversion of this interval (sixths below) could work just as well. Try singing the below vocal harmonies along with the melody and accompaniment in order to get the full effect of how they resonate with the other voice and the overall harmony. Familiarize yourself with singing these parts both above and below the melody (Figure 7.29).

**Figure 7.29** How Great Is Our God – Chris Tomlin, Jesse Reeves, Ed Cash

Name a - bove \_\_\_ all \_\_\_ names; \_\_\_ You are worth-y of \_\_\_ all \_\_\_ praise. \_\_\_ My

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However, at the beginning of the song, singing a third above the melody may not sound as pleasant (Figure 7.30).

**Figure 7.30** How Great Is Our God – Chris Tomlin, Jesse Reeves, Ed Cash

The splen - dor or \_\_\_ the King, \_\_\_ robed in ma - jes - ty. \_\_\_

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As you sing both examples, listen to how well the harmony of the first example resonates with the chord progression of the song, while the second one does less so. Sometimes a harmony part may fit well with a melody alone, but with the accompanying chords, may sound out of place.

Creating a great harmony line isn't as simple as singing thirds or sixths along with a melody, however. Often times, the chords of a song demand one to sing a harmony at an interval other than a third or sixth. So, to craft a harmony part in an artful way, it is important to be able to sing a third away from any note (above and

below), but also to hear when it is necessary to deviate from this pattern. At some points in any given song, it may be desirable to harmonize the melody with an interval that may be typically avoided, like the perfect fourth or fifth, or even a major or minor second, even if they are more dissonant sounding with the accompanying voice than a third or sixth is.

**Seconds** – Major and minor seconds do not reflect their respective places in the major and minor scale, the same way the other intervals have. The major 2<sup>nd</sup> is found as the second scale degree (*re*) in both major and minor scales, while the minor 2<sup>nd</sup> is equivalent to the half step. The m2 is found in *mi—fa* and *ti—do* in major keys, likewise *re—me* and *sol—le* in minor keys (Figure 7.31, 32).

**Figure 7.31** Major 2<sup>nd</sup>:

D	<b>1</b>	<b>2</b>
C	<i>do</i>	<i>re</i>

**Figure 7.32** Minor 2<sup>nd</sup>:

C	<b>3</b>	<b>4</b>	<b>7</b>	<b>8</b>
B	<i>mi</i>	<i>fa</i>	<i>ti</i>	<i>do</i>

**Sevenths** – Major and minor sevenths are the inversion of seconds and do reflect their places in either scale. The major 7<sup>th</sup> is found on the seventh scale degree of major, *ti* (Figure 7.33, 34).

**Figure 7.33** Major 7<sup>th</sup>:

T 0 || 3 0 2 3 0 2 0 1  
 A 3 || 3 0 2 3 0 2 0 1  
 B 3 || 3 0 2 3 0 2 0 1

B **1** 7  
 C *do* *ti*

**Figure 7.34** Minor 7<sup>th</sup>:

T 3 || 3 0 1 3 0 1 3 1  
 A 3 || 3 0 1 3 0 1 3 1  
 B 3 || 3 0 1 3 0 1 3 1

B $\flat$  **1**  $\flat$ 7  
 C *do* *te*

Major seconds and minor seconds and their respective inversions are dissonant intervals, meaning they don't harmonize very well in isolation, but they do occur in more complex chords. It is necessary to be very careful how to treat them when bringing out this sound in the music, for when it is done well, the effect can be quite beautiful. The vocal duo Shane Barnard and Shane Everett, known for their great harmonizing, have often used these dissonant intervals in their music and achieved amazing results. The use of these intervals in popular music is a

rather complex topic that cannot get full treatment here. For now it is beneficial to become acquainted with their sound and how they sound in context.

In context, these intervals are usually employed as some sort of passing harmony, wherein a second melody line passes through a dissonant 2<sup>nd</sup> or 7<sup>th</sup> momentarily, to rest on a more consonant interval. The examples below provide examples of these possible harmony lines accompanying a single note: in each case, C. The examples depict upward and downward resolution of major seconds, minor seconds, and their inversions (sevenths) (Figure 7.35, 36).

**Figure 7.35** M2 & m7 Resolutions:

M2 Resolve Up:          m7 Resolve Up:          M2 Resolve Down:          m7 Resolve Down:

T	3	0	1	1	3	1	1
A	5	5	0	2	5	0	3
B							

**Figure 7.36** m2 & M7 Resolutions:

m2 Resolve Down:          M7 Resolve Down:          m2 Resolve Up:          M7 Resolve Up:

T	1	1	0	2	1	1	0	1
A	4	2	0	2	4	0	3	3
B			3	3			3	3

At times, a 2<sup>nd</sup> will appear in exactly this context, where it occurs as part of a descending line either above or below that is harmonizing a sustained pitch. In this case, the dissonant interval resolves downward to a consonant third. Such a

harmony part could be sung below the melody of *Shout To The Lord* at the end of the verse on the words, “mighty love” (Figure 7.37).<sup>13</sup>

**Figure 7.37** Shout To The Lord – Darlene Zschech

A/C# D A/E F#m G D/F# Esus4 E

\_\_\_\_\_ I want to praise \_\_\_\_\_ the won-ders of your might - y love. \_\_\_\_\_

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Other times, the dissonant 2<sup>nd</sup> may appear in an entirely different situation. In this excerpt of *How Great Is Our God*, a harmony part may be sung above the melody that does not “need” to resolve downward. At first, this harmony may seem strange relative to the more conventional examples that have been provided thus far, but if you listen to the chords that underpin this section of the song, these notes are given sufficient context that the dissonance shouldn't seem out of place (Figure 7.38).

**Figure 7.38** How Great Is Our God – Chris Tomlin, Jesse Reeves & Ed Cash

A m F

\_\_\_\_\_ Let all the earth \_\_\_\_\_ re-joyce. \_\_\_\_\_ All the earth \_\_\_\_\_ re-joyce. \_\_\_\_\_ How great \_\_\_\_\_

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It may be that it takes some practice to get use to singing this type of harmony. In order get comfortable singing this type of dissonance, a singer must

<sup>13</sup> Asterisks indicate dissonant seconds.

not only listen to how the note they sing resonates with melody, but also to how it resonates with the chords being played. This discussion of consonant intervals versus dissonant ones and the practical uses of both necessitate a more in-depth overview of this topic from a music-theoretical perspective.

### The Tritone

The *tritone* is a unique interval that is created through the simultaneous sounding of the fourth and seventh scale degrees, *fa* and *ti*. When *fa* is the lower note, the interval creates a type of fourth, called an augmented 4<sup>th</sup> (Figure 7.39).

**Figure 7.39** Tritone – Augmented 4<sup>th</sup>:

B	<b>4</b>	<b>7</b>
F	<i>fa</i>	<i>ti</i>

When *ti* is in the bass, the inversion of the augmented 4<sup>th</sup> is the diminished 5<sup>th</sup> (Figure 7.40)

**Figure 7.40** Tritone – Diminished 5<sup>th</sup>:

F	<b>7</b>	<b>4</b>
B	<i>ti</i>	<i>fa</i>

**Augmented** (aug) intervals are created when a perfect or major is increased in size by a half step, likewise **diminished** (dim) intervals are formed when a perfect or minor interval is decreased by a half step. This is seen most plainly in the diagram below (Figure 7.41).

**Figure 7.41** Augmented & Diminished Intervals

(-1 half step) ←→ (+1 half step)  
Diminished—Perfect—Augmented

(-1 half step) ←→ (+1 half step)  
Diminished—Minor—Major—Augmented

These intervals, occurring diatonically in the tritone, have a rather dissonant character<sup>14</sup> that demands special resolution in most cases (Figure 7.42).

**Figure 7.42** Tritone Resolutions:

Aug 4<sup>th</sup> Resolution:

Dim 5<sup>th</sup> Resolution:

T	0	1				
A			2			
B	3				2	3

Because of its dissonance, it is not as common an interval as perfect, major, or minor intervals, though it is often heard in popular music. It occurs primarily in diminished chords and dominant sevenths (we will discuss these in chapters 8 and 9). Below is an example of a song where this interval occurs as part of the dominant

<sup>14</sup> This character earned this interval the nickname *diabolus in musica* ("the devil in music") and was banned from music in the Church for centuries. Ironically, today it is arguably the harmonic centerpiece of gospel music.

7<sup>th</sup> chord (E7 in both cases) and is even an interval to be sung in the melody. Play each example (Figure 7.43).

**Figure 7.43** How Great Thou Art – Stuart K. Hine

A                      A C#              B m.D                      E7              A

Thee; ————— how great Thou art, ————— how great Thou art!  
sol                      do ti do re                      mi fa ti do

©1953 Stuart K. Hine, Renewed 1981 Manna Music, Inc, arr. by the author

### **Consonance vs. Dissonance**

We've already given some attention to the notion of consonance and dissonance, but it would be of benefit to discuss it in some detail here. As we have progressed through our discussion of intervals, you have no doubt noticed how some intervals sound better than other. There are certain intervals that resonate in a way that creates little or no harmonic tension. We call this **consonance**. Other notes, when played together, create intervals with a lot of tension, which is called **dissonance**. When we hear dissonant intervals we often want something to change so that we can experience some kind of release to consonance. However, it would be incorrect to assume that dissonant intervals are bad while consonant intervals are good.

Music itself can be thought of as the artful control of consonance and dissonance. It is the treatment of dissonance in music that can make it seem so beautiful and emotionally compelling.<sup>15</sup> Below is a list of all the intervals and how they resonate, as consonant or dissonant, or both (Figure 7.44)

---

<sup>15</sup>In a way, dissonance can help to tell a story in music. Like any good story, a well-established conflict will make an eventual resolution more enjoyable. Throughout this book we will return to this idea of consonance and dissonance to uncover techniques for using it to our advantage for making music exciting and beautiful.



**Figure 7.44** Chromatic Scale:

C D D C C C/D D C C C D D C  
 P1—m2—M2—m3—M3—P4—Aug4/Dim5 (TT)—P5—m6—M6—m7—M7—P8

You will notice that this chromatic spectrum of intervals spanning a full octave creates a pattern of consonances and dissonances. This pattern is a palindrome because each interval creates the same quality of sound, consonant or dissonant, as its inversion. The exception is the P4, which traditionally can be either consonant or dissonant depending on context. This dissonant 4<sup>th</sup> occurs in both “sus” chords and 2<sup>nd</sup> inversion chords, a concept we’ve already touched on and will be covered in more depth in the following chapters on chord theory.

### ***Tip: Ear Training With Intervals***

Important to understanding the consonant and dissonant relationships between notes that intervals create, is developing the ability to hear and play these intervals by ear. This ability will become an invaluable tool for you as a musician. Hearing and identifying intervals allows you to recognize and identify different chords, chord progressions, and melodies by ear. Furthermore, combining this ability with theoretical knowledge allows one to use theory to sing harmony along with a melody and put into practical use many of the skills that will be discussed in this book.

Explore consonance and dissonance by singing each interval melodically and harmonically and using the solfège syllables as they have been assigned below. You will notice the particular tensions that some intervals create, especially when they

are played harmonically. Some dissonances, most notably the m2/M7 and the Aug4/Dim5, can even be difficult to sustain by a vocalist as they create a significant amount of harmonic tension and seem abnormal in most popular music contexts.

The example below gives the chromatic spectrum of notes and in the first three rows below the TAB, assigns each one with a solfège syllable, note name, and interval name as it relates to the first note of the scale (Figure 7.45). The fourth row identifies each note as it relates to the major scale, i.e. scale degree. Being able to identify a note this fourth way will become helpful as we discuss chord theory more in depth.

**Figure 7.45** Chromatic Solfège

Note Name:

C—D $\flat$ —D—E $\flat$ —E—F—F $\sharp$ /G $\flat$ —G—A $\flat$ —A—B $\flat$ —B—C

Solfège Syllable:

*do—ra—re—me—mi—fa—sol—si/le—le—la—te—ti—do*

Interval:

P1—m2—M2—m3—M3—P4—Aug4/Dim5—P5—m6—M6—m7—M7—P8

Scale Degree:

1— $\flat$ 2—2— $\flat$ 3—3—4— $\sharp$ 4/ $\flat$ 5—5— $\flat$ 6—6— $\flat$ 7—7—8

Play your instrument and sing each ascending interval melodically (one after another) and return to the starting pitch. Start with the m2 and expand outward to larger intervals by using C or another constant tonic as a reference pitch.

Play C then Db while singing, “do—ra—do”. Then practice a M2 by playing C to D while singing, “do—re—do”. This exercise should be practiced not only with melodic intervals, but also with harmonic intervals. Here, you will sustain the reference pitch (*do*) while singing the correct interval with the appropriate solfège syllable. You will be creating a two-note interval called a dyad, which can function like a chord.

Repeat the same exercise with descending intervals. Use the *do* at the octave as your reference pitch. Start by singing a descending m2 and returning to tonic, “do—ti—do”. Repeat this same exercise for all descending intervals from the octave both as melodic and harmonic intervals. When you feel comfortable singing these intervals with your instrument try singing them on your own, without the help of a reference pitch. Start by playing the interval, then repeating it on your own. Try to anticipate the note by hearing it in your head before you sing. Eventually you want to be able to sing any interval ascending or descending without the aid of an instrument by simply hearing it mentally. A helpful way to develop this ability is to associate the interval with a familiar song that uses it. You can probably hear the first three notes of *Happy Birthday* in your head without needing anybody to remind you of how it goes. *Happy Birthday* begins with an ascending M2. Here is a list of familiar songs and the intervals that they begin with. All are ascending intervals larger than a unison (Figure 7.46).

**Figure 7.46** Well-Known Songs and the Intervals that Begin Them:

**m2** – Theme from *Jaws*

**M2** – *Happy Birthday*

**m3** – *What Child Is This?/Greensleeves*

**M3** – *Holy, Holy, Holy*

**P4** – *How Great Is Our God*

**Aug4/Dim5** – The Simpson’s Theme

**P5** – *O Come, O Come Emmanuel*

**M6** – *NBC* (three-note chime melody)

**m7** – *Star Trek: The Original Series Theme*

**M7** – *Bali Hai* (1<sup>st</sup> & 3<sup>rd</sup> Notes)

**P8** – *Over the Rainbow*

### **Transposition**

A firm understanding of intervals is also extremely helpful for quickly transposing music. Transposition is the notation or performance of a composition in a different key from the one in which it was originally written.<sup>16</sup> Consider these typical instances where transposition is needed:

- 1) Transposition by known interval:** This occurs when you must transpose a song by a given interval. For instance, you may notice that a soloist is struggling with the key of a song. She tells you that it is too low for her voice and asks that you play it 2 steps higher. It is then your task to transpose every chord of the song up by a M3.
  
- 2) Transposition to known key:** This is one step removed from transposing by a known interval. At times you may know what key you need to get to and must determine what interval of transposition is needed by comparing the distance between the two keys. Say you want to do a song by Chris Tomlin, but your recording is in E and is too high for you or the congregation to sing comfortably. You know that you could also play it comfortably in the key of C and it would be a better key for most people to sing. To transpose to this key, simply determine the intervallic distance between E and C (M3 down) and transpose all the chords by this distance.

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<sup>16</sup> Theodore Baker, ed., *Schirmer Pronouncing Pocket Manual of Musical Terms*, 5<sup>th</sup> ed., (New York: Schirmer Trade Books, 1995), 243.

- 3) Transposing with a capo (by known key):** The capo is a clamp that is set across the fingerboard of a guitar to raise the pitch of the strings. Oftentimes a guitarist will use one to allow for similar chord fingering<sup>17</sup> to be played in a variety of keys. In such a case, a guitarist may have a specific key he or she desires to play in while maintaining the fingerings of a different key. Here, the guitarist must determine the intervallic distance from the original (no capo) key and the desired key and place the capo at the fret that is that distance from the nut of the guitar neck.
- 4) Transposition with a capo (by known interval):** Conversely, a guitarist may desire to play with a capo, but in order to share music with other instruments that do not use one, he or she must transpose the music they read to the sounding key so that it can be used by musicians who cannot use a capo. For instance, a worship leader who is playing a guitar with a capo, may easily read chords in the key that corresponds to the fingerings they are playing (not the actual sounding key), but these are not the chords that instruments that cannot capo play. Therefore, in order to provide musicians with music in the right key, the intervallic distance between the guitarist's fingerings and the actual key must be determined in order to transpose the music to the correct key.

When transposing a key up or down by a small interval like a whole or half step, it is an easy task to count the half steps to the next note, but for larger intervals, it can become time consuming to count steps for every chord (three and half steps in the case of the P5).

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<sup>17</sup> It is often preferable for a guitarist to choose a key that allows for chord fingerings with open strings, generally the major keys of C, D, E, G, A, and B. A capo may be used to play the fingerings of these keys where barre chords would otherwise be required.

There is another method for transposition that can also act as a shortcut if the interval of transposition is too large or is an awkward interval that is unfamiliar. Simply transpose the first chord by that interval and then count the number of steps up or down to the next chord and determine the same distance from the transposed chord. For instance, if the key to be transposed is in the key of E and contains the chord progression  $E \rightarrow F\#m \rightarrow G\#m \rightarrow A$ , and this needs to be transposed to the key of A simply follow the pattern of intervals generated by this succession of chords.  $E \rightarrow F\#$  is a whole step,  $F\# \rightarrow G\#$  is another whole step, and  $G\# \rightarrow A$  is a half step. Now copy this pattern, beginning with A.

Old key:

$E \rightarrow F\#m \rightarrow G\#m \rightarrow A$

New key:

$A \rightarrow Bm \rightarrow C\#m \rightarrow D$

Since many songs have chords that move at small intervals, this can be a quick and easy way to transpose.

As you continue to study scales and chords, instantly recognizing the distance between two notes will become more intuitive. Eventually, with a sufficient knowledge of intervals and scales, transposing a song up or down by larger intervals can be quick and effortless. Transposition is a task requiring music theory that musicians perform all the time. Developing this skill is very important for almost any musician. You can practice this skill by transposing a given chord progression up or down into a variety of keys.

### Practice Exercises

For the example below, identify given intervals' numeric values and qualities. If depicted on the staff, indicate possible fret placement in the TAB. If indicated in TAB, notate the probable interval on the staff (Figure 7.47).

**Figure 7.47** Practice Exercises

Figure 7.47 consists of four musical examples, each with a staff and a corresponding TAB notation. The examples are as follows:

- Example 1:** The staff shows a treble clef with notes G4, A4, Bb4, and B4. The TAB notation shows fret numbers 5, 0, 2, and 2.
- Example 2:** The staff shows a treble clef with notes G4, Ab4, A4, and G4. The TAB notation shows fret numbers 0, 3, 0, and 1.
- Example 3:** The staff shows a treble clef with notes G4, A4, Bb4, and B4. The TAB notation is empty.
- Example 4:** The staff shows a treble clef with notes G4, Ab4, Bb4, and A4. The TAB notation is empty.

For the examples of perfect fourths below, notate in the staff and on the TAB the likely resolution of the dissonance. When no staff notation is provided, indicate

the interval notated in TAB. If only TAB is provided, notate the intervals on the staff (Figure 7.48).

**Figure 7.48** Practice Exercises

The figure shows two musical examples. Each example consists of a treble clef staff with a key signature of one sharp (F#) and a corresponding TAB staff with three lines labeled T, A, and B.

**Example 1:** The staff shows a chord of F#4 and A4 in the first measure, followed by a whole rest in the second measure, and a chord of F#5 and A5 in the third measure. The TAB staff shows: Measure 1: T=2, A=1; Measure 2: empty; Measure 3: T=3, A=3.

**Example 2:** The staff shows a chord of F#4 and A4 in the first measure, followed by a whole rest in the second measure, and a chord of F#5 and A5 in the third measure. The TAB staff shows: Measure 1: T=4, A=1; Measure 2: empty; Measure 3: T=8, A=8.

For the tritone examples below, indicate whether the interval is an aug4 or a dim5 and also notate on both the staff and TAB the inward moving or outward moving resolution (Figure 7.49).

**Figure 7.49** Practice Exercises

The figure shows a musical example with a treble clef staff in the key of D major (one sharp) and a corresponding TAB staff with three lines labeled T, A, and B.

The staff shows four measures: Measure 1: D4 and F#4; Measure 2: D#4 and F#4; Measure 3: D#4 and F4; Measure 4: D4 and F4.

The TAB staff shows: Measure 1: T=0, A=3; Measure 2: T=5, A=4; Measure 3: T=2, A=0; Measure 4: T=2, A=2.

Below is a song in the key of D, the chords and guitar riff (in TAB) must be transposed up to the key of F. Notate the transposed music on the blank staff (Figure 7.50)



**Figure 7.50** Practice Exercises

D                      A                      B m                      G

T	7 7 7 7 7 7 7 7	3 3 3 2 2 2 2 2	3 3 3 3 3 3 3 3
A			
B			

T			
A			
B			

You are a guitarist playing a song in the key of Bb, but you want to use a capo to use fingerings from the key of G (Figure 7.51). On what fret do you place your capo?

**Figure 7.51** Practice Exercises

E<sup>b</sup>                      B<sup>b</sup>                      G m                      F

On the staff below, transpose the chords from the key of Bb key of G, so you know what fingerings to use (Figure 7.52)

**Figure 7.52** Practice Exercises

## CHAPTER VIII

### TRIADS

Having gone through a detailed study of the fundamentals learned in Part 1 – Theory Fundamentals, these concepts can now be applied to a detailed study of chord theory. In Part 2, for the next five chapters, we will discuss theory and practical use of the chords we play in popular music. This is a crucial point in your development as a musician, because understanding chord theory takes one’s knowledge of harmony from the mere physical level – where you see chords as physical patterns and shapes on your instrument – and combines that knowledge with a conceptual understanding of their structure. By broadening your perspective this way, you move beyond mere “muscle memory” to open up your music making to engage more of the mind and be more creative.

It may be that you have already developed an extensive chord vocabulary as a musician and know how to play a lot of chords, perhaps even ones that you wouldn’t regularly employ in a worship service, yet you may not know how or why one would use all these different chords. Learning chord theory will bring meaning and coherence to a seemingly infinite array of chord possibilities by establishing context for them. On the other hand, you may not have felt compelled to learn a huge variety of chords because the music that you play in church seems only to require the limited number you are already familiar with. With theory, you can gain the knowledge to climb out of the same mode of music making you may be stuck in or help further develop and expand an established sound. To get there, we must begin at the most basic level of chord theory to examine the origin and structure of the chords you most likely know in order to build the context for a discussion of more advanced chord structures that until now remained a mystery.

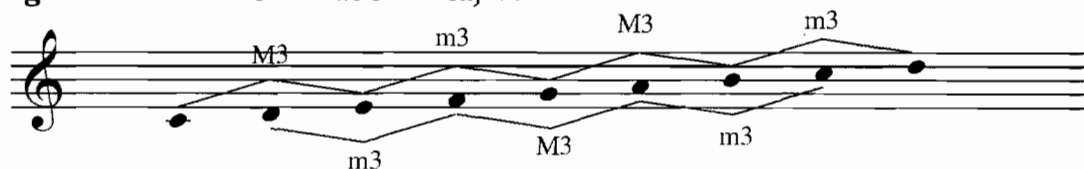
By definition, a chord consists of 3 *or more* notes played simultaneously. So, in order to find our way through what is a seemingly endless amount of options, we will discuss presently only the most commonly used chords, those that make up the basic harmonic language of popular music – and consequently contemporary Christian music.

### **Diatonic Triads**

The most commonly used chords are diatonic triads. Simply put, a triad is a three-note chord, but more specifically, a diatonic triad is a three-note chord derived from a specific major or minor scale. Or in other words, a diatonic triad is a chord in the key. These chords arise from the harmonization of the diatonic scale of a given key.

In the last chapter we found that the most pleasing harmony was the 3<sup>rd</sup>, and it is with this interval that we harmonize a scale into its constituent diatonic triads. To do this we group each note in the scale by intervals of a 3<sup>rd</sup> (every other note). Below is a diagram depicting each interval of a 3<sup>rd</sup> contained in the C major scale. Note that this scale is extended up to the D above the octave to show that a 3<sup>rd</sup> is also created between the 7<sup>th</sup> and 9<sup>th</sup> scale degrees (*ti* and *re*) (Figure 8.1).

**Figure 8.1** Diatonic Thirds in C Major:



To form a triad we simply skip every other note in the scale to include three notes separated by thirds. The first triad in the key of C major is built from *do* and contains the notes C—E—G (*do—mi—sol*). The first note is C and a third higher is E and a third higher than E is G. The second triad in C major would be D—F—A (*re—fa—la*), the third E—G—B (*mi—sol—ti*), and so on. If every note of the scale is

harmonized into its own triad, this creates a total of seven different diatonic triads found in the key of C major. In order to identify each triad diatonic to the key, they are numbered I—VII using roman numerals (Figure 8.2).<sup>18</sup>

**Figure 8.2** Diatonic Triads in C Major:

	I	ii	iii	IV	V	vi	vii <sup>o</sup>	I
5—	G	A	B	C	D	E	F	G
3—	E	F	G	A	B	C	D	E
R—	C	D	E	F	G	A	B	C

Likewise, there is the possible harmonization of the minor scale (Figure 8.3).

**Figure 8.3** Diatonic Triads in C Minor:

	i	ii <sup>o</sup>	<sup>b</sup> III	iv	v	<sup>b</sup> VI	<sup>b</sup> VII	i
5—	G	A <sup>b</sup>	B <sup>b</sup>	C	D	E <sup>b</sup>	F	G
3—	E <sup>b</sup>	F	G	A <sup>b</sup>	B <sup>b</sup>	C	D	E <sup>b</sup>
R—	C	D	E <sup>b</sup>	F	G	A <sup>b</sup>	B <sup>b</sup>	C

<sup>18</sup> Numbering diatonic triads according to their place in the scale becomes more important as we discuss chord progression in later chapters.

## Chord Tones

Now that each tone of the scale has a three-note chord to call its own, we may examine triads closer, regarding those tones. Each of the three notes of a given triad has a special identity and role with respect to that chord. Each triad in the scale has three notes called the root, third, and fifth. The note of the scale that the other tones harmonize is the **root** of that chord. Like tonic does for a scale and key, the root gives a chord its name and is the reference point for all other notes to relate. If the root of a chord is C, then this is a type of C chord. So, the first chord in the key of C major is a C chord, the second is a D chord, and so on.

The other two notes in a triad have names based on their intervallic distance from the root. The **third** is called such because it is the third note away from the root. This tone defines the chord's quality (major, minor, etc.). Consequently, the **fifth** of the chord is five notes away from the root. The fifth defines the type of chord to some degree, but to a lesser degree than the third. It has the larger role of rounding out the sound of the chord (Figure 8.4).

**Figure 8.4** C Major Triad:

The figure shows the C Major Triad in two parts. The top part is a musical staff with a treble clef. It starts with a C major triad (C4, E4, G4) and then shows a melodic line connecting the notes C, D, E, F, G, A, B, C. The bottom part is a guitar fretting diagram with three strings labeled T (Treble), A (2), and B (3). The first chord is C major (0, 2, 3) and the second chord is C major (3, 0, 5). The root note C is labeled 'R' below the fretting diagram.

Having the ability to see a chord symbol on a lead sheet and determine specifically what the chord tones are (root, third, etc.) is necessary, in part, for being able to have creative control over the sound of the chord. The following example of the hymn *And Can It Be* provides an excellent opportunity for developing this skill, since the melody itself illustrates what chord tones are present by outlining the each note of the chord (Figure 8.5).

**Figure 8.5** And Can It Be – Charles Wesley & Thomas Campbell

©Public Domain

Though the first three measures outline the chord tones of each triad, they are not necessarily in an order we have yet seen. In this case, the first and lowest note of each measure is not the root. The fact is that in most situations, the notes of a chord aren't laid out in an orderly fashion, stacked neatly in thirds, as has been depicted thus far in the text. Therefore, ascertaining chord tones from a collection of notes, or simply a chord progression, requires a little detective work to determine what make up the chord.

To do this, simply imagine a scale built from the root of each chord, ordering all the tones in the span of the octave. Move up by thirds from the root to identify what is the root, third, and fifth. The diagram below shows the first three chords from the progression above with a scale based on the root of each chord. Note that each scale extends up an octave from the root, but each scale holds to the key signature of the song, G major. As a result, the scales built from C and D are not major scales. This allows us to identify the chord tones for each chord of this song's excerpt (Figure 8.6).

**Figure 8.6** Chord Tones of the Triad Extrapolated from its Own Scale:



**Figure 8.8** C Major Triad (C):

T  
 A  
 B

0 2 3 | 3 0 2 3 0 2 0 1

G E C      R 3 5  
 do mi sol

As depicted above, a major triad is built off of the first triad in a major scale, but other tones of the scale produce major triads when harmonized as well. In any major key, chords built on *do*, *fa*, and *sol* produce major chords. These are identified with the upper-case Roman numerals I, IV, V, respectively (Figure 8.9).

**Figure 8.9** Major Triads in C Major:

T  
 A  
 B

0 0 2 | 1 2 3 | 2 4 | 3 2 1

I IV V I  
 do fa sol do

However, in minor keys major chords occur on the harmonization of *me*, *le*, and *te* creating  $\flat$ III,  $\flat$ VI,  $\flat$ VII chords (Figure 8.10).

The use of roman numerals serves more didactic purposes that will be employed in this text, but on a lead sheet major chords are usually notated with chord symbols that contain only the root name. For instance, a solitary root, "C" would represent a major chord, however, other common typologies for a C major chord may include: Cmaj, CM, and C $\Delta$ . Chord symbols are not standardized, but this





**Figure 8.12** C Minor Triad (Cm):

G R  $\flat$ 3 5  
 E do me sol  
 C

**Figure 8.13** Minor Triads in C Minor:

i iv v i  
 do fa sol do

**Figure 8.14** Minor Triads in C Major:

ii iii vi  
 re mi la

The chord symbol for minor usually has a lower case 'm' attached to the root, so a C minor chord would be 'Cm'. Some common variants are Cmin, Cmi, and C-. There is only one note, the third, differentiating major from minor, but this doesn't mean that the difference is small. The qualities of major and minor chords, which make up the bulk of harmony in popular music, provide a necessary contrast to keep

a given song from sounding overly monotonous. The song *Lord I Lift Your Name On High* by Rick Founds offers a great example of how minor chords may be used to vitalize a song dominated by largely one chord quality (major). Below is the concluding phrase of the song, which up to this point has been dominated by major chords (G, C, and D). At the end however, Founds inserts two minor chords (Em7 and Am7) that help bring a refreshing contrast and end the song with the “punch” of some new harmonic material (Figure 8.15).

**Figure 8.15** Lord I Lift Your Name on High – Rick Founds

G                  C                  D                  Em7                  Am7                  D                  G

— From the cross —to the grave, —from the grave —to the sky: —Lord I lift your name —on high.

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### Diminished Triads

Diminished triads do arise from harmonized diatonic scales, but unlike major or minor triads, they cannot be defined as the tonic of a key. The reason for this is that there are no diminished keys, only major and minor keys. Rather, the diminished chord is a consequence of a diatonic harmonization of the seventh degree of major (*ti*) or the second in minor (*re*). Therefore, the triad is depicted as such below. The root of the chord is not *do*, but instead *ti* instead. Compared to a major triad, the diminished triad contains a flatted third and fifth and gets its name from its fifth, which, being flatted, contains the interval of the diminished 5<sup>th</sup> (dim5). In this respect, the fifth plays a very important role for this triad, distinguishing it from minor triads, which contain only the  $\flat 3$  (Figure 8.16).

**Figure 8.16** B Diminished Triad ( $B^\circ$ ):

T  
 A  
 B

F      R       $b3$        $b5$   
 D      *ti*      *re*      *fa*  
 B

In major keys, the diminished chord is found as a harmonization of *ti*, identified  $vii^\circ$  (Figure 8.17).

**Figure 8.17** Diminished Triad in C Major:

T  
 A  
 B

$vii^\circ$   
*ti*

In minor keys, this chord is found as a harmonization of *re*, thus  $ii^\circ$  (Figure 8.18).

**Figure 8.18** Diminished Triad in C Minor:

T  
 A  
 B

$ii^\circ$   
*re*





When you are comfortable identifying major and minor chords on the same root, try expanding this study to include chords with differing roots. Compare C major to E minor, or any other combination, until you can successfully hear the difference between major and minor and also identify the individual notes within each chord. Practicing with C major and E minor is a particularly good study because the two chords share in common two out of three notes (E and G). Therefore, you will have to rely on your aural conception of how these notes fit into the structure of the chord and not necessarily their actual pitch. In this study, listen to how these notes change function when placed in the context of E minor as opposed to C major. It is important to be able to hear how a single tone can change roles when placed in the context of a new chord (Figure 8.23).

**Figure 8.23** Major vs. Minor:

C major triad:	E minor triad:
C	E m
R      3      5	R      b3      5
<i>do      mi      sol</i>	<i>do      me      sol</i>

You want to be able to apply these skills to any musical situation, so attempt to mimic “real life” musical situations to help prepare you for using these skills the next time you rehearse or play in church. Here are some ways to practice this:

- 1) Play different voicings of the triad.<sup>21</sup> The simplest way to play a triad is to play the three notes as close together as possible, each separated by a third

<sup>21</sup> Voicing pertains to the arrangement of pitches of a chord with regard to their order and register. The notes of a triad played in any order (low to high) or in any octave will still create the same chord,

(like they have been illustrated above), but much of the time chords are not played with this basic voicing. You must be able to hear the same relationships between the notes of a chord in any voicing to be prepared to use these skills in an actual musical situation. If you are a pianist, play different voicings of the same triad in different registers on the keyboard. For guitarists, a good place to start may be by playing 1<sup>st</sup> position (open string) chord voicings followed by a barre chord voiced higher on the guitar's neck (Figure 8.24).

**Figure 8.24** 1<sup>st</sup> Position Chords & Alternative Voicings:

The figure displays musical notation for five chords: C, A, G, E, and D. For each chord, there are two alternative voicings shown. The notation consists of a treble clef staff with notes and a guitar tablature staff with fret numbers. The tablature is labeled 'TAB' on the left side.

Chord	Voicing 1 (Frets)	Voicing 2 (Frets)
C	0, 2, 3, 8, 9, 10	0, 2, 3, 8, 9, 10
A	0, 2, 2, 4, 4, 5	0, 2, 2, 4, 4, 5
G	0, 0, 2, 3, 3, 3	0, 0, 2, 3, 3, 3
E	0, 0, 1, 2, 2, 0	0, 0, 1, 2, 2, 0
D	0, 2, 2, 3, 3, 5	0, 2, 2, 3, 3, 5

- 2) Develop your ability to hear and sing the notes of a triad. A good way to do this is to play two notes of a triad and sing the missing tone. In the exercise below, the full triad is indicated in the first measure. The next three show two notes of the triad that are to be played on your instrument. While these notes ring, attempt to sing the missing tone (indicated to the right in each bar).

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but one can create different voicings of the same chord by playing these notes in different arrangements on the keyboard or fingerboard.



**Figure 8.25** Sing Missing Tones:

Sing missing fifth:    Missing third:    Missing root:

A

The figure shows the A major chord in three variations: full chord, missing fifth, missing third, and missing root. The notation includes a treble clef staff with a key signature of one sharp (F#) and a guitar TAB staff below it. The TAB staff shows fingerings for the strings: 0-2-2 for the full chord, 0-2-2 for missing the fifth, 0-2-2 for missing the third, and 0-2 for missing the root. Below the TAB staff, the notes are labeled as 5 (sol), 3 (mi), and R (do).

5                                  3                                  R  
*sol*    *mi*    *do*

For the next example, do the same with A minor.

**Figure 8.26** Sing Missing Tones:

Sing missing fifth:    Missing third:    Missing root:

A m


The figure shows the A minor chord in three variations: full chord, missing fifth, missing third, and missing root. The notation includes a treble clef staff with a key signature of one flat (Bb) and a guitar TAB staff below it. The TAB staff shows fingerings for the strings: 0-1-2 for the full chord, 1-0-2 for missing the fifth, 0-1-2 for missing the third, and 0-1 for missing the root. Below the TAB staff, the notes are labeled as 5 (sol), b3 (me), and R (do).

5    b3    R  
*sol*    *me*    *do*

### Ear Training for Diminished Chords

The structure and function of diminished triads are very different from major or minor ones and as a result these chords will be treated differently in an ear training study. Try comparing a diminished triad to a major or minor triad of the same root and you will perceive a high level of harmonic tension compared to the other two (Figure 8.27).

**Figure 8.27** Major & Minor vs. Diminished

	B	B m	B <sup>°</sup>
			
<b>T</b>	2	2	1
<b>A</b>	4	3	3
<b>B</b>	4	4	4
	5	5	b5
	3	b3	b3
	R	R	R

Listen to the unique sound of a diminished chord. This sound is used often, in blues, jazz, and rock music influenced by these genres. However, this triad is rarely heard in contemporary Christian music, but using it can be interesting and exciting. However, in this context, it must be treated carefully, since its quality is so distinct.

Unlike major or minor, diminished chords have a certain unresolved character that causes the listener to expect another, more stable chord to follow it. As a result, they are best understood in context of this ebb and flow of consonance and dissonance. The following exercises will allow this by showing you how the diminished triad works in real musical situations.

The tension in this chord is a result of the dissonant diminished 5<sup>th</sup> between the root and the fifth. It is the tendency of dissonant intervals to “want” to resolve to more consonant ones. These fifths are perceived as unstable and so our ears expect the interval to do this by increasing or decreasing in size to a consonant interval within the key.

### **Resolution of the Diminished Triad**

As we saw in the last chapter, the natural tendency for this diminished 5<sup>th</sup> is to have both pitches of the interval move inward by half steps, decreasing the interval to a consonant M3. Since this dissonant 5<sup>th</sup> resolves to the simple dyad C—

E, there are two triads that this chord could resolve to. As we saw earlier with the C major and E minor chord, two different triads may have up to two similar notes. In this instance, the succeeding chord could be C major (I), since C and E would be the root and third of that chord. Also, it could resolve to C minor (if *fa* resolved to *me* instead of *mi*). Conversely, if C and E functioned as the third and fifth of the new chord, the succeeding chord would be A minor (vi). The remaining tone of the succeeding triad, will determine to which of these chords the diminished triad resolves (Figure 8.28).

**Figure 8.28** Diminished Triad Resolutions:

The figure illustrates three resolutions of a diminished triad (B°) in the key of E minor. Each resolution is shown with a treble clef staff, a guitar chord diagram, and Roman numeral notation.

- Resolution 1:** B° (notes: B, D, F) resolves to C major (I). The chord diagram shows the C major triad on the guitar. Roman numeral notation:  $vii^{\circ} I$ .
- Resolution 2:** B° (notes: B, D, F) resolves to C minor (i). The chord diagram shows the C minor triad on the guitar. Roman numeral notation:  $vii^{\circ} i$ .
- Resolution 3:** B° (notes: B, D, F) resolves to A minor (vi). The chord diagram shows the A minor triad on the guitar. Roman numeral notation:  $vii^{\circ} vi$ .

The most common resolution of the  $vii^{\circ}$  would be a tonic, since the root of the diminished chord is the seventh note (*ti*) of the major scale it comes from. The leading tone has a naturally strong upward pull to the tonic. So this B° triad wants to resolve up to a C major or C minor ( $vii^{\circ} \rightarrow I$  or  $i$ ) more than resolving down to A minor ( $vii^{\circ} \rightarrow vi$ ), though this is still possible. In the example below, the song *O The Deep Deep Love of Jesus* is in the key of E minor. In the last two chords of the excerpt, a D#° ( $vii^{\circ}$ ) resolves to Em ( $i$ ) (Figure 8.29).

**Figure 8.29** O the Deep, Deep Love of Jesus - Samuel Francis & Thomas Williams

G      D-F#      C E B D#      Em      Am      D#°7      Em

vast,      tin -      meas -      ured,      bound -      less      free,

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### Resolution of Augmented Triads

Augmented triads, like diminished triads, are dissonant and require resolution to a more consonant triad, either major or minor. However the resolution of augmented triads is altogether different from diminished triads. As stated before, the dissonant Aug5 is created through a chromatic alteration of a P5. This alteration is not merely hypothetical, but is usually played out in the music itself. A common context for an augmented triad is to have it succeed a major triad. In this case there is a literal chromatic alteration of a tone. For example (Figure 8.30):

**Figure 8.30** 5<sup>th</sup> is Raised By Half Step:

C      C+

T	0	1
A	2	2
B	3	3

I      I+

Augmented chords don't sound like any progression through a diatonic chord progression, but sound more like a chromatic stretching out of a stationary harmony as this "expansion" of tonic above.

Once the P5 has been expanded to a dissonant Aug5 (I—I+), the resulting tension begs the interval to resolve to something in the scale more consonant. In

most cases, this interval is resolved when the 5<sup>th</sup> of the chord moves upward or downward by a half step. When the #5 resolves upward, it resolves to a new and different chord. In most cases, the other two tones (the root and the third of both the major and augmented triads) stay the same. The succeeding triad will then be a triad built on *la* (I—I+—vi), but sometimes the third of the augmented triad will move up by half step too, creating a triad built on *la* (I—I+—IV). Yet other times, the #5 resolves downward, back to the fifth of the previous chord (I—I+—I). See the illustration below for an example of each situation (Figure 8.31).

**Figure 8.31** Augmented Chord Resolutions:

#5 resolves up:	3 and #5 resolve up:	#5 resolves back down:
C    C+    A m	C    C+    F	C    C+    C

I	I+	vi	I	I+	IV	I	I+	I
---	----	----	---	----	----	---	----	---

In this first instance, a major chord moves to its relative minor by passing through its augmented counterpart. A well-known example of this in contemporary Christian music is in the verse of Matt and Beth Redman's *Let My Words Be Few* (Figure 8.32).

**Figure 8.32** Let My Words be Few – Matt & Beth Redman

G	G+	E m/G	C
---	----	-------	---

You are God in hea - ven, and here am I on earth,

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## Practice Exercises

Identify each chord below by root name and chord quality (Figure 8.33).

**Figure 8.33** Practice Exercises:

Figure 8.33 shows two musical staves, each containing four chords. The first staff shows chords with notes G4, B4, D5; C4, E4, G4; F4, A4, C5; and B3, D4, F4. The second staff shows chords with notes G4, B4, D5; C4, E4, G4; Bb3, D4, F4; and Bb3, D4, F4.

In the staff and TAB below, write notate the chord tones, in any voicing, of the chord symbol indicated (Figure 8.34).

**Figure 8.34** Practice Exercises:

Dm	A	B <sup>°</sup>	F <sup>#</sup>
A <sup>+</sup>	D <sup>b</sup> m	G <sup>#</sup> °	E <sup>b</sup> +

Figure 8.34 shows two sets of practice exercises. Each set consists of a chord symbol above a musical staff and a TAB staff. The first set includes Dm, A, B<sup>°</sup>, and F<sup>#</sup>. The second set includes A<sup>+</sup>, D<sup>b</sup>m, G<sup>#</sup>°, and E<sup>b</sup>+. The musical staves are empty, and the TAB staves are labeled T, A, and B.

## CHAPTER IX

## FOUR-NOTE CHORDS

The three-note triads we have studied so far form the bulk of the chord vocabulary that most guitarists and keyboardists are familiar with, but an aspiring musician should not stop there. The triad is the basis for higher levels of chord complexity that can be very rewarding to learn. An artful use of more complex chords can add levels of sophistication and beauty to the simplest songs and they are integral to most popular and jazz repertoire.

**Diatonic Sevenths**

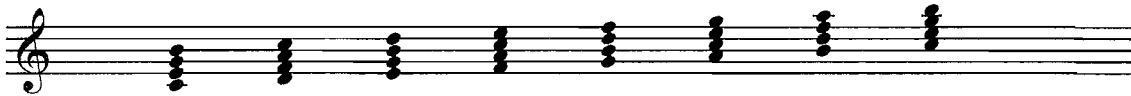
As discussed in the previous chapter, we can understand triads as resulting from a “stacking” of notes in thirds from a major or minor scale. Take the first chord in a C major scale as an example. Starting at the root, we move up by thirds in the scale from the root to include the third, and fifth of the scale. Continuing this process, we include the seventh note of the scale in the chord by extending the chord up another third. The chord C—E—G—B contains three consecutive thirds spanning the interval of a seventh, so it is called a seventh chord (Figure 9.1).

**Figure 9.1** Seventh Chord in C:

The figure displays the C7 chord in C major. The top staff shows the notes C, E, G, B on a treble clef staff. The bottom staff shows guitar fretting for strings T, A, B with fingerings 0, 0, 3 for the chord and 3, 0, 2, 3, 0, 2, 0, 1 for the scale. The notes are labeled R, 3, 5, 7 below the staff.


This same process can be applied to any note of the major or minor scale so that all seven notes of a diatonic scale are harmonized as seventh chords (Figure 9.2, 3).

**Figure 9.2** 7<sup>th</sup> Chords in C Major:



I maj7	ii7	iii7	IV maj7	V7	vi7	vii°7	I maj7
7—B	C	D	E	F	G	A	B
5—G	A	B	C	D	E	F	G
3—E	F	G	A	B	C	D	E
R—C	D	E	F	G	A	B	C

**Figure 9.3** 7<sup>th</sup> Chords in C Minor:



i7	ii°7	bIII maj7	iv7	v7	bVI maj7	bVII7	i7
7—B $\flat$	C	D	E $\flat$	F	G	A $\flat$	B $\flat$
5—G	A $\flat$	B $\flat$	C	D	E $\flat$	F	G
3—E $\flat$	F	G	A $\flat$	B $\flat$	C	D	E $\flat$
R—C	D	E $\flat$	F	G	A $\flat$	B $\flat$	C

Though there are only three chord qualities inherent in the diatonic system (major, minor, and diminished), a look at the interval content of each seventh chord will reveal four different types of seventh chords.

### Major Sevenths

Major seventh chords consist of a major triad with a M3 above the fifth that spans a M7 from root to seventh. This M7 interval is derived from the 7<sup>th</sup> scale degree of the major scale. Chords with this interval content are called “major seventh chords”, usually notated as Cmaj7, for a C chord, but sometimes C $\Delta$ 7, or CM7 (Figure 9.4).



**Figure 9.4** C Major Seventh Chord (Cmaj7):

T	0	0	3	0	2	0	1
A	0	2	3	0	2	0	1
B	3	0	2	3	0	2	0

B	R	3	5	7
G	<i>do</i>	<i>mi</i>	<i>sol</i>	<i>ti</i>
E				
C				

These chords are found on I and IV (*do* and *fa*) in major keys and the  $\flat$ III and  $\flat$ VI (*me* and *le*) in minor keys (Figure 9.5, 6).

**Figure 9.5** Maj7 Chords in C Major:

I maj7	IV maj7	I maj7
<i>do</i>	<i>fa</i>	<i>do</i>

**Figure 9.6** Maj7 Chords in C Minor:

$\flat$ III maj7	$\flat$ VI maj7
<i>me</i>	<i>le</i>

Major sevenths owe their distinct quality of sound to the M7 interval between the root and the seventh. These chords are used extensively in pop music and jazz and are often used to support a melody note that contains the seventh of the chord. The chorus of Kathryn Scott's *Hungry* offers a great example of how major seventh chords can be used to complement the melody emphasizing the seventh of each chord (Figure 9.7).

**Figure 9.7** Hungry – Kathryn Scott

Cmaj7                      Fmaj7                      Cmaj7                      Fmaj7

— ing — on — my — knees, — of — fer — ing — all — of — me. — Je — sus —

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The melody emphasizes each note of the Cmaj7 (Imaj7) chord (C—E—G—B). The third of the Cmaj7 chord is then held over to the next measure where it becomes the seventh of an Fmaj7 (IVmaj7) chord. Using seventh chords to support sevenths in the melody is a useful implementation of that harmony. It helps give the singer a pitch to reference and gives a musical arrangement more clarity.

### Minor Sevenths

Minor seventh chords are minor triads with a seventh located a minor 7th ( $\flat 7$ ) above the root, thus they contain a  $\flat 3$  and  $\flat 7$ . The m7 interval is derived from the 7<sup>th</sup> scale degree of the minor scale. These chords are called “minor sevenths” and are notated as Cm7 or sometimes Cmin7, Cmi7, and C-7 (Figure 9.8).

**Figure 9.8** C Minor Seventh Chord (Cm7):

B $\flat$	R	$\flat 3$	5	$\flat 7$
G	<i>do</i>	<i>me</i>	<i>sol</i>	<i>te</i>
E $\flat$				
C				

Minor seventh chords are found diatonically on *re*, *mi*, and *la* of major (ii7, iii7, and vi7) and *do*, *fa*, and *sol* of minor keys (i7, iv7, v7) (Figure 9.9, 10).

**Figure 9.9** m7 Chords in C Major:

ii7      iii7                      vi7  
re      mi                              la

**Figure 9.10** m7 Chords in C Minor:

i7                                      iv7      v7                              i7  
do                                      fa      sol                                      do

Minor seventh chords are the most commonly used seventh chords and, due to their lack of strongly dissonant intervals, they perhaps sound the most benign. As a result, minor seventh chords are more apt to be used interchangeably with minor triads. Just like major sevenths, these chords can be used to support a melody that may suggest a minor 7th, as in the verse of *How Great Is Our God*. In this case, the prominence of the G in the fourth bar suggests the use of an Am7 (A—C—E—G).

**Figure 9.11** How Great is Our God – Chris Tomlin, Jesse Reeves, & Ed Cash

The splen - dor or the King, \_\_\_\_\_ robed in ma - jes - ty. \_\_\_\_\_

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### Dominant Sevenths

The chord built on *sol* in major or *te* in minor, and though it is a major triad, it does not have the same type of seventh as the other major triads. This is a major triad with a m7 ( $b7$ ) above the root. These chords are known as dominant seventh

since they are built from *sol* (or the dominant) in major. Dominant sevenths are notated simply with a “7” following the root, as in C7 (Figure 9.12).

**Figure 9.12** C Dominant Seventh Chord (C7):

B $\flat$	R	3	5	b7
G	<i>do</i>	<i>mi</i>	<i>sol</i>	<i>te</i>
E				
C				

Dominant sevenths are found on the fifth degree (*sol*) in both major and minor (Figure 9.13, 14).

**Figure 9.13** Dominant 7<sup>th</sup> Chord in C Major:

V7  
*sol*

**Figure 9.14** Dominant 7<sup>th</sup> Chord in C Minor:

VII7  
*te*

The dominant seventh is a chord that deserves very special treatment, because it has a very strong character, due to the tritone between its third and

seventh. In the last chapter we found that this interval best resolves inward to a dyad. Therefore, like the diminished triad it tends to resolve to a tonic chord (I or i) or the submediant (vi) (Figure 9.15).

**Figure 9.15** Dominant Seventh Resolutions:

Figure 9.15 illustrates three examples of dominant seventh chord resolutions. Each example shows a dominant seventh chord (G7) resolving to a different chord (C, Cm, or Am). The resolutions are shown in a musical staff with a treble clef, a guitar fretboard diagram, and a solfège label. The first example shows G7 resolving to C (I), with solfège 'sol' to 'do'. The second example shows G7 resolving to Cm (i), with solfège 'sol' to 'do'. The third example shows G7 resolving to Am (vi), with solfège 'sol' to 'la'.

The dominant is the most commonly used seventh harmony in traditional music, because it has such a strong pull towards tonic, making it the ideal chord for to end a chord progression and return back to tonic in what is called a cadence. For example of a dominant seventh chord in context, look at the ending cadence of *Great Is Thy Faithfulness* (Figure 9.16).

**Figure 9.16** Great is Thy Faithfulness – Thomas Chisholm & William Runyan

Figure 9.16 shows the ending cadence of the song "Great is Thy Faithfulness". The melody is in G major, and the chords are G#7, D/A, A7, and D. The lyrics are "Great is Thy faith - ful ness, Lord, un - to me." The copyright notice is ©1923 Renewed 1951 Hope Publishing Company.

The final chords of this song are  $A7 \rightarrow D$  ( $V7 \rightarrow I$ ). Here the dominant scale degree has been harmonized into a dominant seventh chord and the melody outlines the third and  $\flat 7$  of this chord.

## Half Diminished Sevenths

The seventh scale degree in major creates a diminished triad (vii<sup>o</sup>). When a seventh is added as a M3 above the 5<sup>th</sup>, it creates a chord called the half-diminished seventh. This is one of two possibilities for diminished seventh chords,<sup>22</sup> but the half-diminished seventh is the only one that is created diatonically. It is usually notated C<sup>ø</sup>7 or sometimes Cm7<sup>b</sup>5<sup>23</sup>. In comparison to a major chord, it has a  $\flat 3$ ,  $\flat 5$ , and  $\flat 7$  (Figure 9.17).

**Figure 9.17** C Half-Diminished Seventh Chord (C<sup>ø</sup>7):

A	R	$\flat 3$	$\flat 5$	$\flat 7$
F	<i>ti</i>	<i>re</i>	<i>fa</i>	<i>la</i>
D				
B				

The half diminished seventh chord is the least common to contemporary Christian music of the four diatonic varieties of sevenths and only occurs on as a vii<sup>ø</sup>7 (*ti*) in major and ii<sup>ø</sup>7 (*re*) in minor keys (Figure 9.18, 19).

**Figure 9.18** Half-Diminished 7<sup>th</sup> in C Major:

vii<sup>ø</sup>7  
*ti*

<sup>22</sup> The fully diminished seventh is another sonority that will be discussed later.

<sup>23</sup> The half diminished seventh can also be thought of as a minor seventh chord with a flatted fifth, as a result it is sometimes notated as such, especially in jazz charts.



### Chords with Seconds, Fourths, & Sixths

Other four note chords can include any of the three remaining tones from the scale. The 2<sup>nd</sup>, 4<sup>th</sup>, and 6<sup>th</sup> scale degrees (*re*, *fa*, and *la*) are the tones not included in seventh chords (R—3—5—7), but adding these tones to the triad can add color and interest to a triad when used appropriately. The present section will discuss how chords containing these other tones are constructed and how and when they can be the most beneficial to use.

Four-note chords containing these tones have two designations: “add” chords and “sus” chords. Add chords simply add the fourth note to the triad, while sus chords replace an existing tone. The following sections will explore the structure and use of add and sus chords using these tones.

#### **Add2 or Add9**

Triads with added seconds (add2 or add9<sup>24</sup>) contain the full major triad plus the added second from major. So they are composed of scale degrees R—2—3—5 or R—3—5—9 (Figure 9.21).

**Figure 9.21** C(add2):

D	R	2	3	5
G	<i>do</i>	<i>re</i>	<i>mi</i>	<i>sol</i>
E				
C				

<sup>24</sup> In any diatonic scale, the ninth scale degree is equivalent to the second.



Chords with added seconds are very commonly used on I and IV in major keys and i, iv in minor keys, but they may be used on a variety of chords. However, they are not generally employed on half-diminished chords ( $vii^\circ$  in major and  $ii^\circ$  in minor) or on  $iii$  (*mi*) in major or  $v$  (*sol*) in minor due to the harsh dissonance created by the second only a half step away from the root (Figure 9.22, 23).

**Figure 9.22** Common (add2) Chords in C Major:

I(add2) ii(add2) IV(add2) V(add2) vi(add2) I(add2)  
do re fa sol la do

**Figure 9.23** Common (add2) Chords in C Minor:

i(add2)  $\flat$ III(add2) iv(add2)  $\flat$ VI(add2)  $\flat$ VII(add2) i(add2)  
do me fa le te do

Major add2 chords are extremely common in popular music, but the minor add2 is less common, since the half step between the second and the third creates a dissonance. Compare the sound of an A(add2) to a more dissonant Am(add2) (Figure 9.24).

As with 7<sup>th</sup> chords, add2 chords are often used to support a melody that contains this tone. David Crowder's *O Praise Him* has such a melody. At the beginning of the song, the added second of the first triad ( $B\flat$ ) is C. (Figure 9.25).

**Figure 9.24** Major add2 vs. Minor add2:

Major add2:

Minor add2:

A(add2)

A m(add2)

The figure shows two musical examples side-by-side. The left example is for the Major add2 chord, A(add2), and the right example is for the Minor add2 chord, A m(add2). Both are shown in a treble clef. The notes for A(add2) are A2, C3, E3, and F#3. The notes for A m(add2) are A2, C3, E3, and F3. Below the treble clef is a guitar fretboard diagram with three strings labeled T (Treble), A (A), and B (Bass). For A(add2), the fretting is 0 on the T string, 2 on the A string, 4 on the B string, and 0 on the low E string. For A m(add2), the fretting is 0 on the T string, 1 on the A string, 2 on the B string, and 0 on the low E string.

**Figure 9.25** O Praise Him – David Crowder

The figure shows a musical score for the song "O Praise Him" by David Crowder. The melody is written in a treble clef with a key signature of one flat (Bb) and a 4/4 time signature. The melody consists of a series of eighth and quarter notes. Three chords are indicated above the staff: Bb2, F/A, and Eb. The lyrics are: "Turn your ear to hea - ven and hear the noise in - side." The copyright notice is ©2003 worshiptogether.com songs.

## Sus2

In the case of the sus2 chord, the third of the triad is replaced by the second degree of the scale. The chord then consists of tones R—2—5, making it only a three-note chord. The third of the chord is missing and since this tone defines the triad as major or minor, a quality is not attached to them. Having no third, these chords perhaps sound more akin to power chords than triads.<sup>25</sup> Listen to the sound of the Asus2 chord and note the general “openness” in the sound contrasted to the A(add2), shown earlier, which consisting of four notes, has a richer sound (Figure 9.25).

<sup>25</sup> This may have contributed to the fact that they are used extensively in popular music alongside the power chord.

**Figure 9.26** Csus2:

D	R	2	5
G	<i>do</i>	<i>re</i>	<i>sol</i>
C			

These chords, though they have quite a different character than add2's may generally be used on all the same scale degrees as add2 chords in both major and minor keys.

A good use of this chord is to create some harmonic variation in a musical phrase that has a single chord in the accompaniment. What is a prolongation of a single tonic (*do*) chord in the ending of Billy Foote's *You Are My King*, is given a more interesting variation of the D major triad and Dsus2 through the use of that chord. This progression has movement and keeps the harmony from becoming stagnant (Figure 9.27).

**Figure 9.27** You are My King - Billy Foote

D	Dsus2	D	Dsus2
---	-------	---	-------

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### Add4 Chords

Just as the 2<sup>nd</sup> degree of the scale may be added to the triad to create a sonority consisting of four notes, so may the 4<sup>th</sup> degree (*fa*) of the scale be added to create an add4 chord (R—3—4—5), however this added tone creates a lot more dissonance for major chords (Figure 9.28).

Figure 9.28 C(add4):

G	R	3	4	5
F	<i>do</i>	<i>mi</i>	<i>fa</i>	<i>sol</i>
E				
C				

In major and minor keys, the add4 can be used on nearly every diatonic chord, though it is generally avoided on diminished triads. Also, on triads built from *fa* in major (IV) and *le* in minor (VI) the diatonic fourth is an aug4 away from their roots, therefore they are designate IV(#4) and VI(#4), respectively (Figure 9.29, 30).

Figure 9.29 Add4 Chords in C Major:

I(add4)	ii(add4)	iii(add4)	IV(#4)	V(add4)	vi(add4)	I(add4)
<i>do</i>	<i>re</i>	<i>mi</i>	<i>fa</i>	<i>sol</i>	<i>la</i>	<i>do</i>

Figure 9.30 Add4 Chords in C Minor:

i(add4)	III(add4)	iv(add4)	v(add4)	VI(#4)	VII(add4)	i(add4)
<i>do</i>	<i>me</i>	<i>fa</i>	<i>sol</i>	<i>le</i>	<i>te</i>	<i>do</i>

With add4 chords, the dissonance created by the presence of the fourth is more pronounced in the major chord than the minor, opposite that of the add2 (Figure 9.31).

**Figure 9.31** Major add4 vs. Minor add4:

Major add4: A(add4)                      Minor add4: Am(add4)

The figure shows two chord diagrams side-by-side. The first is for A(add4) and the second is for Am(add4). Each is shown with a treble clef staff, a bass staff, and a guitar TAB staff. The A(add4) chord has notes A2, C#3, E4, G#4, and A5 on the guitar strings. The Am(add4) chord has notes A2, C3, E4, G4, and A5 on the guitar strings.

With major add4 chords, the dissonance created by the half step between the third and fourth can seem to clash too strongly, but in certain instances, the context can make this dissonance appealing. Add4 chords are often used in popular music in much of the same ways an add2 or sus2 chords are used. They can be used to create more interest in a phrase that contains a single chord and they are especially fitting if the added 4<sup>th</sup> is supporting a 4<sup>th</sup> in the melody. Also, by means of common tones between chords, they can be given sufficient context. This occurs when a preceding or succeeding chord to the add4 chord contains the same note as the fourth. This occurs in the opening chord progression of *God of Wonders* (Figure 9.32).

**Figure 9.32** *God of Wonders* – Marc Byrd & Steve Hindalong

The figure shows a musical score for the opening of 'God of Wonders'. The key signature has three flats (Bb, Eb, Ab) and the time signature is 4/4. The melody is written on a treble clef staff. Chord symbols are placed above the staff: Ebadd4, Fm7, Db2, Ebadd4, Fm7, and Db2. Below the staff, the lyrics are: 'Lord of all \_\_\_ cre-a - tion, \_\_\_ of wat-er, earth, \_\_\_ and \_\_\_ sky, \_\_\_'.

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Here, the Eb(add4) chord (Eb—G—Ab—Bb) shares its fourth (Ab) in common with the succeeding chord Fm7 (F—Ab—C—Eb). This common tone link provides the context needed to make what would be a clashing dissonance, an appealing one.

The example below is one instance where this is possible (Figure 9.33).

**Figure 9.33** God of Wonders – Marc Byrd & Steve Hindalong

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**The #4 Chord**

This chord is more internally dissonant than the other chords that have fourths that lie a P4 from the root, but this chord works well when used in the right context. It can be used to good affect in Matt Redman's *Call To Worship*, where the melody emphasizes the #4 degree of the chord. It should be noted that though this song is in the key of E minor, it modulates to momentarily to A minor in the bridge, where an F major chord is VI in that key (Figure 9.34).

**Figure 9.34** Call To Worship – Matt Redman

We're climbing up the mountain of the Lord, to - wards Your ho-ly place, and ev-'ry step is praise.

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**Sus4**

The suspended 4<sup>th</sup> chord is probably the most commonly used chord of any add or sus variety. With this chord, just like the sus2, the 3<sup>rd</sup> is replaced by the 4<sup>th</sup> of the chord, thus comprising of chord tones R—4—5 (Figure 9.34). This chord can be used in a variety of ways in music, however its most common use is as a resolution from the sus4 to the basic triad. In this case, the chord starts as a suspended chord and resolves to the triad when the 4<sup>th</sup> degree moves down to the 3<sup>rd</sup> of the chord (Figure 9.35).

Figure 9.35 Csus4:

**G      R                      4    5**  
**F      do                      fa    sol**  
**C**

Figure 9.36 Suspended Fourth Resolution:

A sus4                      A

**4                      3**  
**fa                      mi**

This can be seen in any number of songs, but in the chorus of Paul Baloche and Brenton Brown’s *Hosanna (Praise is Rising)*, it occurs plainly in the melody (Figure 9.37).

Figure 9.37 Hosanna (Praise is Rising) – Paul Baloche & Brenton Brown

D                      G sus4                      G                      Em7

Ho - san - na,                      Ho - san - na, \_

© 2005, 2006 Integrity’s Hosanna! Music

It can also be used in a variation with the basic triad, as in another song co-written by Brenton Brown. It supports a fourth in the melody as well (Figure 9.38)

**Figure 9.38** Everlasting God – Brenton Brown & Ken Riley

$B^b$ 
 $B^b_{sus4}$ 
 $B^b$ 
 $B^b_{sus4}$

Strength will rise as we wait \_\_\_\_\_ up - on the Lord, we will wait

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### Add6 Chords

Chords with added sixths (R—3—5—6) include the sixth scale degree from major and are most often notated without “add”. So a C major or C minor chord with a sixth would be C6 or Cm6, respectively. Since the sixth is taken from the major scale, both of these chords will contain an A ♯ (Figure 9.39, 40).

**Figure 9.39** C6:

	A	R	3	5	6
	G	<i>do</i>	<i>mi</i>	<i>sol</i>	<i>la</i>
	E				
	C				



**Figure 9.40** Cm6:

A  
G  
E  
C

A R 3 5 6  
do re me sol la

Sixths may be added to a variety of chords in both major and minor (Figure 9.41, 42).

**Figure 9.41** Add6 Chords in C Major:

I6 ii6 IV6 V6 vi6 I6  
do re fa sol la do


**Figure 9.42** Add6 Chords in C Minor:

i6 bIII6 iv6 bVI6 bVII6 i6  
do me fa le te do

The added 6<sup>th</sup> is probably the least common “add” chord in popular music and jazz, though it is used very effectively in a number of specific situations. Most obviously it can be used to support a melody that contains this pitch, as in the beginning of *Great Is Thy Faithfulness* (Figure 9.43).

**Figure 9.43** Great is Thy Faithfulness – Thomas Chisholm & William Runyan

D D+ Gmaj7 G6 A7 G/B A7 G/D D




Great is Thy faith - ful ness, O God my Fa - ther,

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The sixth can also be arrived at in a chord progression through descending chromatic line that goes from the root to the sixth (Figure 9.44).

**Figure 9.44** Chromatic Descent on A:

A Amaj7 A7 A6




I Imaj7 I7 I6

do ti te la

This motif can sometimes be used during a prolongation of a single chord, in this case A major, but it can also be used to substitute a different chord progression. Chord substitution is a topic that will be discussed in more detail later, but for now listen to how this technique can be used to substitute the usual chord progression to Israel Houghton’s *Lord You Are Good* (Figure 9.45, 46).

**Figure 9.45** Lord You Are Good – Israel Houghton

G D/G D m/G C/G



Lord, you are good and Your mer-cy en-dur-eth for - ev - er.

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**Figure 9.46** Lord You Are Good – Israel Houghton

G                                      G maj7                                      G7                                      G 6

Lord, you are good and Your mer-cy en-dur-eth for - ev-er.

T	3	3	3	3
A	4	4	4	4
B	4	4	3	2
	3	3	3	3

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One marked difference between 6<sup>th</sup> chords and the other add and sus chord varieties, is that there is no sus6 chord. In the case of sus2 and sus4 chords, the third of the chord is replaced by the neighboring tones of the scale (second or fourth degrees) and may resolve by step, either up or down, to the third. However, the sixth degree, being 5 half steps away from the third, is in no position to resolve smoothly to the third.

### **Practice Exercises**

For each of the exercises below where a chord is notated, identify the four-note chord by root, quality, and the fourth tone (e.g. maj7, add2, #4, add6, etc.). For examples where only a chord symbol is indicated, notate the correct pitches on the staff (Figure 9.47).

**Figure 9.47 Practice Exercises**

Emaj7



Gm(add9) C(#4)



B<sup>b</sup>sus4 B sus2



Dadd4 C#o7



The image displays four musical staves, each representing a different chord exercise. Each staff begins with a treble clef and a key signature of one flat (B-flat). The first staff shows the Emaj7 chord in four positions: a closed triad in the first measure, an open triad in the second, a dyad in the third, and a dyad in the fourth. The second staff shows Gm(add9) in the first measure and C(#4) in the second. The third staff shows B<sup>b</sup>sus4 in the first measure and B sus2 in the second. The fourth staff shows Dadd4 in the first measure and C#o7 in the second. The notes are represented by black dots on the staff lines.

## CHAPTER X

### FURTHER CHORD EXTENSIONS

This chapter will discuss more complex harmonies that include chords that can include up to five, six, and even seven tones – the whole scale in one chord. These chords are used freely in classical music and jazz, but are not conventional in popular music. However, as such, they have the capacity to turn a plain and predictable triad into a chord that, in its non-conventionality, has the potency to express extremes spanning spiritual depths of sorrow and pain to divine sublimity, ecstasy, and mystery. Surely, attaching such enigmatic chords to even more enigmatic concepts wholly in realm of the subjective, but as an artist, this the world we live in.

However, there are certainly more practical considerations concerning the strong character of the harmonies we will discuss. As we progress through more expanded chords, the harmony becomes increasingly abstracted from the sound of the root and the core quality of the original triad. Also, as more tones of the scale pile up in one harmony, the internal dissonance of the chord also increases, making the application of some theoretical possibilities difficult. Therefore, in order to “winnow out the chaff from the wheat” we will use theory to illuminate what is permissible, while giving special attention to what is beneficial.

#### **Chord Extension**

Further chord extensions are added in the same manner that the seventh was added to the triad, by stacking notes by intervals of thirds. After the seventh has been added to a triad (R—3—5—7), the remaining scale degrees (2, 4, and 6) may be added in triadic order.. Since these tones are stacked onto a triad above the seventh, they are not called second, fourth, and sixth, as they were when they were

added to the triad, but ninth, eleventh, and thirteenth, now that they are added above the seventh. This is an important distinction, since the sounds of these chords are quite different from the four-note add and sus varieties.

Let us return the previous concept that intervals extend up thirteen notes from the root. Progressing by thirds through this spectrum of intervals, we are able to create a chord that can include up to seven pitches, every note of the diatonic scale (Figure 10.1).

**Figure 10.1** Chord Extension:

R	3	5	7	9	11	13
<i>do</i>	<i>mi</i>	<i>sol</i>	<i>ti</i>	<i>re</i>	<i>fa</i>	<i>la</i>

Recalling the previous chapter on seventh chords, we found there were four types of sevenths: major sevenths (Cmaj7), minor sevenths (Cm7), dominant sevenths (C7), and half-diminished sevenths (C<sup>ø</sup>7). All four of these chords may in theory be expanded to include more tones, though only three of them do in practice (diminished chords are generally considered too dissonant to carry any other tones beyond the seventh). Furthermore, there are limited practical applications within these three types, where some extensions create too much dissonance to be used. We will give priority to those chords that are practical and by omission reveal those chords that are not. As has been done in former chapters, we will see on what scale degrees in major or minor these chords are generally employed. Also, we will also begin to uncover some chord extensions that may be employed with chromatic alteration (using other pitches than those diatonic to the key).

## Ninth Chords

The first chord extension above the seventh is the ninth. Moving up a third from the seventh creates the interval of a M9 between the root and the ninth.

### Major Ninth Chords

When appended to a major seventh chord, it creates a major ninth (maj9) (Figure 10.2).

**Figure 10.2** C Major Ninth (Cmaj9):

The figure shows the C Major Ninth (Cmaj9) chord and its fingering. The top staff is a treble clef with a chord of Cmaj9 (C-E-G-Bb-A) and a melodic line starting on C4 and moving up stepwise to A5. The bottom staff is a guitar fretboard diagram for strings T, A, and B. The fret numbers are: T (0, 1, 3, 0, 1, 3, 5), A (0, 2, 3, 0, 2, 0, 1, 3, 0, 1, 3, 5), and B (3, 0, 2, 3, 0, 2, 0, 1, 3, 0, 1, 3, 5).

D	R	3	5	7	9
B	<i>do</i>	<i>mi</i>	<i>sol</i>	<i>ti</i>	<i>re</i>
G					
E					
C					

Major ninth chords are commonly employed on both I and IV chords in major keys and  $\flat$ III and  $\flat$ VI in minor. They work so well, that unless the ninth or seventh clashes too strongly with the melody, they maybe used interchangeably with these triads (Figure 10.3,4).

**Figure 10.3** Major Ninth Chords in C Major:

The figure shows three major ninth chords in C major: I maj9 (Cmaj9), IV maj9 (Fmaj9), and I maj9 (Cmaj9). The solfège syllables are: *do* for Cmaj9, *fa* for Fmaj9, and *do* for Cmaj9.

**Figure 10.4** Major Ninth Chords in C Minor:

$\flat$ III $\text{maj}9$                        $\flat$ VI $\text{maj}9$   
*me*    *le*

A  $\text{maj}9$  on the IV chord ( $\text{Fmaj}9$ ) in Kathryn Scott's *Hungry* would fit nicely considering that the ninth (G) is already present in the melody (Figure 9.5).

**Figure 10.5** *Hungry* – Kathryn Scott

$\text{Cmaj}7$                        $\text{Fmaj}9$                        $\text{Cmaj}7$                        $\text{Fmaj}9$

— ing — on — my — knees, —                      of — fer — ing — all — of — me. —                      Je — sus —

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### **Minor Ninth Chords**

Likewise, when the ninth is added to a  $\text{Cm}7$  seventh chord, the resulting harmony is called a  $\text{Cm}9$  (variants  $\text{Cmin}9$ ,  $\text{C-}9$  do occur). It is important to note that though the chord is called “minor ninth,” the ninth is created by the interval of a major ninth as in  $\text{maj}9$  chords (Figure 10.6). Minor ninth chords occur frequently on *re* and *la* ( $\text{ii}9$  and  $\text{vi}9$  in major keys) and *do* and *fa* in minor keys ( $\text{im}9$  and  $\text{ivm}9$ ) (Figure 10.7, 8). *Lead Me To The Cross* by Brooke Fraser is in the key B minor, making the  $\text{Em}9$  employed in the third measure of the excerpt a  $\text{ivm}9$  in that key. This chord is necessary to support the ninth ( $\text{F}\sharp$ ) in the melody on that measure (Figure 10.10).





### ***Dominant Ninth Chords***

The dominant variety of seventh (C7) may also include the 9<sup>th</sup>, creating a dominant 9<sup>th</sup> chord (C9). However, several other chromatic alterations to the ninth also are employed in various musical contexts. These include the C7(#9) and C7(b9). A great many other alterations have been used specifically on dominant chords, too many to be covered presently. However, these “altered dominants” are used extensively in classical, blues, and jazz styles, but occasionally make their way into pop music and a few more will be discussed as we progress through the chapter. .

The diatonic version of the dominant ninth is that which, like the other ninth chords discussed thus far, has a M9 interval above the root (Figure 10.10).

**Figure 10.10** C Dominant Ninth (C9):

D	R	3	5	7 <sup>b</sup>	9
B <sup>b</sup>	do	mi	sol	te	re
G					
E					
C					

Another type of dominant chord, having an altered ninth is the dominant seventh with a sharp ninth (Figure 10.11).

**Figure 10.11** C Dominant Seventh, Sharp Ninth (C7#9):

D#	R	3	5	b7	#9
Bb	<i>do</i>	<i>mi</i>	<i>sol</i>	<i>te</i>	<i>ri (or me)</i>
G					
E					
C					

Also, there is the dominant seventh with a flat ninth (Figure 10.12).

**Figure 10.12** C Dominant Seventh, Flat Ninth (C7b9):

Db	R	3	5	b7	b9
Bb	<i>do</i>	<i>mi</i>	<i>sol</i>	<i>te</i>	<i>ra</i>
G					
E					
C					

These various dominant ninth chords have their contexts. For the most part, the unaltered dominant 9<sup>th</sup> is the one used in major keys (Figure 10.13).

**Figure 10.13** Dominant Ninth Chord in C Major:

V9  
*sol*

While the unaltered dominant ninth is diatonic to both major and minor, the altered dominant ninths tend occur in minor keys since these altered tones are found in the minor. For instance, the  $\sharp 9$  on the dominant chord is enharmonic to the  $\flat 7$  of the key. Also, the  $\flat 9$  is the same note as the  $\flat 6$  of the key (Figure 10.14).

**Figure 10.14** Dominant Ninth Chords in C Minor:<sup>26</sup>

V9   V7( $\sharp 9$ )   V7( $\flat 9$ )  
*sol*   *sol*   *sol*

A special consideration for dominant chords, especially altered dominants, like the  $7(\sharp 9)$ , is their application in blues music and those genres influenced by the blues (like gospel and funk). Blues music relies heavily on use of the dominant chords on tonic, subdominant, and dominant chords (I7, IV7, and V7). Therefore, altered dominants do occur on these tones as well (Figure 10.15).

---

<sup>26</sup> Note that the dominant chord diatonic to minor keys is the  $\flat VII$  chord, *te*. However, since extensions on dominant chords sound so much like a V7 chord, dominants are generally reserved for the  $\flat VII$  only during modulation to the relative major ( $\flat VII$  is V in the relative major). Therefore, the dominant seventh and its extensions are used more commonly on the dominant scale degree, *sol*, in minor keys instead. Through modal borrowing, the usual minor  $v7$  is swapped for the dominant V7 of major keys. See Chapters XII & XV for more in depth discussions of modal borrowing and modulation.

**Figure 10.15** Dominant Chord in C Major (Blues):

I7(#9)                      IV7(#9)    V7(#9)                      I7(#9)  
 do                              fa                      sol                              do

Though there are perhaps too few “bluesy” worship songs, *My Redeemer Lives* by Reuben Morgan offers a rare example. Here, there are dominant chords on both the I and IV chords (E7 and A7), which in this arrangement have been changed to be unaltered ninths, making this already bluesy song a “funkier” sound through the use of dominant ninths (Figure 10.16).

**Figure 10.16** My Redeemer Lives – Reuben Morgan

E9                      A9                      E9                      A9

I know He's res-cued my soul. \_\_\_ His blood has co-vered my sin. \_\_\_ I be - lieve

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Though the melody of this song would preclude the use of other altered dominants (the G# in the melody would clash strongly), if nowhere else, an altered dominant may be used effectively as a final tonic chord, I7(#9). After a ritard (*rit.*) on the dominant, B7, ending with an E7(#9) ends with the bluesy punch, typical in this style (Figure 10.17).

**Figure 10.17** My Redeemer Lives – Reuben Morgan

A                      C#m7                      B7                      I: 7(#9)

my Re - deem - er lives. \_\_\_

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## Eleventh Chords

The next extension after the ninth is the eleventh. At this point, the amount of dissonance created by the building up of tones makes viable options limited to only a few applications for major, minor, and dominant chords. These are the major seventh sharp, eleventh chord; minor eleventh chord; and dominant seventh, sus eleventh.

### Major Seventh, Sharp Eleventh Chords

The major seventh, sharp eleventh is an altered major chord. Having a raised eleventh is the only viable application of the eleventh on a major chord (that is not dominant), because the eleventh, which is enharmonic to the fourth (*fa*) has a strong dissonance with the third. Though this is tolerated to some extent with add4 chords, the amount of dissonance created by the seventh and ninth together make an eleventh using *fa* unusable (Figure 10.18).

Figure 10.18 C Major Seventh, Sharp Eleventh (Cmaj7(#11)):

F#	R	3	5	7	(9) <sup>27</sup>	#11
(D)	<i>do</i>	<i>mi</i>	<i>sol</i>	<i>ti</i>	( <i>re</i> )	<i>fi</i>
B						
G						
E						
C						

This chord appears naturally with on *fa* in major, IV, as well as *le* in minor,  $\flat$ VI. As the tonic chord in major, this occurs frequently in jazz, but not often in

<sup>27</sup> Though this chord is called maj7( $\sharp$ 11), the presence of the ninth (*re*) is permitted, but not required.

popular music styles. As part of the  $\flat$ III chord in minor keys, it is perhaps used more frequently, but in contexts where the  $\natural$  6 (*la*) from major is employed through modal borrowing (discussed in Chapters XII and XIV) (Figure 10.19, 20).

**Figure 10.19** Major Seventh, Sharp Eleventh Chords in C Major:

Figure 10.19 shows three chords in C Major on a single staff. The first chord is  $I$ maj7(#11) with the note *do* below it. The second chord is  $IV$ maj7(#11) with the note *fa* below it. The third chord is  $I$ maj7(#11) with the note *do* below it. Each chord is represented by a vertical stack of notes on the staff.

**Figure 10.20** Major Seventh, Sharp Eleventh Chords in C Minor:

Figure 10.20 shows two chords in C Minor on a single staff. The first chord is  $\flat III$ maj7(#11) with the note *me* below it. The second chord is  $\flat VI$ maj7(#11) with the note *le* below it. Each chord is represented by a vertical stack of notes on the staff.

The song *More Love, More Power*, in the key of G minor, could easily employ an  $E\flat$ maj7(#11) in place of the standard  $E\flat$ maj7 ( $\flat VI$ Imaj7) in the second bar (Figure 10.21).

**Figure 10.21** More Love, More Power – Jude Del Hierro

Figure 10.21 shows the first five bars of the song *More Love, More Power* in G minor. The chords are  $Gm9$ ,  $E\flat$ maj7(#11),  $Dm7$ ,  $Gm9$ , and  $F\#G$ . The lyrics are: "More love, \_\_\_ more pow er, \_\_\_ more of You \_\_\_ in my \_\_\_ life. \_\_\_".

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### Minor Eleventh Chords

Because of the  $\flat 3$  (*me*) found in minor chords, the dissonance created by the simultaneous presence of *fa* and *me* is less problematic than with major chords and may thus be employed more freely (Figure 10.22).

Figure 10.22 C Minor Eleventh (Cm11):

F	R	$\flat 3$	5	$\flat 7$	9	11
B $\flat$	<i>do</i>	<i>me</i>	<i>sol</i>	<i>te</i>	<i>re</i>	<i>fa</i>
G						
E $\flat$						
C						

These chords are used in major keys, without much difficulty, on *re* and *la* (ii11 and vi11, respectively). Also, in minor keys, they may be used on *do* and *fa* (i11 and iv11) (Figure 9.23, 4).

Figure 10.23 Minor Eleventh Chords in C Major:

ii11	vi11
<i>re</i>	<i>la</i>

Figure 10.24 Minor Eleventh Chords in C Minor:

i11	iv11
<i>do</i>	<i>fa</i>



Israel Houghton & Michael Gungor's *Friend of God* employs a ii11 on F#m11 in the fifth bar (Figure 10.25).

**Figure 10.25** Friend of God – Israel Houghton & Michael Gungor

Who am I that You are mind - ful of me? That You hear  
 me when I call?

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**Dominant Seventh, Sus Eleventh Chords**

Dominant chords with elevenths avoid dissonance between *mi* and *fa* by leaving out the third of the chord, making it a sus chord. Thus dominant harmonies of these types are called dominant seventh, sus eleventh chords. Typologies vary and may include 7sus11, sus11, 7sus4, 9sus4, and 11(no3), amongst others. In every case, the chord symbol is implying the same group of tones (Figure 10.26).

**Figure 10.26** C Seventh, Sus Eleventh (C7sus11):

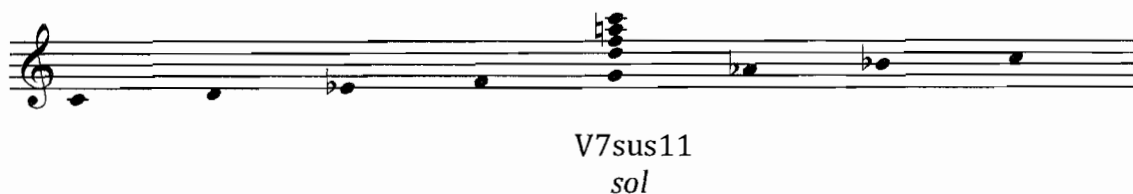
F R (5) B D F  
 D do (sol) te re fa  
 B  
 (G)  
 C

Dominant harmonies are generally reserved for the V chord (*sol*) in major and the modally borrowed V in minor keys (Figure 10.27).

**Figure 10.27** Dominant Seventh, Sus Eleventh Chord in C Major:



**Figure 10.28** Dominant Seventh, Sus Eleventh Chord in C Minor:



Dominant 7sus11 chords are generally reserved for  $V \rightarrow I$  or  $V \rightarrow i$  cadences. Remember that a cadence is the pattern of chords that ends a phrase of music. The end of the hymn, *Holy, Holy, Holy* provides a fine example for how a V7sus11 chord is used in such contexts (Figure 10.29).

**Figure 10.29** Holy, Holy, Holy – John Dykes & Reginald Heber

D      D/F# D7/F#    G      D      Em/G    Asus11      D

God      in    three    per - sons,      bless - ed    Tri - ni - ty!

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### Thirteenth Chords

The thirteenth chord is the furthest extension possible in diatonic harmony and with these chords, all the seven diatonic tones of the scale are available to be

used in a single chord. As we found with add6 chords in the last chapter, the thirteenth (*la*) is taken from the major scale for both major and minor chords. Thus the interval that was a M6 above the root in an add6 chord is not a M13 above the root in thirteenth chords.

As this interval does not create any significant dissonance with the chord extensions that we've seen thus far, the thirteenth may simply be appended to any of the chords mentioned above. As a result, it simply be redundant to discuss all the many varieties of thirteenth chord, but for illustration, below is a depiction of a minor thirteenth chord. Notice that the thirteenth has been raised from the diatonic  $\flat 13$  ( $\flat 6$ ) of minor to the  $\natural 13$  from major (Figure 10.30).

**Figure 10.30** C Minor Thirteenth (Cm13):

T								
A								
B								
	A	R	3 $\flat$	5	7 $\flat$	9	11	13
	F	<i>do</i>	<i>me</i>	<i>sol</i>	<i>te</i>	<i>re</i>	<i>fa</i>	<i>la</i>
	D							
	B $\flat$							
	G							
	E $\flat$							
	C							

Below is an arrangement of *Let My Words Be Few* that uses a Cm13 effectively in the fourth bar (Figure 10.31). As we've seen, the more chord extensions that are added to a single chord, the more abstracted from the original harmony the chord becomes. Therefore, use your ear and decide how and when a thirteenth chord is to be used.



- 1) **Root** – The most important tone in any chord is the root. The root must be played in order for the chord to be readily recognizable as a chord built on that scale degree.<sup>28</sup>
- 2) **Third** – Also the defining note between major and minor triads is the third. The third is the tone that is different between the two and gives it its essence as having major or minor quality.
- 3) **Thirteenth** – This tone is very important to the chord as it what makes a Cm13 chord a thirteenth chord, as opposed to any other type of Cm.
- 4) **Seventh** – The seventh is another defining tone, perhaps as important as the thirteenth.
- 5) **Ninth** – Equally important to the chord as the eleventh, kept or omitted according to preference
- 6) **Eleventh** – The eleventh is not nearly as important as the others, as it is implied by the presence of the thirteenth. It may be omitted at will, based on preference
- 7) **Fifth** – With the exception of diminished, augmented chords, and those with altered fifths, where this tone plays a more defining role, this tone is the least important and usually the first to be omitted from a chord.

---

<sup>28</sup> Note that this doesn't mean that in an ensemble situation, every musician must play the root of the chord. This tone need only be heard in the collective sound of a band. Oftentimes this note is covered by the bass guitar or the left hand of the piano.

**Practice Exercises**

For the exercises below, identify what chord is notated in the staff and on the tablature (TAB need not match staff notation voicing precisely). For chords indicated by TAB, identify the chord and notate it in the staff above (Figure 10.32).

**Figure 10.32** Practice Exercises

T A B		4 3 4 2 3	

T A B		7 8 9 7 8	0 1 2 3

T A B	7 6 5 4 3		0 1 2 3 2

T A B	5 6 7 7		0 1 2 3 2

## CHAPTER XI

### SLASH CHORDS

Until now, the various chords we have discussed have all been arranged (or voiced) so that the root of the chord is the lowest note (the bass note<sup>29</sup>), but this is not always the case in a real musical context. Oftentimes another note from the chord can be used as the bass note to create a certain effect in the music. This doesn't fundamentally change the chord, but the note that is in the bass has a big impact on the character of the chord as well as the listener's expectations as to what is going to happen next in the music.

#### **Chord Inversion (Slash Chords)**

The standard arrangement of notes in a chord is to have the root in the lowest register of the chord, called *root position*, but when a note other than the root is placed in the lowest register of a chord, this is called *inversion*. Because a triad is made up of three different notes, any of these tones can act as a bass note. So in a single triad, there is root position plus two possible inversions. Take the C major triad for example (Figure 11.1).

The first voicing, root position, has root note in the bass, and this is the standard or assumed voicing for a chord. So, when a chord symbol appears without any slash to designate inversion, the chord is voiced in root position. When the third is placed in the bass, this is called 1<sup>st</sup> inversion, and when the fifth is in the bass, it is 2<sup>nd</sup> inversion. Inversions are reflected in lead sheet notation through slash chord symbols. Here, a slash divides the type of chord (e.g. Cm, C7, Asus11, etc.)

---

<sup>29</sup> Though the bass note is often played literally by a bass, the term simply refers to the lowest sounding note of a given chord. Thus, the bass note in a piccolo duet is simply the lower of the two notes.

from what note is in the bass. The bass note is always either to the right of the slash or directly beneath it.

**Figure 11.1**

Root Position:	1 <sup>st</sup> Inversion:	2 <sup>nd</sup> Inversion:
C	C E	C/G
I	I/3	I/5
<i>do</i>	<i>mi</i>	<i>sol</i>

This may be all that one needs to know to interpret slash chords in lead sheet notation, however each type of inversion sounds very different and has different effects on (and roles within) the music. Therefore, if you intend to be in the business of writing and arranging music, you had best become acquainted with what and how chord inversion and slash chords are used. The following section will discuss each type of chord inversion with respect to its role in music as well as how slash chords are used to shape a musical composition.

### Root Position

This is the most common form for a chord to be in: in this state a chord sounds the most stable. Though no chord other than the tonic chord is entirely stable (as we will see in Chapter XIII), root position is the most stable. The chord, in manner of speaking, is “standing on two feet.” Consequently, many songs contain chords only in root position, no inversions. In the original arrangement, all the chords of *Blessed Be Your Name* are played in root position (Figure 11.2)



**Figure 11.2** Blessed be Your Name – Matt & Beth Redman

B                      F#                      G#m                      E

Bless - ed \_\_\_ be \_\_\_ your \_\_\_ name \_\_\_ in the \_\_\_ land that \_\_\_ is \_\_\_ plen - ti - ful, \_\_\_ where Your

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I                      V                      vi                      IV  
do                      sol                      la                      fa

Root position, as the most stable voicing, is almost always the voicing of choice for the end of a song. Try playing the final chord of any song in inversion; it won't sound finished. Consequently, chord inversions are often used to provide forward momentum that may be lacking in root position chords.

### First Inversion

It is very common for a chord to be played in 1<sup>st</sup> inversion. Here, a slash chord is used to show that the third of the chord is sounded in the bass. A 1<sup>st</sup> inversion chord often replaces a root position chord when, in so doing, the inverted chord is next to another chord whose bass note is a step away, helping to create a melodic contour for the bass line. This is often achieved when root position chords are paired with inverted chords to generate an ascending or descending stepwise progression of chords. The chorus of Tim Hughes' *Here I Am To Worship* is a great example of how 1<sup>st</sup> inversion chords can greatly enhance a chord progression (Figure 11.3).

**Figure 11.3** Here I Am to Worship – Tim Hughes

E                      B/D#                      E/G#                      A

worship, here I am to bow down, here I am to say that You're my \_\_\_ God. \_\_\_ And You're al-together

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I                      V/3                      I/3                      IV  
do                      ti                      me                      fa

It is easy to see, when examining the contour of this bass line, how the 1<sup>st</sup> inversion chords give direction to the chord progression by allowing the bass line to move in a more linear fashion (Figure 11.4).<sup>30</sup>

**Figure 11.4** Here I Am To Worship – Tim Hughes

E                      B/D#                      E/G#                      A

worship, here I am to bow down, here I am to say that You're my \_\_\_ God. \_\_\_ And You're al-together

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In this case, the B/D# in the second bar of the chorus creates a stepwise descent from the initial E chord. This is answered by an ascending stepwise ascent from the E/G# to the A. Here, there is smooth connectivity between chords that is not readily apparent in a chord progression containing only root position chords. Compare that to the same chord progression with only root position triads. The bass line created by this chord progression seems to jump around almost aimlessly in comparison to the earlier example (Figure 11.5).

<sup>30</sup> Though the example given depicts the bass line moving in whole notes, it is assumed that this is the basic structure of the bass line. A performer or ensemble can take this as the platform for how to interpret the harmony and improvise a part.

**Figure 11.5** Here I Am To Worship - Tim Hughes

E                      B                      E                      A

worship, here I am to bow down, here I am to say that You're my God. And You're altogether

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There are opportunities throughout contemporary Christian music repertoire to create a certain effect in the music by altering the chords via inversion. Matt and Beth Redman's *Blessed Be Your Name* is made up of a chord progression that remains largely the same throughout the entirety of the song. Compare the verse progression to that of the chorus (Figure 11.6).

**Figure 11.6** Blessed Be Your Name - Matt & Beth Redman

Verse:

B                      F#                      G#m                      E

Bless - ed be your name in the land that is plen - ti - ful, where Your

I                      V                      vi                      IV  
do                      sol                      la                      fa

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Chorus:

E                      B                      F#                      G#m                      E

say, "Blessed be the name of the Lord, bless-ed be Your name. Bless-ed be the

I                      V                      vi                      IV  
do                      sol                      la                      fa

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The verse progression (I→V→vi→IV) or (*do—sol—la—fa*) remains consistent throughout the entirety of the song. If you find that, after time, this song sounds redundant, an easy solution could be to add more melodic interest and connectivity to the harmony by employing inverted chords. This is a simple solution, as they maintain the harmonic structure of a song without altering it too dramatically (as some chord substitutions might), yet they create enough variation to make such an interpretation sound distinct (Figure 11.7).

**Figure 11.7** Blessed Be Your Name – Matt & Beth Redman

B                      F#/A#                      G#m                      E

Bless - ed \_\_\_ be \_\_\_ your \_\_\_ name \_\_\_ in the land that \_\_\_ is \_\_\_ plen - ti - ful, \_\_\_ where Your

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I	V/3	vi	IV
<i>do</i>	<i>ti</i>	<i>la</i>	<i>fa</i>

Here, playing a 1<sup>st</sup> inversion chord on the V chord to create a V/3 (V chord with the third in the bass), connects the I bridges the interval between the I and the vi chord's bass notes in a three-note stepwise descent (*do—ti—la*).<sup>31</sup>

## Second Inversion

2<sup>nd</sup> inversion chords are those that have the fifth of the chord in the bass. These inversions are quite useful as well, though not as commonly used as 1<sup>st</sup> inversions, since they sound even less stable. Second inversion chords are most often used in two ways: 1) as part of a stepwise progression in the bass or 2) played directly before a root position chord whose root is the same as the bass of the 2<sup>nd</sup>

---

<sup>31</sup> The use of V/3 is a non-standard notation employed in this book to depict chord inversion with numeral analysis.

inversion chord, usually in a cadence. This first point can be illustrated clearly in Darlene Zschech's *Shout To The Lord* (Figure 11.8).

**Figure 11.8** Shout To The Lord – Darlene Zschech

A/C#    D                    A/E    F#m                    G    D/F#    E sus4    E

all that I am, —                    ne-ver cease to wor-ship You.

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I/3    IV                    I/5    vi                    bVII    IV/3    Vsus4    V  
mi    fa                    sol    la                    te    la    sol

Here, both 1<sup>st</sup> and 2<sup>nd</sup> inversion chords are used to create a stepwise ascending bass line from an A/C# to a G. This ascent: I/3→IV→I/5→iv→bVII (*mi—fa—sol—la—te*) makes for an exciting chord progression that wonderfully builds up to the chorus. The other point is clearly demonstrated in the final phrase of the hymn *Great Is Thy Faithfulness* (Figure 11.9)

**Figure 11.9** Great Is Thy Faithfulness – Thomas Chisholm & William Runyon

G#°7                                    D/A                                    A7                                    D

Great is Thy faith-ful-ness, Lord, un-to-me.

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#iv°7                                    I/5                                    V7                                    I  
fi                                    sol                                    sol                                    do

In the third-to-last bar of this hymn, a 2<sup>nd</sup> inversion tonic D chord (*sol*) precedes an A7 (V7 or *sol*) where the 2<sup>nd</sup> inversion chord has the same bass note as the succeeding root position V7 chord. This musical device is typical at a cadence of a song, especially in a traditional style. Consequently, it is found in many hymns. A

similar use of 2<sup>nd</sup> inversion chords is found in the verse of *Amazing Grace (My Chains Are Gone)*, though not as part of a cadence (Figure 11.10).

**Figure 11.10** – *Amazing Grace (My Chains are Gone)* – Chris Tomlin, Edwin Othello Excell, John Newton, John Rees, & Louie Giglio

F                      B $\flat$ /F                      F

Amaz - ing grace, how \_\_\_ sweet the sound, that saved \_\_\_ a \_\_\_ wretch \_\_\_ like  
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I                      IV/5                      I  
do                      do                      do

The B $\flat$ /F in the verse is a 2<sup>nd</sup> inversion B $\flat$  chord (IV/5) in the key of F. Having the same bass note as the tonic F chords surrounding it, this inversion creates a sustaining bass note (as opposed to a moving bass line) under several chord changes, called ***pedal point***. This technique is used often in many styles of music.

### Third Inversion and other Slash Chords

Though root position, 1<sup>st</sup> inversion, and 2<sup>nd</sup> inversion chords represent all the inversions found in triadic harmonies, 3<sup>rd</sup> inversion chords are also possible through the seventh chord. A 3<sup>rd</sup> inversion chord has its seventh in the bass and a C7 chord with its 7<sup>th</sup> in the bass would be written C7/B $\flat$ , or more simply C/B $\flat$  (Figure 11.11)<sup>32</sup>

<sup>32</sup> It is not mandatory that a seventh be indicated numerically in the chord symbol of a third inversion chord, since the presence of the seventh as the bass note makes such notation redundant.

**Figure 11.11** Seventh Chord Inversions:

Root Position 7 <sup>th</sup> :	1 <sup>st</sup> Inversion:	2 <sup>nd</sup> Inversion:	3 <sup>rd</sup> Inversion:
C7	C7/E	C7/G	C7/B <sup>b</sup>

V7	V7/3	V7/5	V7/7
do	mi	sol	te

Although, a 3<sup>rd</sup> inversion may occur on any seventh chord variety: major, minor, dominant, and diminished, the 3<sup>rd</sup> inversion is most commonly seen in minor sevenths and dominant sevenths.

These chords are even more unstable than 2<sup>nd</sup> inversion and their use is, for the most part, restricted to two types: 1) it can be used if the bass note descends by step following the 3<sup>rd</sup> inversion, usually to a 1<sup>st</sup> inversion chord, and 2) as part of pedal point. A classic example of the first point is visible in Keith Getty and Stuart Townend's song, *Speak O Lord* (Figure 11.12)

**Figure 11.12** Speak O Lord – Keith Getty & Stuart Townend

G	G/F	C/E	F	C/E	G	G/F	C/E	F	Gsus4	G
---	-----	-----	---	-----	---	-----	-----	---	-------	---

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V	V/7	I/3	IV	I/3	V	V/7	I/3	IV	V	V <sup>sus4</sup>	V
sol	fa	mi	fa	mi	sol	fa	mi	fa	sol	sol	

The 3<sup>rd</sup> inversion G7 chord, G/F, is part of a three-note descent from G down to E. In many cases, the 3<sup>rd</sup> inversion chord is preceded by a root position triad of the same root and succeeded by a 1<sup>st</sup> inversion triad whose root is a fourth higher.

In this case, the progression goes:  $V \rightarrow V7/7 \rightarrow I/3$ . Theoretically, this progression may be used anywhere a  $V \rightarrow I$  movement occurs. In the case of this song, it works especially well as the resulting bass line creates a pleasant counterpoint to the melody.

A minor seventh chord in 3<sup>rd</sup> inversion is another common usage. This inversion of a minor chord is often reserved for a stepwise bass walk-down from *la* to *fa* ( $vi \rightarrow vi7/7 \rightarrow IV$ ) in major or *do* to *le* in minor keys ( $i \rightarrow i7/7 \rightarrow VI$ ) Matt Redman's *Call To Worship* provides a good example of this type of walk down. Note that the shift from tonic (*do*) in E minor to a tonic (*do*) A minor on the word "mountain" is the result of a modulation, or change of key (Figure 11.13).

**Figure 11.13** Call to Worship – Matt Redman

E m                      A m                      A m/G                      F (#4)

We're climb-ing up the mountain of the Lord, to - wards Your ho - ly place, and ev - ry step is praise.

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i                      iv                      iv/7                      IV(#4)  
do                      do                      te                      le

The major seventh variety is also found in popular music, though it is far more dissonant (and likewise, unstable) than the other two types, since the major seventh clashes strongly with the root when inverted.

This chord is nearly always found in a walk down from I to vi. This walk down occurs in the verse to Matt Redman's *Let Everything That Has Breath* with a walk down from E (I), through its 3<sup>rd</sup> inversion E/D#, to C#m7 (vi).



**Figure 11.14** Let Everything that Has Breath – Matt Redman

E                      E/D#                      C#m7                      A                      A/B



Let ever-y thing that,      ever-y thing that,      ever-y thing that      has breath praise the Lord.

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I                      Imaj7/7                      vi7                      IV      V7sus11


do                      ti                      la                      fa                      sol

**All Three Inversions in One Song**

It is not altogether uncommon to find several types of slash chords in a single song, since they all may work together to create a pleasing bass progression. Slash chords representing several forms of inversion are especially common in chord progressions forming a bass walk-down. Here, the bass line “walks down” each note of the scale. Slash chords are abundant in these progressions because they allow for the harmony to be smooth and melodic. This can be clearly seen in the song, *Above All* (Figure 11.16).

**Figure 11.15** Above All – Lenny LeBlanc & Paul Baloche

A                      A G#      F#m                      Amaj7.E                      D                      A C#




things.      A -bove all      wis - dom \_\_\_\_ and all \_\_\_\_ the ways \_\_\_\_ of man. \_\_\_\_

I                      Imaj7/7      vi                      Imaj7/5                      IV                      I/3

do                      ti                      la                      sol                      fa                      mi

B m7                      D A                      E G#      A                      A C#



You were here \_\_\_\_ be - fore \_\_\_\_ the world \_\_\_\_ be - gan. \_\_\_\_      A -bove all \_\_\_\_

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ii7                      IV/5                      V/3      I                      I/3

re                      do                      ti      do                      mi

### Slash Chord Reinterpretations

As you may have noticed so far, some of the above chord spellings have been simplified. For example, the second chord in the song above is a 3<sup>rd</sup> inversion Amaj7 chord, simply spelled A/G# rather than the more cumbersome Amaj7/G#. Where conciseness in lead sheets is a virtue that is relished, this type of simplification is commonplace. There are a variety of other cases where a complex chord is reduced to a simpler spelling on the page to make interpretation quicker and easier. The following section will show a few common chord symbol reductions.

A chord with four or more notes may be spelled more simply as a triad with an alternate bass note. This can be very helpful for musicians who are not very familiar with chord symbols and may only have a basic knowledge of major and minor triads. One can set up a less experienced musician for success by respelling a complex chord that may be confusing and notate it in a way that is more familiar.

The examples below offer a few instances where a reinterpretation of a complex harmony as a slash chord may be beneficial. In each case where an extended chord has been reinterpreted as a slash chord, the chord to the left of the slash is contained within the original harmony, but not identified as the root chord. For instance, in the first example, a C7sus11 contains (C—B $\flat$ —D—F), though C is the literal root, this chord could be respelled more simply as a B $\flat$  triad with a C in the bass, since B $\flat$ —D—F are the notes found in a B $\flat$  major triad. The other examples follow the same principle (Figure 11.16).


**Figure 11.16** Common Slash Chord Reinterpretations:

Figure 11.16 illustrates common slash chord reinterpretations. The figure shows two rows of musical staves in treble clef with a key signature of one flat (B $\flat$ ). Each staff contains four chord diagrams. The first row shows: 1. C7sus11 (notes: C, B $\flat$ , D, F, G, C), 2. B $\flat$ /C (notes: C, B $\flat$ , D), 3. C13sus11 (notes: C, B $\flat$ , D, F, G, A $\flat$ , C), 4. B $\flat$ maj7/C (notes: C, B $\flat$ , D, F). The second row shows: 1. C $\emptyset$ 7 (notes: C, B $\flat$ , D, F), 2. B $\flat$ m-C (notes: C, B $\flat$ , D), 3. Cmaj9(no3) (notes: C, B $\flat$ , D, F, G), 4. G/C (notes: C, B $\flat$ , D).

In some cases, musicians will generate a walk-down chord progression by changing the bass note while the chord above remains consistent. Thus, it may be simpler and more representative of what is occurring in the music to notate a chord progression to illustrate this technique rather than notate each chord on its own terms. For example, the chorus to Shane Barnard's *Be Near* is an example of such a case where a chord is repeated and the bass note descends by step. Many transcriptions of this song spell the chords this way with nearly every chord spelled as a separate harmony (Figure 11.17).

**Figure 11.17** Be Near – Shane Barnard

D            D/C#            B m7            D/A                            G2            D/F#



near, O God. \_\_\_ Be near, \_\_\_ O God \_\_\_ of us, \_\_\_ Your near - ness is \_\_\_ to us \_\_\_ our \_\_\_


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I            Imaj7/7            vi7            I/5                            IV(2)    I/3  
do            ti            la            sol                            fa            mi

However, it may be easier to understand, and perhaps more faithful to how the writer conceives the music, to interpret the chord progression as the result of a descending bass under a repeated chord (Figure 11.18).

**Figure 11.18** Be Near – Shane Barnard

D            D/C#            D/B            D/A                            D/G            D/F#



near, O God. \_\_\_ Be near, \_\_\_ O God \_\_\_ of us, \_\_\_ Your near - ness is \_\_\_ to us \_\_\_ our \_\_\_

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I            Imaj7/7            I/6            I/5                            I/4            I/3  
do            ti            la            sol                            fa            mi

Sometimes, it may be beneficial to interpret a chord progression in the opposite fashion. For example, some guitarists prefer to read chords with extensions (as opposed to triads with alternate bass notes). Since a good many guitarists have difficulty in the quick identification of notes on the fret board, they become accustomed to finding a particular bass note and voicing the chord based on the extensions placed above it. It is less natural for many such guitarists to do the opposite and locate a particular triad first and then attach the appropriate bass note to it.

In the transcription below of the hymn, *How Great Thou Art*, the third bar contains four chord changes over the same bass note (Figure 11.19).

**Figure 11.19** How Great Thou Art – Stuart K. Hine

A          E7/B A/C#D                                  A/E          C#m/E    B m7/E E7

God, when I in awe-some won - der \_\_\_ con-sid-er all the worlds Thy hands hath

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I/5          vi/3    ii7/4    V7  
 sol          sol    sol    sol

These chords could be reinterpreted almost entirely as same chord with various extensions, which may be easier to read for some musicians (Figure 11.20).

**Figure 11.20** How Great Thou Art – Stuart K. Hine

A/E                          E6                  Esus11    E7          A

all the worlds Thy hands hath made, \_\_\_\_\_ I see the

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I/5                  V6          Vsus11    V7  
 sol                  sol          sol          sol

As a rule of thumb, it is important to ascertain the skills and preferences of your musicians, in order to create chord charts that communicate most effectively to them.

### Pedal Bass

An opposite scenario would consist of a chord progression where the harmony changes while a single bass note remains consistent. The pedal point has already been briefly discussed, but here it is observed more in depth. Let us return again to the verse in Chris Tomlin's recording of *Amazing Grace (My Chains Are Gone)* (Figure 11.21).

**Figure 11.21** *Amazing Grace (My Chains are Gone)* – Chris Tomlin, Edwin Othello Excell, John Newton, John Rees, and Louie Giglio

F                      B<sup>b</sup>/F                      F    C/F

- ing grace, how — sweet the sound, that saved — a wretch like — me. I once

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I                      IV/5                      I    V/4  
do                      do                      do    do

Here, the chord progression is I—IV—I—V, but the bass note remains on the tonic. A pedal bass is almost always on the tonic or the dominant. When it is found on the tonic (*do*), it is usually at the beginning of a song or at the end of a song in a coda or outro. Since *do* is the “home” pitch, a pedal point on this tone can create a sensation of stability or repose. A dominant pedal (on *sol*) is most often used at the end of the song, near the lyrical climax, leading into the final dominant chord (V chord). When on the dominant, it creates more a sensation of anticipation, of building towards a climax. In more rare cases, pedal point may be used on other degrees of the scale to create a similar effect. In the phrase leading into the chorus of *You Are Good* there is a pedal point on the fourth scale degree, *fa* (Figure 11.22).

**Figure 11.22** You Are Good – Israel Houghton

A B A

Peo - ple — from ev - er - y na - tion — and tongue,

IV V7/7

*fa* *fa*

C A D A

from gen - er - a - tion — to gen - er - a - tion. We

bVI/6 bVII/5

*fa* *fa*

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It is clear that changing the bass note of a single chord or chord progression has a great effect on the music and can be used for a variety of applications, make it an invaluable arranging technique. Take care to develop this skill and employ it tastefully in your own arrangements.

### **Practice Exercises**

For the exercises below, identify the chord and its inversion by attaching a chord symbol to the notation. Fill in the missing notation, either staff or TAB (Figure 11.23).

**Figure 11.23** Practice Exercises:

The figure shows two musical exercises. Each exercise consists of a treble clef staff and a guitar tablature (TAB) staff. The first exercise shows a sequence of four chords: a C major triad (C4, E4, G4), a G major triad (G4, B4, D5), an F major triad (F4, A4, C5), and a D major triad (D4, F4, A4). The second exercise shows a sequence of four chords: a D major triad (D4, F4, A4), a G major triad (G4, B4, D5), an F major triad (F4, A4, C5), and a C major triad (C4, E4, G4).

In the exercises below, notate in the staff and TAB the slash chords indicated by the chord symbols (Figure 11.24).

**Figure 11.24** Practice Exercises:

The figure shows a musical exercise with four slash chords:  $A^b/C$ ,  $E7/B$ ,  $F\#/B$ , and  $Gm7/C$ . The staff and TAB are blank for notation.

Below is the first verse and refrain of *Great Is Thy Faithfulness* by Thomas Obadiah Chisholm and William Marion Runyan. All the chords in this arrangement are root position chords. Using the concepts and techniques detailed in this chapter, create your own arrangement of this song from the root position chords by using chord inversions. Also, if there are any chords that appear to be complicated,

attempt to simplify their spellings through slash chords. Remember to use slash chords to create smoother, stepwise movement as well as pedal points in a base line when it benefits the arrangement. However, attempt to maintain variety, as too much of the same thing can become monotonous.

**Figure 11.25** Great is Thy Faithfulness – Thomas Chisholm & William Runyan

D          D-      Gmaj7          G6      A7      G      A7      G      D

Great is Thy faith - ful - ness, O God my fath - er,  
G                                  D          A7      D          E      F7sus11      E7          A


there is no sha - dow of turn - ing with Thee;  
A7                                  D      Dmaj7      D13(#11)      D      Em      D      Gmaj7      G6

Though chang - est not, Thy com - pas - sions they fail not;  
G#°7                                  D                                  F#m      A7      D

As Thou hast been, Thou for - ev - er wilt be.




A G D B7 Am Em




Great is Thy faith - ful-ness! Great - is Thy faith - ful-ness!

A7 D Dm6 A E7sus11 E7 A




Morn - ing by morn - ing new mer - cies I see;

A7 D Dmaj7 D13(#11) D Em D Gmaj7 G6



All I have need - ed Thy hand hath pro - vid - ed.

G#°7 D A7 D



Great is Thy faith - ful - ness, Lord, un - to me.

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## CHAPTER XII

### CHROMATICISM

All of the chords we have discussed thus far have been in the realm of diatonicity, meaning that they fit naturally into the key of the song; and most chords used in popular songs today are diatonic. However, there are always some songs that contain chords not naturally in the key. When tones are non-diatonic, this type of harmony is called *chromaticism*. It is helpful to look at chromaticism from a theoretical perspective since these types of chords, being out of the norm, may not be a natural part of your chord vocabulary or readily “in your ears” and perceived as a natural chord progression. Furthermore, chromaticism in popular music can be difficult to manipulate, as it must be handled delicately for it to sound natural and not sound jarring or wrong. Theory can teach you how to use them, beyond simply recognizing them when they are present in music, by suggesting how to add them into a song when its chord progression has “grown old”. When chromaticism is used in a skillful way, it can help a progression sound fresh, where a purely diatonic version may seem boring or cliché.

The present chapter will discuss the most common uses of chromaticism in popular music so that whether you are a music team leader, songwriter, or music arranger, you will have the tools to employ it effectively and add more to your growing creative palette. The following techniques will be divided into 2 categories:

- **Borrowed Chords**
- **Change of Quality Chords**

These categories are used because the theoretical concept behind them says that chromatic tones, though foreign to a key, do come from “somewhere”. Thus

they can be defined systematically so a musician may know clearly how to employ such techniques in any key and musical context.

### **Borrowed Chords**

The most common way that chromaticism occurs is through a technique called **modal borrowing**. In this case, a chord is “borrowed” from the parallel key. Remember that the parallel key is the major or minor that shares the same root as the present key. As an example, for C major, the parallel key is C minor (called parallel minor). Likewise the parallel key of E minor is E major (parallel major). Consider the harmonic possibilities offered between the keys of C major and C minor (Figure 12.1, 2).

**Figure 12.1 C Major:**

A musical staff in treble clef with a key signature of one sharp (F#) and a common time signature (C). The staff contains eight chords, each represented by a vertical line with dots indicating the notes. Below the staff, the Roman numerals and solfège syllables for each chord are listed.

I	ii	iii	IV	V	vi	vii <sup>o</sup>	I
do	re	mi	fa	sol	la	ti	do

**Figure 12.2 C Minor:**

A musical staff in treble clef with a key signature of two flats (Bb, Eb) and a common time signature (C). The staff contains eight chords, each represented by a vertical line with dots indicating the notes. Below the staff, the Roman numerals and solfège syllables for each chord are listed.

i	ii <sup>o</sup>	<sup>b</sup> III	iv	v	<sup>b</sup> VI	<sup>b</sup> VII	i
do	re	me	fa	sol	le	te	do

The major key can in theory, borrow any of the chords of the parallel minor, therefore C major can take Cm, D<sup>o</sup>, Eb, Fm, Gm, Ab, and Bb. In numeric terms, this means that the major can have i, ii<sup>o</sup>, <sup>b</sup>III, iv, v, <sup>b</sup>VI, and <sup>b</sup>VII chords in addition to the seven diatonic possibilities it already has.

## Modal Borrowing: Minor to Major

### *b*VII Chords

A *b*VII chord in major keys is a chromatic chord common to pop music and can be found in many worship songs. A good example is Darlene Zschech's *Shout To The Lord* (Figure 12.3).

**Figure 12.3** Shout to the Lord – Darlene Zschech

A/C#	D	A/E	F#m	G	D/F#	E sus4	E
------	---	-----	-----	---	------	--------	---

all that I am, ——— ne-ver cease to wor-ship You.

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V/3	IV	I/5	vi	<i>b</i> VII	IV/3	Vsus4	V
mi	fa	sol	la	te	la	sol	sol

In major keys, the chord that is normally the seventh scale degree is a *vii*<sup>o</sup> (G#<sup>o</sup> in A major), but here the *b*VII (G), is taken from the parallel A minor. Another example is *You Are Worthy of My Praise* by David Ruis. In the key of D major, this song has a C major chord in the third bar, which is the *b*VII taken from the parallel D minor (Figure 12.4).

**Figure 12.4** You Are Worthy of My Praise – David Ruis

D	C
---	---

Men: I will worship ——— with all of — my — heart.

Women: I will wor-ship ——— with all of — my — heart.

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I	<i>b</i> VII
do	te

### *b*VI Chords

The *b*VI chord is another commonly borrowed chord and it is often paired with a *b*VII chord as in Darlene Zschech's *Irresistible*. Here the B $\flat$  and C chord are borrowed from D minor to be used as a *b*VI and *b*VII in D major (Figure 12.5).

**Figure 12.5** *Irresistible* – Darlene Zschech

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<i>b</i> VI	<i>b</i> VII	I
le	te	do

### *Minor iv and v* Chords

In minor keys, the diatonic chords found on scale degrees *fa* and *sol* are minor and may as well be borrowed to major keys as well. The minor *iv* and *v* chords are borrowed along with the *b*VI and *b*VII chords from E minor to the key of E major in Israel Houghton and Aaron Lindsey's *Again I Say Rejoice* in the phrase that leads into the chorus (Figure 12.6).

**Figure 12.6** *Again I Say Rejoice* – Israel Houghton & Aaron Lindsey

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<i>iv</i> 7	<i>v</i> 7	<i>b</i> VI	<i>b</i> VII	I
<i>fa</i>	<i>sol</i>	le	te	do

Borrowed chords are also effective for creating contrasting sections of music such as a musical interlude. This can be particularly helpful in hymns, where an

interlude between verses can help break up the more rigid structure and give singers a restful pause in a song where there are few natural pauses in the melody. Keith Getty composed such a portion of music to be played between stanzas of his hymn *In Christ Alone*. Here the interlude begins with a minor v chord. The inclusion of this chord also adds a pleasant contrast from the harmonic content of the verse (Figure 12.7).

**Figure 12.7** In Christ Alone – Keith Getty & Stuart Townend

D	Am7	Em7	G	A7sus4	D
---	-----	-----	---	--------	---

stand.					
I	v7	ii7	IV	V7sus4	I
do	sol	re	fa	sol	do

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### ***ii° and bIII Chords***

These two borrowed chords are indeed the most rare of the borrowed possibilities, but are employed now and again and to much effect. Their place in a major key sounds quite distant from the diatonic norm, but that makes them all the more interesting. Darlene Zschech is a songwriter who commonly employs modal borrowing in her compositions, two of which illustrate the use of these chords in the examples below.

*In The Potter's Hand* uses a form of modal borrowing in the fourth bar of the verse. Here, the transcription reads the chord as a Cm6/Eb, which would technically be a borrowed iv6/3 from minor (Figure 12.8).

**Figure 12.8** The Potter's Hand – Darlene Zschech

G D/F#

Beau - ti - ful Lord, \_\_\_\_\_ won - der - ful Sav - iour. \_\_\_\_\_

I V/3

*do* *ti*

C Cm6/Eb Em7

I know for sure, \_\_\_\_\_ all of my days \_\_\_\_\_ are \_\_\_\_\_ held in Your hand; \_\_\_\_\_

IV iv6/3 vi7

*fa* *le* *la*

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However, a closer look at the Cm6/Eb (C—Eb—G—A) shows that it has the same pitch content as A<sup>ø</sup>7/Eb (A—C—Eb—G), which would be analyzed as ii<sup>ø</sup>7/5 borrowed from G minor to G major (Figure 12.9).

**Figure 12.9** Minor Sixth Chord vs. Half Diminished Seventh:


Cm6/Eb A<sup>ø</sup>7/Eb

<b>T</b>	10	10
<b>A</b>	12	12
<b>B</b>	10	10
	H	H

Whichever way you identify this chord, modal borrowing is involved. Here is a rare example in contemporary Christian repertoire where a ii<sup>ø</sup>7 has been applied in a major key (Figure 12.10).

**Figure 12.10** The Potter's Hand – Darlene Zschech

C A $\phi$ 7/E $\flat$  Em7



I know for sure, \_\_\_\_\_ all of my days \_\_\_\_\_ are \_\_\_\_\_ held in Your hand; \_\_\_\_\_


IV ii $\phi$ 7/5 vi7

fa le la

A tune we analyzed earlier, *Irresistible*, contains the rare occurrence of  $\flat$ III (me) in a major key. In the instance of the last phrase of the chorus, an F(2) chord appears in the key of D major, a  $\flat$ III from D minor. See the third bar of the example below (Figure 12.11).

**Figure 12.11** Irresistible – Darlene Zschech

G2 Bm7 A/C# D




o - ver \_\_\_\_\_ me. \_\_\_\_\_ Your good - ness a - bounds. \_\_\_\_\_ You've tak - en my

IV(2) vi7 V/3 I

fa la ti do

F2 B $\flat$ maj7 C D



breath a - way \_\_\_\_\_ with Your \_\_\_\_\_ ir - re - sist - i - ble love. \_\_\_\_\_

$\flat$ III(2)  $\flat$ VI $\text{maj}7$   $\flat$ VII I

me le te do

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### Modal Borrowing: Major to Minor

If you recall our discussion of the minor scale in Chapter VI, we examined three variants of the minor scale. The most common, the natural minor, was the standard diatonic version, but the other two arose out of some alterations to the



natural minor scale by borrowing tones from major. The harmonic minor scale used the raised leading tone (*ti*) from major and the melodic minor used both *la* and *ti* from major. This is a type of modal borrowing.

Though modal borrowing from the parallel major to a minor key works in theory the same way as borrowing from minor to major, examining modal borrowing in terms of the use of these various minor scale forms helps explain the characteristics of the most common forms of minor key chromaticism more clearly. In fact, chromaticism is much more common in minor and this is due in large part to the extensive use of these scales. The three minor scale variants in the key of C minor are shown again below (Figure 12.12).

**Figure 12.12** Minor Scale Variants:

C natural minor:                      C harmonic minor:                      C melodic minor:

#7                      #6 #7  
*la*                      *la ti*

These scales exist in both the melodic and harmonic content of a song. Chord theory tells us that chords are built from the notes of the scale harmonized by thirds. Therefore, by adding the chromatic possibilities offered by the other minor scales, we are afforded 6 new triads for the minor scale, since each of the two tones may occupy the place of a root third or fifth. Below is a composite of the 3 minor scales with all 13 possible chords shown (Figure 12.13):

**Figure 12.13** C minor with #6 and #7 harmonization:

i    ii°    ii    bIII    bIII+    iv    IV    v    V    bVI    vi    bVII    vii°    i  
do    re    re    me    me    fa    fa    sol    sol    le    la    te    ti    do

If you've guessed that the #6 and #7 could also be applied as sevenths, you're on the right track. Expanding the harmony to include sevenths affords a total of 9 new chords that aren't found in the original diatonic collection of sevenths (Figure 12.14).

**Figure 12.14** Seventh chords using #6 and #7:

i7	imaj7	iiø7	ii7	bIIImaj7	bIII+maj7	iv7	IV7
do	do	re	re	me	me	fa	fa

v7	V7	bVIImaj7	viø7	bVII7	bVIIImaj7	viiø7	viiø7
sol	sol	le	la	te	te	ti	ti

Obviously, we could keep going through 9<sup>th</sup>, 11<sup>th</sup>, and 13<sup>th</sup> chords, but the possibilities become almost too many to comprehend at this point. For now, let's stick with our new triads and see what they look and sound like in a musical context.

Though there are six new possibilities, there are three that are used most often, the major dominant chord, *sol* (V) and the major subdominant, or *fa* (IV).

### **Major IV and V**

These two chords are probably the most commonly borrowed chords from major. Containing the *ti* from major (IV doesn't contain *ti*), these two chords have a strong pull back to tonic. As a result, the tonic chord in minor almost always follows them. This arrangement of the hymn *O The Deep, Deep Love of Jesus* provides a good example of the use of a few of these modally borrowed chords in the third and fourth bar of the excerpt (Figure 12.15).

**Figure 12.15** O the Deep, Deep Love of Jesus – Samuel Francis & Thomas Williams

Em    Em.G    B    C    F#o7/A    B    Em

O the deep, deep love of Je - sus,

i    i/3    V    bVI    ii°7/3    V    i

do    me    sol    le    fa    sol    do

Em    B7(b9)    Cmaj7    A7C#    D    B7D#    Em

vast, un - meas - ured, bound - less free,

i    V7(b9)    bVI maj7    IV7/3    bVII    V7/3    i

do    sol    le    la    te    ti    do

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### Change of Quality Chords

The last type of chromaticism we will discuss in this chapter are change of quality chords. These chords occur as the result of a chromatic alteration of an embedded melodic line connecting two harmonies or merely the altering of a diatonic chord's quality to one that is not diatonic.

### ***Major and Augmented Chords: Chromatically Altered Fifths***

This is a technique that was hinted at earlier in the discussion of augmented triads. As stated, chords can arise from an embedded melodic line that involves chromatic changes by step, changing the quality of the chords as it progresses through them. This is often the case with augmented chords, where the fifth of the chord has been sharpened from a major chord of the same root. We saw this in the opening chord progression to Matt Redman's *Let My Words Be Few*. Here, the fifth of the G chord (D) is sharpened in the following chord D# (si) to create a G augmented triad. This chromatic tone is sharpened yet again to E (la) in the following Cmaj7 chord. Note that though it is not in the melody of the song, the chromatic ascent of

D—D♯—E (*sol—si—la*) is a melodic line embedded in the harmony. The arrangement below continues this idea by flattening *la* to *le* (E♭) in the next chord, which originally was C, is now Cm. Thus, the chromatic line changed the quality of the chord. After Cm the chord resolves back to tonic, G, where the E♭ (*le*) resolves down to D (*sol*). The chromatic melody embedded throughout this five-chord progression is D→D♯→E→E♭→D or *sol—si—la—le—sol* (Figure 12.16).

**Figure 12.16** Let My Words be Few – Matt & Beth Redman

G                      G+                      Cmaj7                      Cm7                      G

You are God in hea - ven, — and here — am I — on earth, — so I'll — let

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I	I+	IVmaj7	iv7	I
<i>do</i>	<i>do</i>	<i>fa</i>	<i>fa</i>	<i>do</i>

Below is a possible rendering of these chord changes for guitar. One can trace the chromatic ascent and descent of the embedded melodic line on the 4<sup>th</sup> string from bars 1—3 and transferring up to the 1<sup>st</sup> and 2<sup>nd</sup> strings on bars 3—5 (Figure 12.17).

**Figure 12.17** Embedded Chromatic Melody:

G                      G-                      Cmaj7                      Cm7                      G

D	D♯	E	E♭	D
<i>sol</i>	<i>si</i>	<i>la</i>	<i>le</i>	<i>sol</i>

### Major and Minor Chords: Chromatically Altered Thirds

In the example above, we noted that a chromaticism occurred in the fourth bar due to a change of quality from C to Cm when the chord's third was altered from *mi* to *me* (E to E $\flat$ ). Oftentimes chromaticism arises like this, when the third is raised or lowered by half step, changing the quality of the chord. It happens quite frequently in traditional music that a ii $\rightarrow$ V chord progression is chromatically altered in this way so that minor ii becomes a major II. In so doing, the II chord pulls strongly to the dominant (II $\rightarrow$ V) much in the way a V would pull to tonic. Consequently, this change of quality is often called a "secondary dominant." This occurs frequently in hymn repertoire. Note the II or secondary dominant, in the example below (Figure 12.18).

**Figure 12.18** It Is Well – Horatio Spafford & Phillip Bliss

G7      C                      C G      G-F    C.E      F              G

C                      A m                      A m C      G-D    D      G

way,              when    sor - rows    like    sea    bil - lows    roll;              what

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I                      vi                      vi/3    V/5    II      V  
do                      la                      do    re    re      sol

The song *Still* by Reuben Morgan has a change of quality also on *re*. Here, the II/3 chord is in first inversion, creating a chromatic ascent in the bass (F—F $\sharp$ —G or *fa—fi—sol*) (Figure 12.19).

**Figure 12.19** Still – Reuben Morgan

C            G B            A m            F            D, F#            Gsus    G

Hide me now un - der Your wings.

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I            V/3            vi            IV            II/3            Vsus V  
*do            ti            la            fa            fi            sol*

Though a change of quality is commonly employed on the II chord (*re*), it may happen on others. The hymn, *Great Is Thy Faithfulness*, has a VI7 (F#7) moving to ii (Bm) during the refrain. This chromatically altered VI7 functions as a secondary dominant to ii. You know a change of quality chord functions as a secondary dominant when the succeeding chord is a perfect fourth away (Figure 12.20).

**Figure 12.20** Great is Thy Faithfulness – Thomas Chisholm & William Runyan

E7                            A                            F#7                            B m

Great is Thy faith - ful-ness!            great is Thy faith - ful-ness!

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V7                            I                            VI7                            ii  
*sol                            do                            la                            re*

### **Major and Diminished Chords: Chromatically Raised Roots**

Diminished chords are change of quality chords when a major chord's root has been chromatically raised. For instance a D major (D—F#—A) becomes a D#° (D#—F#—A) when the root, D, is raised a half step. An example of this is found in the first measure of the excerpt below (Figure 12.21).

**Figure 12.21** Great is Thy Faithfulness – Thomas Chisholm & William Runyan

$D\sharp^{\circ}7$                        $A^{\circ}E$                        $E7$                        $A$

Great is Thy faith - ful ness, Lord un - to me.

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$\#iv^{\circ}7$                        $I/5$                        $V7$                        $I$   
*fi*                      *sol*                      *sol*                      *do*

**Major and Dominant Seventh Chords: Chromatically Altered Sevenths**

The last common change of quality chord we will discuss is the chromatic alteration of a major chord to a non-diatonic dominant seventh. For example, a tonic (*do*) in the key of  $A\flat$  major is  $A\flat$  ( $A\flat-C-E\flat$ ), this chord could be turned into a dominant seventh,  $A\flat7$  ( $A\flat-C-E\flat-G\flat$ ) adding the note  $G\flat$ , which is outside of the key. This chromatic alteration occurs in the arrangement below of *God of Wonders*. Here, in the bridge section, the  $A\flat$  tonic chord is followed by the tonic, chromatically altered to be a dominant seventh in 3<sup>rd</sup> inversion,  $A\flat7/G\flat$ . This provides a stepwise descent in the bass ( $A\flat-G\flat-F$ ) (Figure 12.22).

**Figure 12.22** God of Wonders – Marc Byrd & Steve Hindalong

$A\flat$      $A\flat G\flat$

Ha-le-lu - jah, to the Lord of hea-ven and earth.

$I$      $I7/7$   
*do*    *te*

$Fm7$      $D\flat2$                        $E\flat sus$                        $A\flat$

— Ha-le-lu - jah, to the Lord of hea-ven and earth. —

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$vi7$      $IV(2)$                        $Vsus$                        $I$   
*la*    *fa*                      *sol*                      *do*

### The Neapolitan Chord ( $\flat$ II): Chromatically Altered $ii^\circ$

Another chord that makes an appearance from time to time, especially in minor keys, is the  $\flat$ II (which in classical theory is often called the Neapolitan 6<sup>th</sup>).<sup>33</sup> This chord could be conceived of as a chromatically altered  $ii^\circ$ . For example, the  $ii^\circ$  in the key of A minor is  $B^\circ$  (B—D—F) and a  $\flat$ II chord ( $B\flat$ —D—F) can be created from it by flattening the root from B to  $B\flat$  (*ra*). This is a major chord whose root is the flattened supertonic tone (*ra*), hence  $\flat$ II. It is often found in first inversion,<sup>34</sup> a particularly classical use of the chord. Because the seldom-used  $\flat$ 2 or *ra* is present, the  $\flat$ II chord offers a particularly interesting (yet hip!) sound when used tastefully. Take this arrangement of Martin Smith and Stuart Garrard's *Majesty (Here I Am)*, for example, where the  $B\flat$  maj7 is used as a  $\flat$ II in the third bar of the excerpt (Figure 12.23).<sup>35</sup>

**Figure 12.23** Majesty (Here I Am) – Martin Smith & Stuart Garrard

now I've found the great - est love of all is  
i  $\flat$ VII/3  $\flat$ III i  $\flat$ VII/3  
do re me do re

<sup>33</sup> This quirky name arose from its association with classical composers of the “Neapolitan School,” a group of composers from Naples, Italy who composed in a similar style in the 18<sup>th</sup> century, typified by the use of this chord.

<sup>34</sup> In first inversion, the interval created by the bass note and the root of the chord is a 6<sup>th</sup>, which is where it gets the name Neapolitan 6<sup>th</sup>.

<sup>35</sup> When substituting chords, one must always be sure that the notes of the melody do not clash with the substituted harmony. Because the predominant D in the melody is consonant with the  $B\flat$  chord, this substitution is acceptable. Note that the B natural in the last eighth note of this measure will clash momentarily. In these cases one must weigh their options and decide whether this momentary dissonance precludes the use of the substitution. Another way to avoid this problem would be to sing this note up or down a half step.



C                                  B $\flat$ maj7                                  F                  G7:F

mine,                  since You laid down your                  life, \_\_\_\_\_ the great - est sac - ri - fice.

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bIII	bII	bVI	bVII7/7
me	ra	le	le

In this case, the  $\flat$ II is used as a B $\flat$ maj7 in the key of A minor. Note that the use of the  $\flat$ II as a  $\flat$ IImaj7 chord works particularly well because its seventh is the tonic note (*do*) of the key.

### **A Note About Chromatic Voice Leading**

Voice leading is a term that applies to the consideration of how melodic lines progress in harmony. We've already discussed some principles of voice leading in addressing tone tendencies (e.g. the leading tone "wants" to resolve to tonic, etc.). Though our discussion of this thus far has been limited to diatonic tones, tone tendencies apply to chromaticism as well. But why is this important?

One of the challenges posed by chromaticism is the attempt to make notes that are outside of the key sound "inside," and attention to voice leading will much aid this endeavor because it pays close attention to the natural tendencies of the notes. Do what is natural and chances are the music will sound natural too.

In terms of chromaticism, voice leading is not entirely difficult; one simply must know how the chromatic pitch relates to the key. In the simplest of terms, a note that is flatted naturally wants to resolve down by step (usually to a diatonic note), while a note that is sharpened naturally wants to resolve up by step to a diatonic note. For example, D $\sharp$  will nearly always resolve up to E, but the enharmonic E $\flat$  resolves down to D. If you look at nearly all of the examples of chromaticism in this chapter, you will find these voice leading principles to be true.

Throughout this chapter, we've made strides towards thinking about chords in their larger context by speaking in terms of connectivity and tendency. This will be the larger subject of the following chapter on chord progression, which discusses how chords relate and work together.

### **Practice Exercises**

For these practice exercises, identify the chord provided in terms of its root, quality, and numeric designation ( $bVI$ ,  $v7$ , etc.) according to the key signature. If only numeric designation is provided, fill in empty staff and TAB accordingly (Figure 12.24, 25).

**Figure 12.24** Practice Exercises:

Major Keys:

The figure shows three musical exercises for guitar, each consisting of a treble clef staff with a chord symbol above it, and a corresponding TAB staff below it. The exercises are as follows:

- Exercise 1:** Treble clef staff with a key signature of one flat (Bb). The chord symbol above the staff is  $bVII$ . The TAB staff is empty.
- Exercise 2:** Treble clef staff with a key signature of two flats (Bb). The chord symbols above the staff are  $E^b$  and  $G$ . The TAB staff is empty.
- Exercise 3:** Treble clef staff with a key signature of one flat (Bb). The chord symbols below the staff are  $II/3$ ,  $I7/7$ , and  $bIII$ . The TAB staff is empty.

**Figure 12.25** Practice Exercises:

Minor Keys:

The image displays two sets of musical notation for guitar practice exercises in minor keys. Each set consists of a treble clef staff with a key signature of two sharps (D major) and a corresponding TAB staff.

The first exercise is in D major. The treble clef staff shows a sequence of notes: D4, E4, F#4, G4, A4, B4, G4, F#4, E4, D4. Above the staff, the chords D and G7 are indicated. The TAB staff shows the following fret numbers: 4, 6, 4, 6, 4.

The second exercise is in E minor. The treble clef staff shows a sequence of notes: E4, F#4, G4, A4, B4, C5, B4, A4, G4, E4. Below the staff, the chords V7, iii, IV7/3, and bII are indicated.

## CHAPTER XIII

### CHORD PROGRESSION

In the last chapter we discussed chromaticism in a diatonic context and doing so we were forced to make allusions to one of the big concerns of Part 3, the final section of this book – that is, how chords relate to each other and how they may be used to form larger musical ideas. Not only will we discuss how chords relate by showing how they relate within a given song (Chapter XIII), but we will also discuss how chords may be strung together to link songs of different keys (Chapter XV). Throughout this segment we will also discuss in depth how chords found in existing progressions may be changed or altogether substituted to create a new idea for a given song (the thrust of Chapter XIV). In short, this is the part of the book where we learn to put all the basic tools of theory we've learned thus far to use, in order to be creative with them. We will begin to see the chords on the page not as the instructions for how to play a song, but rather as potentialities suggesting a playground of options, wherein you take part as a composer/performer to mold the music according to your personality and your church's personality. These techniques will help you take what is a static body of music repertoire and make it dynamic according to your creative potential. This is where music theory gets really fun.

Having covered chord extensions, slash chords, and chromaticism, we can approach the present topic on better footing. Now that we understand chords on individual terms, we will discuss how chords work together in the larger context of a song.

## **Chord Progression**

A chord progression is a harmonic tapestry of chords woven together to create the accompaniment for a melody. Though a melody will influence what kind of chord progression is played with it, chord progression plays an integral role in the overall sound of a song as it gives the melody a musical setting. In this chapter, we will discuss how and why chords interact in progression the way they do and learn how to compose and manipulate them to affect the musical setting of a song.

As music theory exists partially to point out and explain what occurs in music, it is beneficial to examine chord progressions from a theoretical point of view, to illuminate the trends that exist and understand the reasons behind those trends. Grasping the theory behind chord progression is not just helpful for familiarizing yourself with what is common and most expected, but through this one can learn how to take the familiar and use your own creativity to manipulate it in an artful way.

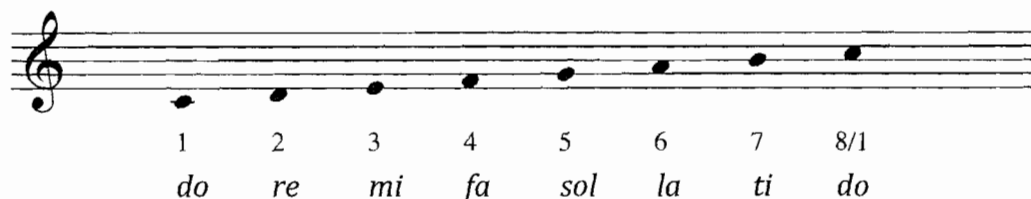
## **Understanding The Nature of Chord Progression**

A very simplistic way of understanding chord progression is as chords played one after another. Though this is true, it may surprise you to find that a chord progression gets its sound less from specifically what chords or notes are present, but more by how those notes sound in relation to the key. Why is it that a song can be played in a variety of keys and sound essentially the same each time, even when all the notes are being changed? The reason is that though the notes change, the relationships between them do not. Since the nature of a chord progression transcends the boundaries of particular notes, it is more beneficial to understand it in more general terms of chord relationship or “function”, rather than what exact notes are occurring.

What determines chord function is the placement of its root in the scale. Each note of a scale has a specific function that is a direct result of its placement therein. Take, for instance, a C major scale. There are seven different tones within

the space of an octave and each one has a unique sound in relation to the key and ultimately the tonic note (Figure 13.1).

**Figure 13.1** C major Scale:



We have already described how each note sounds as if it is “pulling” in one direction or the other (except for the tonic). Let’s review the seven tones of a diatonic scale. We have the tonic, supertonic, mediant, subdominant, dominant, submediant, and leading tone.

### A Review of Pitch Tendencies

- 1) **Tonic Tone:** The tonic, being the root of the entire scale, gives every other note in the key its context. It sounds “at rest”, meaning that your ear doesn’t expect or desire it to change to another note.
- 2) **Supertonic Tone:** Being the note above the tonic, its most immediate “pull” is to return back down to tonic.
- 3) **Mediant Tone:** the mediant is consonant with the tonic and thus doesn’t have a strong pull up or down, but it doesn’t sound resolute as the tonic does, so it ultimately “desires” to eventually return to tonic, even if it has to pass through another note.

- 4) **Subdominant Tone:** The submediant, as tone, has a most immediate resolution down to the mediant tone, but it also moves to the dominant when played as a bass note.
- 5) **Dominant Tone:** The dominant, being a P5 above tonic, is consonant, but like the mediant it must eventually find tonic or it will sound unresolved.
- 6) **Submediant Tone:** This tone is one step above the dominant and will pull downward to the dominant, but ultimately back to tonic.
- 7) **Leading Tone:** More than any other tone, the leading tone “wants” to resolve up to tonic.
- 8) **Tonic (at the octave):** The sheer force of the leading tone’s pull causes one to place the octave at the top of the scale to provide the ear the resolution it desires.<sup>36</sup>

### Pitch Tendency to Chord Tendency

These names and, to an extent, these same tendencies continue when each tone in a diatonic scale is made into the root of a triad by adding a note a third and a fifth above it (Figure 13.2).

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<sup>36</sup> One can see these “musical forces” are inherent in any diatonic system, which have been instilled in a listener’s conscious and subconscious “ear” by millennia of musical composition, and how they have been and continue to be the grounds for all forms of musical creativity. Thus, the expectations of the listener can, in many cases, be explained by music theory. This empowers the musician to interact with the listener by being aware of the listener’s expectations, and affords the musicians opportunity to satisfy them or play with their expectations.

For a more thorough discussion of these “musical forces” see: Steve Larson, “Musical Forces and Melodic Patterns,” *Theory and Practice* 22-23 (1997-98): 55-71.

**Figure 13.2** Triads in C major:

The figure shows a musical staff with a treble clef and a key signature of one sharp (F#). Eight triads are shown, each consisting of three notes. Below each triad is its Roman numeral and its corresponding solfège name in parentheses: I (do), ii (re), iii (mi), IV (fa), V (sol), vi (la), vii° (ti), and I (do).

Major:

I—Tonic triad (*do*)

ii—Supertonic triad (*re*)

iii—Mediant triad (*mi*)

IV—Subdominant triad (*fa*)

V—Dominant triad (*sol*)

vi—Submediant triad (*la*)

vii°—Leading Tone triad (*ti*)

I—Tonic Triad (*do*)

For the minor scale, most of these pitch tendencies are carried over with a few exceptions. As there is no leading tone present, the dominant functioning triad is a minor triad and does not have the same pull to tonic as it does in major. Likewise, the triad built from the 7<sup>th</sup> degree of the scale contains no leading tone, which is why the name “leading tone triad” doesn’t carry over from major. It is a major triad built one whole step below tonic and is thus termed the subtonic triad. This chord doesn’t pull particularly strongly in either direction, much like a mediant chord, though it is often used to pass between the tonic and submediant chords in either an ascending or descending pattern. It is also often employed in cycle of fifths progressions (Figure 13.3).

**Figure 13.3** Triads in C minor:

The figure shows a musical staff with a treble clef and a key signature of two flats (Bb, Eb). Eight triads are shown, each consisting of three notes. Below each triad is its Roman numeral and its corresponding solfège name in parentheses: i (do), ii° (re), bIII (me), iv (fa), V (sol), bVI (le), bVII (te), and i (do).



Minor:

i—Tonic triad (*do*)

ii<sup>o</sup>—Supertonic triad (*re*)

♭III—Mediant triad (*me*)

iv—Subdominant triad (*fa*)

v—Dominant triad (*sol*)

♭VI—Submediant triad (*le*)

♭VII—Subtonic triad (*te*)

i—Tonic triad (*do*)

The movement of triads in a diatonic system is made more complex than the simple tendencies of each root note since, in a triad, there are three tones sounding together, each with its own specific pull up or down. Furthermore, this is compounded by the fact that intervals are created between notes that have their own tendencies as consonant or dissonant intervals. For example, a dissonant interval wants to resolve to a consonant one, oftentimes in a specific way. All these variables combine to lend a great depth of character to a chord the moment it is played in the context of a chord progression. Tones pull this way and that and some tones' or intervals' individual tendencies win out over others, as the chord progression unfolds towards an eventual resolution.

Though it may seem as if the possibilities are endless or that there ought to be no rules concerning how to compose a progression, there are some basic trends or "rules" that have become common. Many common progressions are used because they are simply good ideas and are sensitive to how notes tend to function. Worship ministers are often involved in both performing and composing music, so becoming familiar with how chords function in progressions can be helpful to playing by ear and making good musical compositional decisions during the writing/arranging process.

### **Chord Function**

In order to more easily understand how chord function works, it is helpful to distill the different types of chords in a diatonic system into fewer categories than

the seven already mentioned. Even though a chord can go anywhere in a progression, the current style of music composition in popular music allows for a simpler model of chord function since some chords function in similar ways. Chords like the supertonic, leading tone, and submediant function similarly to the subdominant, dominant, and mediant respectively. So they may be assimilated into those classifications. Ordering similarly acting chords into groups, we define four main types of chord functions: Tonic, Mediant chords, Subdominant chords, and Dominant chords.

***Tonic Function:*** I, i, and vi – The home chord sounds at rest. It usually provides the beginning and ending for most progressions. Sometimes the submediant (vi) can be used as a substitution for tonic at the end of a phrase. Such a substitution is called a deceptive cadence, as it usually comes as a “surprise.”

***Mediant Function:*** iii, vi,  $\flat$ III,  $\flat$ VI, and  $\flat$ VII – Mediant chords have a weak and not entirely determinate pull, but don’t sound resolved. They usually provide a link between chords of stronger character (i.e. tonic, subdominant, and dominant chords).

***Subdominant Function:*** IV, ii, iv, and  $\text{ii}^\circ$  – These have a relaxed pull towards tonic that sounds as if it “falls” back into the tonic chord, or move to the tonic by means of another chord, namely the dominant.

***Dominant Function:*** V,  $\text{vii}^\circ$ , and v – They have a stronger pull to tonic and sound as if they’re “leaning” into it. Moving to any other chord besides tonic comes as a bit of a surprise, though popular music has tamed the  $V \rightarrow IV$  progression so that it is fairly typical.

## Tonic Chords

The word progression spurs thoughts of movement, and this precisely is what a chord progression is, a movement in harmony from point A to point B. A progression may begin in one spot and end in another, or it may circle back around to end up where it began. The tonic chord usually functions as this point of origin since it is so closely associated with the key. It sounds entirely stable in context of the key and sounds resolved when played, meaning that it doesn't seem like it needs to change to a different chord.

Though the tonic chord usually ends a chord progression with a cadence, be it the end of a verse, chorus, or the whole song, the other chords in a key tend to serve as “stops along the way” leading back to tonic. This song, in the key of D, is a good example of how a well-balanced chord progression begins with the tonic chord (D major) and departs and returns to tonic (Figure 13.3).

**Figure 13.3** Triads in C minor:

In Christ Alone – Stuart Townend and Keith Getty

G    D    G    A    D/F#    G    D/F#    Em7 G/A    D    G

In Christ a - lone my hope is found, He is my light, my strength, my song. This corn-er

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IV    I    IV    V    I/3    IV I/3    vi7 Vsus    I    IV  
fa    do    fa    sol mi    fa mi re sol do    fa

Though this song starts with a G major chord (IV), you can hear how the G chord is part of a pick up measure that leads to the following D chord (I) on the second syllable of “alone”. It is clear that the harmonic and metric aspect of the phrase begins here. The chord progression doesn't really resolve until it reaches the next root position tonic chord on the word “song”.

This is a good example of a well-balanced chord progression that begins and ends on tonic (though not all well-balanced phrases must do so). This gives a sense

of resolve or completeness to each phrase of the song. This manner of writing lends itself very well to this style of song. More traditional style songs, like hymns, are composed with this kind of balance in mind on a number of levels. The metric flow of the text is even and often employs some kind of rhyme scheme. The more even and traditional ebb and flow of the chord progression fits well into the parameters of the song.

However, some chord progressions will avoid having a resolved beginning and end in favor of a progression that sounds unresolved at both ends. This kind of cyclical progression sounds as if it could be looped indefinitely without ever resolving. The verse of Reuben Morgan's *Mighty To Save* is a good example of this kind of progression. This is a IV—I—vi—V progression. Here, the verse's progression begins on the IV chord (D) and ends with the V (E), though the IV chord does resolve to a I (A). The placement of the tonic on the second bar doesn't make it sound at all finalized. The momentum of the progression keeps moving forward through the vi chord into the V. At the V chord, the harmony pulls strongly to tonic, but every time this progression repeats, the IV chord delays this resolution (Figure 13.4).

**Figure 13.4** *Mighty to Save* – Reuben Morgan & Ben Fielding

The figure shows a musical staff in 4/4 time with a key signature of two sharps (F# and C#). The melody consists of eighth and quarter notes. Above the staff, the chords D, A, F#m, and E are indicated. Below the staff, the lyrics are: "Ev'ry one needs compas - sion, — lovethat'sneverfail - ing. — Let mercy fall on — me." Below the lyrics, the Roman numerals IV, I, vi, and V are aligned with the chords, and the solfège syllables fa, do, la, and sol are written below the Roman numerals. The copyright notice "©2006 Hillsong Publishing" is located at the bottom right of the figure.

This is part of what makes the chorus of this song so satisfying to sing. The tonic chord doesn't get played in a "resolved" kind of manner until the beginning of the chorus. The verse progression which creates a more unresolved or "suspended"

character gets answered by the I—V followed by the original IV—I—vi—V progression played at the rate of half notes. (Figure 13.5)

**Figure 13.5** Mighty to Save – Reuben Morgan & Ben Fielding

A                      E                      D                      A                      F#m                      E

Savior, He can move the mountains. My God is mighty to save, — He is mighty to save. — For-

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I                      V                      IV                      I                      vi                      V  
do                      sol                      fa                      do                      la                      sol

**Dominant and Subdominant Chords**

Taking a closer look at dominant and subdominant chords, we can really get at the core of the sound of these chords. Let’s examine the chorus to *Jesus Messiah*. This progression continually returns to the tonic (B) while alternating between the IV (E) and V (F#) chord (Figure 13.6).

**Figure 13.6** Jesus Messiah – Chris Tomlin, Daniel Carson, Ed Cash, & Jesse Reeves

E                      B                      E

Je-sus Mes-si - ah; ——— Name a-bove all ——— names; ———

IV                      I                      IV  
fa                      do                      fa

B                      F#


Bles-sed Re-deem - er; ——— Em-man-u-el. ——— The Res-cue for

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I                      V  
do                      sol

Listen to this progression and notice how the IV chord sounds as if it is falling back to tonic while the V chord leans into it. To hear more clearly how the subdominant and dominant offer more in terms of a sense of progression compared to other chords in the key, play the same chord progression, but replace the subdominant and dominant chords with mediant and submediant chords. In this chord progression, the I—IV—I—V has been replaced with I—vi—I—iii (Figure 13.7).

**Figure 13.7** Aimless Chord Progressions:

B	G#m	B	D#m
			
I	vi	I	iii
<i>do</i>	<i>la</i>	<i>do</i>	<i>mi</i>

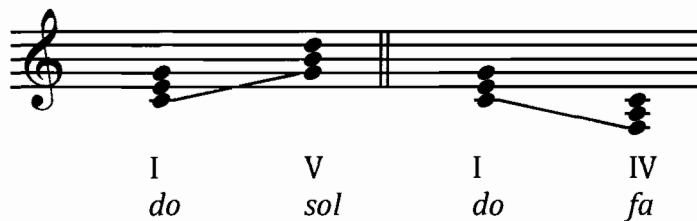
Regardless of the fact that such a chord progression would not be very ideal for this song's melody, it is clear that here the stability of the tonic is not balanced by the more different sound of the subdominant and dominant chords. The mediant and submediant chords are too close in sound to the tonic to give this chord progression any distinct sense of development.

The sameness or closeness in sound between two chords is relative to how much distance there is between the chords' roots, as well as how many common tones each chord has. The roots of subdominant and dominant chords are further away from tonic in terms of their position than any other chord. Whether moving up or down from tonic in a scale, these chords are 4 to 5 steps away, whereas the mediant chords are only 3 steps away and the supertonic and leading tone chords are only 1 step away (Figure 13.8).<sup>37</sup>

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<sup>37</sup>One might note that the leading tone chord is furthest away from the tonic as it carries the seventh scale position. However, it is in fact closest to tonic as it is only a half step away from the tonic at the

**Figure 13.8** Tonic to Dominant/Subdominant Movement:  
Dominant in C:                      Subdominant in C:

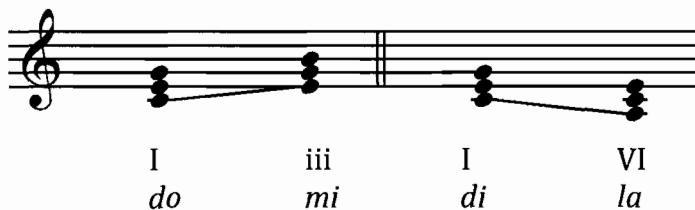


This large distance between the tonic and IV and V chords makes them ideal destinations for a chord progression, because it makes the harmonic movement sound as if it is “going somewhere,” more so than the mediant chords.

### Mediant and Submediant

The mediant chords are closer to the tonic at 3 steps away (Figure 13.9).

**Figure 13.9** Tonic to Mediant/Subdominant Movement:  
Mediant in C:                      Submediant in C:



You will notice that both mediant chords (iii and vi) share two tones in common with the tonic. Compare the notes of C (C—E—G) to E minor (E—G—B) and A minor (A—C—E). The nearness of the mediant’s root to tonic and the “closeness in sound” from sharing two common tones gives an aural impression that the harmony isn’t so much changing as a IV or V chord would, but more as if it is a variation. Mediant chords are sometimes used to shift the harmony away from the

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top of the scale. This means that the chords that are furthest away are those that carry a central position in the scale, i.e. subdominant and dominant chords.

tonic, thus keeping the progression moving along, without going immediately to a subdominant or dominant chord.

Listen to *The Glory of It All* by David Crowder for use of the mediant iii chord. This song uses the iii (D#m) in precisely this way, to shift the harmony while it is on its way to the dominant (F#) chord (Figure 13.10).

**Figure 13.10** The Glory of it All – David Crowder

B                      D#m                      F#

At the \_\_\_ start \_\_\_      He was \_\_\_ there, \_\_\_      He was \_\_\_ there. \_\_\_

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I                      iii                      V  
do                      mi                      sol

The submediant (vi) chord is used similarly. Compare its use in the opening phrase of the hymn, *Holy, Holy, Holy*. The submediant Am follows the tonic in this case, adding some harmonic interest where otherwise a tonic chord could have been sustained (Figure 13.11).

**Figure 13.11** Holy, Holy, Holy – Reginald Heber & John Dykes

C              Am              G              C              F                      C

Ho - ly, ho - ly, ho - ly!      Lord God al - migh - ty!

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I              vi              V              I              IV                      I  
do              la              sol              do              fa                      do

The chorus of *Everlasting God* has a similar situation, where a submediant vi chord is used in place of a tonic chord (Figure 13.12).





**Figure 11.14** Here I Am to Worship – Tim Hughes

E            B            F#m            E            B            A

Light of the world, you stepped down in-to dark - ness, opened my eyes, let me see. \_\_\_\_\_

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I            V            ii            I            V            IV  
do        sol        re        do        sol        fa

Now try playing this chord progression without the F#m, using instead the A in the 2<sup>nd</sup> measure. You will find that though this arrangement uses the supertonic chord on the second bar, it could have used the subdominant instead. However, the F#m adds a nice contrast to the A chord, keeping this phrase of music from becoming too repetitive.

Likewise, the vii<sup>o</sup> sounds close enough to a V that is used as a dominant. The hymn *O The Deep, Deep Love of Jesus* provides a good example of this. This song, which is in the key of E minor, uses modal borrowing to employ a major V chord (B) (Figure 11.15).

**Figure 11.15** O the Deep, Deep Love of Jesus – Samuel Francis & Thomas Williams

G            D F#            C E B D#            Em            A m            B            Em

vast, un - meas - ured, bound - less free,

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bIII    bVII/3    bVI/3    V/3            I            iv            V            I  
me    re    do    ti    do            fa            sol            do

Where a dominant seventh may be used, so may a leading tone chord. Compare the original version of this hymn (above) to this arrangement that uses a D#<sup>o</sup>7 leading tone chord (Figure 11.16).

**Figure 11.16** O the Deep, Deep Love of Jesus – Samuel Francis & Thomas Williams

G      D F#      C E B D#      E m      A m      D#°7      E m

vast,      un -      meas -      ured,      bound -      less      free,

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bIII    bVII/3    bVI/3    V/3      i      iv      vii°7      i  
*me re do ti do fa ti do*

In this case, the change in sound is not drastic when a leading tone chord is used as a dominant. It sounds much like a B/D# would, except that the chord has more internal tension.

We've discussed how each diatonic chord has particular tendencies to “pull” towards other chords. Though the above chord functions exist as the primary role for these chords, we will see in the following section how each of these chords may also resolve in a different way to create a particular kind of chord progression.

### **Circle of Fifths (Falling Fifths)**


If you recall the segment in Chapter 4 where we discussed the cycle of fifths, we found that the various keys could be organized in such a way to create a cycle that moved through all the keys by way of the interval of the 5<sup>th</sup>. Now, earlier in this chapter we saw how the dominant chord (which is a 5<sup>th</sup> away from tonic) has a particularly strong pull to tonic. These concepts, which have their differing applications, actually come together to explain a certain type of chord progression that has pervaded music for hundreds of years, the circle of fifths progression (also called “falling fifths”). This progression can be used in a strictly diatonic context or can be expanded to traverse all twelve chord/key possibilities in the cycle.

## Diatonic Fifths

This progression, in a diatonic context, does not move through all twelve keys, but by way of 5<sup>th</sup> movement, cycles through all seven diatonic chords of a given key, when played in its entirety. In this case, one of the intervals is a diminished fifth (between IV and vii<sup>o</sup>) (Figure 11.17).

**Figure 11.17** Cycle of Diatonic Fifths (in C):

C	F	B <sup>o</sup>	E <sup>m</sup>	A <sup>m</sup>	D <sup>m</sup>	G	C
---	---	----------------	----------------	----------------	----------------	---	---


I	IV	vii <sup>o</sup>	iii	vi	ii	V	I
do	fa	ti	mi	la	re	sol	do

It can be used in whole or in part, as we saw at the end of *Lord I Lift Your Name On High*. This song employs the last four chords in the cycle in the key of G:

vi→ii→V→I or E<sup>m</sup>→A<sup>m</sup>→D→G (Figure 11.18).

**Figure 11.18** Lord I Lift Your Name on High – Rick Founds

G	C	D	E <sup>m7</sup>	A <sup>m7</sup>	D	G
---	---	---	-----------------	-----------------	---	---

— From the cross — to the grave, — from the grave — to the sky: — Lord I lift your name — on high.

I	IV	V	vi <sup>7</sup>	ii <sup>7</sup>	V	I
do	fa	sol	la	re	sol	do

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## Perfect Fifths

The cycle may also be employed to traverse every possible chord (either in major or minor) when the fifth movement is restricted to perfect intervals (Figure 11.19).

**Figure 11.19** Cycle of Perfect Fifths:

C   F   B<sup>b</sup>   E<sup>b</sup>   A<sup>b</sup>   D<sup>b</sup>   F<sup>#</sup>   B   E   A   D   G   C

I   IV   bVII   bIII   bVI   bII   #IV   VII   III   VI   II   V   I  
do   fa   te   me   le   ra   fi   ti   mi   la   re   sol   do

However, in a real musical context, the entire cycle rarely runs full course, as such a lengthy progression could seem extremely protracted and indulgent. Often a composer, like he's on a train, will get off at one of the stops along the way. Take, for instance, the song *Give Thanks* by Henry Smith. In the chorus, the cycle in the key of F begins on an Am (iii) chord and runs through seven of the chords through to an Eb (bVII) where it "hops off the train" and wraps things up with a V7→I progression (Figure 11.20).

**Figure 11.20** Give Thanks – Henry Smith

A m7                  D m7                  G m7                  C7                  Fmaj7

now   let the   weak say, "I am   strong."   Let the   poor say, "I am   rich."   be-cause-of  
iii7                  vi7                  ii7                  V7                  Imaj7  
mi                  la                  re                  sol                  do

Bbmaj7                  Ebmaj7                  Eb/D                  C7                  F

what   the Lord   has   done   for — us.   Give   thanks.

©1978 Integrity's Hosanna! Music, arr. by the author

bIVmaj7                  bVIIImaj7                  bVII/7                  V7                  I  
fa                  te                  la                  sol                  do

Now that we are beginning to understand how chords relate to each other and move together to form larger musical phrases, we have many of the theoretical

tools we need to understand music to the degree that we can now create new progressions or manipulate existing ones to make fresh arrangements. This is the focus of the following chapter, which will deal specifically with the idea of molding the harmony of an existing tune, to bring out a different character or to even to breathe new life into a tired song.

## CHAPTER XIV

### CHORD SUBSTITUTION

In a sense, this is the chapter that everything in this book has been leading up to, and the one I have been most eager to write. The techniques described here are some of the most useful and also fun for church musicians who are looking to put their own creative footprint onto or revitalize old standards that may have become tired through overuse.

Chord substitution is the process of altering the chord structure of a preexisting composition. These techniques allow the arranger to manipulate and often improve on a song without changing the melody. As an arranger, my goal is to create a musical tapestry of songs that allows for enough familiarity that invites singers to participate confidently in worship, but also keep them engaged through fresh and exciting new sounds. With these techniques, we will learn how to manipulate the chord progressions of both new and old compositions in both subtle and more drastic ways that still uphold the familiarity and singability of the song.

Fundamentally, there are three ways to alter a song through chord substitution. One can change the chord structure of a song by removing chords to simplify the music, replacing chords to modify the music, and adding chords to make it more complex.

#### **Simplifying Chord Progressions**

Though this technique is not often needed for songs in a popular style, this is a very helpful technique when attempting to “contemporize” more traditional songs like hymns. In general, hymns contain a lot more chord changes per musical phrase than popular songs.

The origin of this stylistic difference lies in the instrumentation for which each respective style was intended. Hymns were composed to be able to be performed with little or no instrumental accompaniment. The “band” consisted of the congregation’s voices and maybe an organ or piano for accompaniment. The chords in each song were generated from how a singer could harmonize with the melody, usually in at least 4 distinct parts, soprano, alto, tenor, and bass (SATB). This kind of “part writing” allowed for quick changes in harmony, oftentimes at the rate of one chord per syllable. Later, when the instrumentation and compositional style changed to reflect popular music, with guitar being the primary accompaniment as opposed to a keyboard instrument, songs were written with far fewer chords. The guitar-driven accompaniment would usually vamp on a groove composing of a simple chord progression so a melody could be sung over the top of it.

Playing a hymn in the context of more contemporary instrumentation poses some challenges for musicians, especially for guitarists, who are not accustomed to quickly changing chord progressions that cover a lot of “harmonic ground”, so to speak. The unfortunate result of this is that many great songs of the faith are simply not heard ignored because they are too difficult to play, or the traditional arrangements are so different from modern ones that they sound antiquated.

Therefore, it can be extremely valuable for a church musician to be skilled in adapting these songs to the musical culture of the church so that they can better fit stylistically and be more accessible to the musicians who play them.

A complex chord progression can be made simpler by omitting chords and although this is often a simple enough process that one can do it quickly by ear, there are some factors that can make it difficult. Having more of a technical understanding of how to do this well is useful. Take the hymn *How Great Thou Art* as an example. Though this hymn was composed in the mid 1940s when songs were already on their way to becoming less harmonically complex, the traditional arrangement contains a lot more chords than most guitarists would care to play.



Here is the first phrase of the hymn followed by a two-step process for how to simplify this song into a more contemporary sounding arrangement (Figure 14.1).

**Figure 14.1** How Great Thou Art – Stuart Hine

Original arrangement of the first phrase of 'How Great Thou Art' by Stuart Hine. The score is in G major (two sharps) and 4/4 time. The lyrics are: "O Lord my God, when I in awe-some won-der con-si-der all the worlds Thy hands have made, I see the". The chords are: A, E7 B A C# D, D#C, A E, C#m E, B m E, E7, A.

©1949, 1953 Stuart Hine Trust

- 1) Leave only the chord on the first beat of each measure. One very easy way to make a rough simplification is to remove all chords except for the chord that is on the downbeat of each measure. Though this isn't a perfect method, it can get you started. Here is what the song would sound like with this first level of simplification (Figure 14.2).

**Figure 14.2** How Great Thou Art – Stuart Hine

Simplified arrangement of the first phrase of 'How Great Thou Art' by Stuart Hine. The score is in G major (two sharps) and 4/4 time. The lyrics are: "O Lord my God, when I in awe-some won-der con-si-der all the worlds Thy hands have made, I see the". The chords are: A, A, D, A E, A.

©1949, 1953 Stuart Hine Trust, arr. by the author

It is rare that using this step alone will make for an adequate arrangement. It is so rough that it eliminates some essential chords along with all the “unnecessary” ones. If you sing with this arrangement, you may find the song needs a chord change in parts where there is now none.

- 2) Add chords where needed. This is the more difficult step. Some songs need a lot of chords added. Oftentimes it can be difficult to determine where chords need to be added and what those chords ought to be. Listening to the melody along with the simplified version can help determine where chords ought to be added. Places where the melody lingers on notes that don't fit the chord well are key spots. Listening to this new arrangement you may find that in the first full bar at the word “awesome”, the melody moves to an F# which doesn't fit the A major very well. In the original version, the D major chord came in here rather than on the downbeat of the next bar. Moving the D back to this position would solve this problem (Figure 14.3).

**Figure 14.3** How Great Thou Art – Stuart Hine

O Lord my God, when I in awe-some won-der con-si-der

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Although revisiting the original harmony can often fix these issues, this isn't always the case. The third full bar has A/E and the fourth has A in this simpler version. It sits too long on the same chord. In my opinion, this arrangement could benefit from a different chord where changes of harmony were in the original, over the words “worlds Thy hands have”. To keep this arrangement simpler, we would not reinsert all the chords that were originally there (C#m/E→Bm/E→E7). When

attempting to determine which harmony one should use, choose the harmony that fits best with the melody for its full duration. In this case, the E7 works well. The resulting simplified arrangement of this phrase of music could look something like this:

**Figure 14.4** How Great Thou Art – Stuart Hine

O Lord my God, when I in awe-some won-der con-si-der

A E E7 A

all the worlds Thy hands have made, I see the

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### Replacing Chords

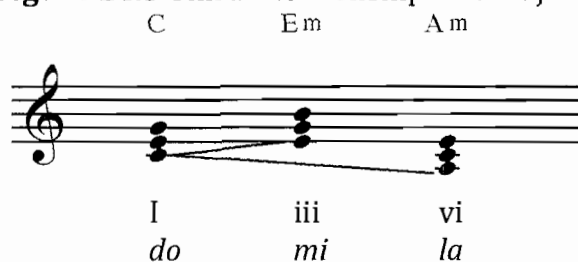
We have already discussed in the previous chapter how some chords may be used almost interchangeably due to the fact that they have tones in common. This is the fundamental principal behind most chord substitution. The more tones two chords have in common the more similar they sound and the more likely a chord substitution will work. Consequently, the most obvious and perhaps the easiest form of chord substitution is where the chord essentially stays the same, but is altered in some way, either through inversion or through the addition or removal of a tone from a chord. With this technique, the change is relatively subtle as two or more common are retained and the root is not changed.

We have already discussed this technique in some detail. However, some of the more interesting and challenging types of chord substitution occur when a new chord a new chord is used to replace an existing chord.

### Third Relationships

Finding chords that share two or more tones in common is a fairly simple matter. In a diatonic key, two chords share multiple common tones when their roots are a third apart. This is called a third relationship. For example, a C major triad and an E minor triad share two common tones because E is a third above C. The same is true for A minor, as its root is a third below C (Figure 14.5).

**Figure 14.5** Third Relationships – C Major



In theory, either of these two chords could be used to substitute for the original chord, C major. However, the degree to which a substitution of this kind would sound fitting or natural is dependent on the context wherein it is used. There are many factors that determine the effectiveness of a chord substitution in a song, but the two most important ones are the melody the chord supports and the surrounding chord progression.

A substituted chord may sound natural if the notes of the new chord harmonize well with the melody, but if they clash, then a substitution sounds more forced. For instance, if a song is using a C chord (C—E—G) to support the note C in the melody above, then a substitution of an Am (A—C—E) will not clash because C is the 3<sup>rd</sup> of Am. Furthermore, the other notes in Am (A and E) do not create dissonant intervals with C. However, a substitution of Em (E—G—B) would be less natural since an E minor triad does not contain the note C. It wouldn't give the melody strong harmonic support, in fact the B in an Em would sound very dissonant

against the melody, C. Experiment with this on the first chord of the hymn *Holy, Holy, Holy* (Figure 14.6.).

**Figure 14.6** *Holy, Holy, Holy* - John Dykes & Reginald Heber

C            A m            G            C            F            C

Ho - ly, ho - ly, ho - ly!            Lord God al - migh - ty!

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You should find that an Am would not clash while the Em will. However, the Em may be used to replace the C at the end of the phrase on the word “mighty”. Though theory can explain in terms of notes and intervals why some substitutions work better than others, these factors are usually quite easily discernable just by listening, making an effort to find a fitting substitution fairly simple.

Even though these various substitutions are possible with this hymn, the resulting chords might not benefit the song much when placed in the context of the overall chord progression. This leads to the next issue: that the chord should fit well in the chord progression of a song as well. However, this matter is slightly more complicated to address. Therefore, let us try to apply all the above principles of chord substitution in the context of another song where a change in chord progression is more readily beneficial. Earlier, while discussing chord inversion, we found that *Blessed Be Your Name* is an ideal candidate for chord change. This was because the song’s chord progression remains constant throughout its entirety, putting it at risk of become overly monotonous. By using chord inversion, we were able to make the song’s chord progression a little more dynamic. Likewise, a chord substitution placed somewhere in the middle of the song between verse and chorus might help to relieve much of the sameness. Attempting this technique on this tune will be a great example, since on the one hand, the repetitive nature of the song begs for some kind of change, while on the other hand, it is this very repetitive nature

that will resist chord substitution by causing any change to seem very obvious and perhaps out of place.

The phrase leading into the chorus is an ideal spot for us to use substitution. The melody here changes from what it was in the verse, setting it apart as a different section of music. Therefore, changing the progression here would be more expected. In addition, the nature of this phrase is to build anticipation that is fulfilled at the onset of the chorus, so putting in a different chord progression may help to create harmonic tension that would be “released” at the chorus when the original progression returns. Here is the portion of music with the original I—V—vi—IV chord progression (Figure 14.7).

**Figure 14.7** Blessed be Your Name – Matt & Beth Redman

The figure shows two staves of musical notation in treble clef with a key signature of three sharps (F#, C#, G#). The melody consists of quarter and eighth notes. The lyrics are written below the notes. Above the first staff, the chords B, F#, G#m, and E are indicated above the first four measures. Above the second staff, the chords B, F#, G#m, and E are indicated above the first four measures. The lyrics are: "Ev' ry bless - ing You pour out I'll turn back to praise. When the dark - ness clos - es in Lord, still I will say, 'Bles-sed be the".

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As we’ve stated, careful attention must be placed on how the substitution affects the overall chord progression and how the new chord interacts with the melody. In order for the new chord(s) to sound fitting and not sound overly contrived, the new chord should support the melody line and also help maintain the flow of the overall progression. Below is an example of how both of these factors must be in play for a substitution to serve the song well.

Now, according to the theory of third relationship, the progression B—F#—G#m—E could all be entirely replaced by diatonic chords a third away, either above or below. Here is an example of the first 4 measures of this phrase with third

related substitutions. Here, the G#m, D#m, and C#m are all a third below the original chords while the B is related by a third above the original root (Figure 14.8).

**Figure 14.8** Blessed be Your Name – Matt & Beth Redman

G#m                      D#m                      B                      C#m

Ev' ry bless - ing      You pour out I'll      turn back to      praise.

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vi                      iii                      I                      ii  
*la*                      *mi*                      *do*                      *re*

Though the new chord progression G#m—D#m—B—C# (vi—iii—I—ii) will work with the melody, it doesn't fit ideally into the context of the song. This kind of substitution is not beneficial, as its progression seems directionless and interrupts the flow of the song. An effective chord substitution not only fits with a melody, but also serves the overall chord progression by helping to propel the phrase forward. Look now at the arrangement below. There are several substitutions going on here, all of which work together to harmonize well the melody and create an effective progression through an ascending bass line. This is a simple way to maintain momentum in a chord progression (Figure 14.9).

**Figure 14.9** Blessed be Your Name – Matt & Beth Redman

B                      F#                      G#m                      E

Ev' ry bless - ing      You pour out I'll      turn back to      praise.

I                      V                      vi                      IV  
*do*                      *sol*                      *la*                      *fa*

G#m7                      F#A#                      C#m7      B:D#      E      F#

When the dark - ness clos - es in Lord, still I will say, "Bles-sed be the

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vi7                      V/3                      ii7      I/3      IV      V  
*la                      ti                      re      mi      fa      sol*

Notice now that we added a 7<sup>th</sup> to the first new chord, making it a G#m7. The 7<sup>th</sup> of G#m7 is an F# which is a note in the melody and a note that was a part of the original chord. In fact, the new chord contains all three tones of the original B chord making this substitution sound more fitting. When a substituted chord is related by a third below, as with G#m and B, adding the 7<sup>th</sup> to the substituted chord will create a four note chord that contains all three tones of the original triad. The illustration below shows how the original B triad (B—D#—F#) is contained in the new chord, G#m7 (G#—B—D#—F#) (Figure 14.10).

**Figure 14.10** Third relationship, B to G#m7:

B                      G#m7

I                      vi7  
*do                      la*

### Third Relationship Expanded

The technique of using third relationship to generate chords with 2 or even 3 common tones, can be expanded if one applies this technique multiple times over a series of chords, each time expanding the new chord to include the previous chord and a new root note a third below. This shows every chord in a particular key that shares 3 common tones with the original chord. For example, if you look at the C major triad that contains the notes C—E—G (R—3—5), the triad that is related by a



third below would be Am7 (A—C—E—G) and contains all the original tones of the C major triad. Doing this process again, now to the Am, results in a chord with the root F. This resulting chord would be an F major chord, but if we keep all the original pitches from the previous two chords, we have an expanded Fmaj9 (F—A—C—E—G). This process is illustrated below (Figure 14.11)

**Figure 14.11** Third Relationships, C to Am7 to Fmaj9:

C                  Am7                  Fmaj9

I                  vi7                  IVmaj9  
do                  la                  fa

Now, we can continue this process until each of the 7 tones of the scale is represented for possible substitution (Figure 14.12).

**Figure 14.12** Third Relationships Expanded:

C                  Am7                  Fmaj9                  Dm11                  Bø7(11)(b13)                  Gsus13                  Em13

I                  vi7                  IVmaj9                  ii11                  x<sup>38</sup>                  Vsus13                  iii13  
do                  la                  fa                  re                                   sol                  mi

Of course, many of the above chords are very far removed from the original C triad, and when put in the context of substitution they may sound overly complex, but this process shows how far this technique can go to reveal common tones among chords. Note that on three of the chords, certain tones have been omitted in order to avoid the highly dissonant m9 interval. Doing this helps clear up a lot of the

<sup>38</sup> A half-diminished chord with extensions above the seventh is almost unusable, but has been included for didactic reasons.

internal dissonance created by more complex chords. Another method for simplifying these harmonies is to retain the C chord while changing the bass note each time. The above example would be rendered thus (Figure 14.13):

**Figure 14.13** Third Relationships Expanded, Simplified:

Figure 14.13 shows a sequence of seven simplified C chords on a treble clef staff. The chords are represented by vertical bars with dots indicating the notes. The bass notes are connected by a line that descends from left to right. Below the staff, the chords are labeled with Roman numerals and solfège syllables:

C	C/A	C/F	C/D	C/B	C/G	C/E
I	I/6	I/4	I/2	I/7	I/5	I/3
do	la	fa	re	ti	sol	mi

Now using the above ideas in a more conservative way, let us apply them to build a fresh arrangement from our simplified version of *How Great Thou Art* (Figure 14.14).

**Figure 14.14** How Great Thou Art – Stuart Hine

Figure 14.14 shows the first two staves of the song "How Great Thou Art" in G major (two sharps) and 4/4 time. The chords are simplified to A and D. The lyrics are:

O Lord my God, when I in awe-some won - der con - si - der  
 all the worlds Thy hands have made, I see the

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The goal here will be to create an arrangement that is strikingly different, yet retains the song's original character and singability. As a general rule, when creating a new arrangement that will not be so different as to alienate a singing

congregation, the first chord of the tune should not be altered too dramatically. The first chord of the tune, if kept familiar, will help ease the congregation into singing the new arrangement by not throwing them off at the onset of the tune. Keeping key elements of the song familiar will give you more room to take liberties with other parts. For this reason, we have left the initial chord, A, unchanged and will apply our extended third related technique to the second chord, D.

### Modal Mixture

To approach this technique more conservatively at first, let us only move into the first extended third related chord. Passing through an initial Bm (or Bm7) would lead to a G#ø7. This substitution would work in theory but it may have too much tension to suit this tune. Rather than venturing further through our third related harmonies, we could resolve this issue by simply changing the new root (G#) to a G natural. Thought this note is not in the key of A major, but it can be borrowed from the parallel A minor. This G natural is outside of the diatonic system of A major, it sounds good in this context (Figure 14.15).

**Figure 14.15**

Figure 14.15 illustrates a chord progression in A major. The progression consists of four chords: D (I), Bm7 (vi7), G#ø7 (viiø7), and Gmaj9 (bVIImaj9). The notes for each chord are shown on a treble clef staff with a key signature of two sharps (F# and C#). The lyrics 'fa re ti te' are written below the notes.

Chord	Scale Degree	Lyrics
D	I	fa
Bm7	vi7	re
G#ø7	viiø7	ti
Gmaj9	bVIImaj9	te

Modal mixture (or borrowing) may be implemented for the purposes of substitution as well. The chord used in the above example, is part of the bVIImaj7 found in minor keys (Figure 14.16).

**Figure 14.16** Seventh chords using #6 and #7:

Figure 14.16 displays two staves of musical notation, each containing eight chords. The first staff shows chords for the syllables 'do', 'do', 're', 're', 'me', 'me', 'fa', and 'fa'. The second staff shows chords for 'sol', 'sol', 'le', 'la', 'te', 'te', 'ti', and 'ti'. The chord symbols are: i7, imaj7, ii<sup>ø</sup>7, ii7,  $\flat$ III<sup>b</sup>maj7,  $\flat$ III<sup>+</sup>maj7, iv7, IV7, v7, V7,  $\flat$ VI<sup>b</sup>maj7, vi<sup>ø</sup>7,  $\flat$ VII7,  $\flat$ VII<sup>b</sup>maj7, vii<sup>ø</sup>7, and vii<sup>ø</sup>7.

We will utilize this chord for our ongoing arrangement as a substitution of the IV chord (D) (Figure 14.17).

**Figure 14.17** How Great Thou Art – Stuart Hine


Figure 14.17 shows a musical notation for the song "How Great Thou Art" by Stuart Hine. The notation includes a treble clef, a key signature of two sharps (F# and C#), and a 4/4 time signature. The melody is written on a single staff with lyrics underneath. The lyrics are: "O Lord my God, when I in awe-some won - der — con - si - der". Above the staff, the chord symbols "A" and "Gmaj9" are indicated. Below the staff, the copyright information reads: "©1949. 1953 Stuart Hine Trust, arr. by the author".

Let's take the next chord in our arrangement of *How Great Thou Art*. After the newly substituted Gmaj9, the chord progression would return to a tonic A major chord, but we will take this opportunity to employ some more instances of modal mixture. To determine what chords may be used through modal mixture for substitution, let us apply the same techniques described above, but expand the harmonic possibilities to the parallel key. Here, we have the chord in question, A major, the modally borrowed equivalent A minor and some initial third related chords associated with it (Figure 14.18).

**Figure 14.18** Third Relationships, Modal Mixture

A major:                      A minor:

A                      A m      C      F      Dm9




I                      i      bIII      bVI      iv9

do                      do      me      le      fa

Of these options, we have chosen the C major chord to substitute the A major in this particular arrangement because it contains an E, which is the note we sing on the word “all” and because it progresses most naturally from Gmaj9.<sup>39</sup> If we desire to make the progression even smoother, we can extend the C triad up further in the key to become Cmaj7 (C—E—G—B), that way we aren’t transitioning from a 5-note extended chord to a triad. Remember that extended chords will fit better into a progression when they are among other extend chords (Figure 14.19).

**Figure 14.19** How Great Thou Art – Stuart Hine

A                      Gmaj9



O Lord my God, when I in awe-some won - der \_\_\_\_\_ con - si - der

I                      bVIIImaj9

do                      te

<sup>39</sup> Note that in the fourth bar of the original composition, the note following “all” on the word “the” was a C#, which would have been highly dissonant with the substituted Cmaj7 chord. To avoid such a dissonance, the melody has been changed to simply sustain the E, which harmonizes well with a Cmaj7. At times, changes to a known melody may be so inconsequential they will not confuse a worshipping congregation, though any change ought to be measured carefully in this regard.

Cmaj7                      E7                      A

all            the    worlds    Thy    hands    have    made,    I    see    the

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♭IIIImaj7                      V7                      I

*me                                  sol                                  do*

Now, the next few chord substitutions are critical for ensuring that this new arrangement retains the balance that the phrase had in the original tune. In order for the new progression to have a similar arc as the original, we end the phrase on the tonic (on the word “made”). Therefore, whatever chords we place between Cmaj7 and the A must bring us naturally from our current position in the parallel minor back to the tonic in the original key.

A variety of chords could be used to fit into this two-beat length section over the words “worlds Thy hands have”. The original E7 chord was held over both beats, but two or more chords could be substituted in its place. Here, we have inserted a chord on each beat to accompany the change in melody note from E to D. Both of these chords are taken from the parallel minor (Figure 14.20).

**Figure 14.20** How Great Thou Art – Stuart Hine

Cmaj7                      Em/A                      Dm6/A                      A

all            the    worlds    Thy    hands    have    made,    I    see    the

©1949, 1953 Stuart Hine Trust, arr. by the author

♭IIIImaj7                      v/4                      v6/5                      I

*me                                  do                                  do                                  do*

The first chord we’ve chosen, Em, works as a substitute, because it is the parallel minor alternative (v) to the original E7 (V7) and shares 3 common tones with the previous chord, Cmaj7. The following Dm6 is also taken from the parallel

minor (iv6) and harmonizes well with the melody. It also works to form an effective link between the Em and the A due the smooth voice leading between chords. We have added a tonic pedal note to these chords to further smooth the transition from these chords back to tonic. The diagram below includes a second staff to illustrate the voice leading of Cmaj7→Em/A→Dm6/A→A (Figure 14.21).

**Figure 14.21** How Great Thou Art – Stuart Hine

O Lord my God, when I in awe-some won-der con-si-der

I do IV fa

Cmaj7 Em/A Dm6/A A

all the worlds Thy hands have made, I see the

©1949, 1953 Stuart Hine Trust, arr. by the author

bIIIImaj7 v/4 iv6/5 I  
me do do do

Here is our finalized version of our arrangement of the first phrase of *How Great Thou Art*. Through the process of explaining why these chords work in place of the originals, you have become more acquainted with how chords relate and work in progression. The process of coming up with unique arrangements that also work will naturally become more intuitive as you merge your theoretical knowledge with your ears to hone your musical sensibilities (Figure 14.22).





sure that the new chords harmonize well with the melody and remember that you don't need to change *every* chord. A tasteful arrangement will maintain the integrity of the original composition while offering something fresh to challenge the listener (Figure 14.23).

**Figure 14.23** How Great Thou Art – Stuart Hine

The musical score is presented in three systems, each with a vocal line and a piano accompaniment line. The key signature is two sharps (F# and C#), and the time signature is 4/4. Chord changes are indicated above the notes.

**System 1:**  
 Chords: A, A, A9/C#, D, D°, D, E, A/E, E7  
 Lyrics: Then sings my soul, my sav-ior, God, to Thee; How great Thou

**System 2:**  
 Chords: E, E7, D/E, E, A, A, A9/C#, D, D°, D  
 Lyrics: art, how great Thou art! Then sings my soul, my sav-ior, God to

**System 3:**  
 Chords: E, E7/B, A/C#, Bm7/D, F#7/C#, Bm, E7, A  
 Lyrics: Thee; How great Thou art, how great Thou art!

## CHAPTER XV

### MODULATION

This final chapter on modulation covers a very crucial topic for the art of arranging music for a church service. Modulation, which is essentially the art of changing keys, is a highly useful, yet under-utilized musical technique in modern worship services. As many music directors desire to craft the music of a service to flow seamlessly from one element to the next, having the musical skill to transition between them becomes a very important skill. However, the technique to create a modulation that changes keys without producing an awkward sensation is not a simple matter, which is why it eludes many people. As a result, people who aren't comfortable employing modulation fear their inability to transition to different keys and often task themselves with creative ways to disguise or avoid it altogether. Rather than treating key change as an unfortunate speed bump in the worship service, by learning the art of modulation, one can embrace the musical possibilities inherent in the process and use the modulation to help foster an uplifting worship service. Harnessing the powers of modulation can be a very rewarding process, though Ralph Turek perhaps has said it more eloquently, "...discovering the secrets of a particularly beautiful but enigmatic modulation can produce a gratifying sense that a treasure has been unearthed."<sup>xviii</sup>

Creating a natural and artistic key change is a goal that has kept music composers and arrangers busy for a long time and as such, a variety of techniques have developed, which have proven to work well when employed in the right manner. The types of approaches vary. Some nearly abandon the idea of a smooth transition altogether while others demand the composition of complex passages of music in order to transition the listener from one key to the next. As a result, some techniques will seem more immediately useful, while others may take a great degree

of thought (and practice) to employ successfully. All techniques will be discussed in detail, however, as each one creates its own effect on the music, each can be useful depending on the musical context and the desires of the music arranger. Also, we will see how each technique can be used to change keys between songs as well as in the midst of a song.

There are six main techniques used in music from classical to modern rock to facilitate modulation: direct, common chord, common tone, chromatic, enharmonic, and sequential modulation, and each one works in a unique way to string two different keys together.

### **Direct Modulation**

This is the classic pop song modulation. It is called direct modulation, because there is no transitional music involved, the song suddenly continues in a new key. As there is no transitional material needed to create a direct modulation, a discussion of how to employ it between songs is irrelevant. Therefore, we will focus on how this technique is used to change keys in the midst of a song.

Though a direct modulation could happen at any moment and move to any key, generally a direct modulation will lead to a new key either a semitone or a whole tone above the initial key. So, a song in the key of C will likely modulate up to C# or D. The reason for this is because a direct modulation is often employed to heighten the excitement of a song and “step on the gas,” so to speak, for the final verse or chorus of a song. The raised pitch center causes the singer to sing a little higher (and perhaps with more fervor). The below example of *Everlasting God* shows a simple direct modulation moving from the key of B major to C major in a repetition of the song’s chorus. This modulation is considered direct because the chorus is simply repeated in a new key without any sort of linking chord to ease the transition (Figure 15.1).

**Figure 15.1** Everlasting God – Brenton Brown & Ken Riley

The musical score consists of two staves. The first staff begins with a treble clef, a key signature of two sharps (F# and C#), and a 4/4 time signature. The melody starts on a whole note G#4, followed by quarter notes A#4, B4, C#5, D5, E5, and a half note D5. The lyrics are: "You do not faint, You won't grow wear - y." Chord symbols above the staff are G#m and E. Below the staff, the notes are labeled with solfège: *vi* (G#), *la* (A#), *do* (C#), *IV* (D), *fa* (F#), *C/E* (E), and *F* (F#). The second staff continues the melody with quarter notes G#4, A#4, B4, C#5, D5, E5, and a half note D5. The lyrics are: "You are the ev - er - last - ing God, the ev -". Chord symbols above the staff are C and F. Below the staff, the notes are labeled with solfège: *I* (G#), *do* (A#), *I/3* (B), *mi* (C#), *IV* (D), and *fa* (E). The copyright notice "©2005 Thankyou Music" is located at the bottom right of the score.

As no chord is used to link the two keys together, arrangers will often use rhythm to create a transition between keys. Sometimes, when a direct modulation seems awkward, an arranger will create space between the two keys by inserting one or more beats of rest to create sonic space between the two sections. For example, a typical situation would be to have all the pitched instruments (non percussion instruments) rest while the space is filled in by drums with a drum break of some kind or merely a snare hit on the last beat of the E chord in the old key. Another technique might be to use some change in rhythm that builds into the next key over the last few beats of the old key. For example, a common technique would be to build into the next key through driving eighth notes for a few beats and transition back into a more “flowing” rhythm upon reaching the new key. Though this technique is borderline cliché, it certainly is an effective way to create a more natural transition in a direct modulation.

Another rhythmic technique sometimes used to facilitate transition is the addition of beats between keys. Oftentimes, an arranger might add a few extra bars of musical space to cushion the abrupt change of keys by delaying the key change a few beats or allowing a few extra beats of the new key before singing to let the new

key “settle in”. Here, we have a modulation from the key of A major to B major in a repetition of the chorus of *Mighty To Save* (Figure 15.2).

**Figure 15.2** *Mighty to Save* – Reuben Morgan & Ben Fielding

D                      A              F#m                      E                      B  
 con-quired the grave. — Je-sus con-quired the grave. — Sav-ior, He can move the —  
 ©2006 Hillsong Publishing, arr. by the author  
 IV                      I              vi                      V                      I  
 fa                      do              la                      sol                      do

This transition seems fairly natural, but if one wanted to add time between the two phrases, one could simply add a few beats onto the last chord of the first key or onto the first chord of the next key; though you may find that one produces a more pleasing result than the other. The first example shows the addition of two beats (indicated by the 2/4 bar) onto the final E chord for the first phrase. This addition of time seems to delay the modulation in a fairly natural way that may help to “cushion” the abruptness of the transition (Figure 15.3).

**Figure 15.3** Adding 2 beats to the last chord in the original key:

F#m                      E                      B  
 con-quired the grave. — Sav - ior, He can move the

However, if you were to add two extra beats ahead of the next phrase in the new key, you may find the result robs the key change of some potency. Therefore, as you arrange the music to facilitate a key change, you must keep your ears “on” to ensure that you are producing the best results in your arrangement.

Adding 2 beats to the first chord in the new key (Figure 15.4):




Below is an example of a common chord modulation that moves a progression from the key of G to the key of C. As both keys share an Em in common (vi in G and iii in C), this chord helps link the two keys together (Figure 15.6).

**Figure 15.6** Common Chord Modulation:

Key of G major:

Key of C major:

C	G	D	Em	F	C	G	A m
---	---	---	----	---	---	---	-----



IV	I	V	vi / iii	IV	I	V	vi
fa	do	sol	la / mi	fa	do	sol	la

When one uses a pivot chord to modulate to a closely related key in the middle of a song, careful attention must be placed on how this affects the melody. The reason here is that the new key will cause a leap up or down in the melody's tessitura (or range). If the leap were very large, one could risk losing the participation of an unprepared singing congregation. This common chord modulation uses a pivot chord to bridge the keys of A and E for a repeat of the chorus of *Mighty To Save* in a new key (E is the pivot chord). However, the jump in tessitura here is so large that it would most likely shock a congregation out of singing – if they could even sing in that range it all (Figure 15.7).

**Figure 15.7** *Mighty To Save* – Reuben Morgan & Ben Fielding

F#m	E	E	B
-----	---	---	---



con-quered the grave. — Sav-ior, He can move the — moun-tains. My God is

vi	V	I	V
la	sol	do	sol

However, a clever use of modulation can make for a creative song arrangement that won't be overly challenging for a congregation. Using this change in tessitura to our advantage, we can arrange songs in ways that wouldn't have worked well otherwise. For example, if one desired to begin *Mighty To Save* with the bridge music and later returned to it, it would be difficult to do so without feeling like one had "given away the ending". The bridge of many songs functions as a climax, which is often facilitated by a melody that is relatively higher in range. It is thus reserved for near the end of a song, because singing it too early would make the following sections seem deflated and the anticipation usually created would probably be disrupted. However, one can work around this by setting an initial presentation of the bridge music in a lower key, where the melody sits in a lower tessitura, and then modulate to the original key for the rest of the song. This ensures that a singer won't have a "haven't-we-already-done-this?" sensation when the climax of the song occurs at the bridge. Below is an example of how a pivot chord is used to modulate from the bridge in C (not shown) to the key of D and then to the 1<sup>st</sup> verse in the original key of A (Figure 15.8).

**Figure 15.8** *Mighty To Save* – Reuben Morgan & Ben Fielding

G                      D                      A                      D

for the glo-ry \_\_\_ of the ris-en \_\_\_ King. \_\_\_                      Ev 'ry one needs com-pas -

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IV                      I                      V                      IV  
fa                      do                      sol                      fa

In this example, the modulation of these two keys is cushioned by the A chord on the word "King". It is a V chord in the key of D, but tonic in the key of A. This commonality allows the song to pivot smoothly to the next key.



The pivot chord may also be used between songs of differing keys when one desires a seamless musical transition from one song to the next. In these cases, a song can segue immediately into the next one or a transition can be facilitated by a musical interlude. If the final chord of a song begins with the first chord of the next key, then this chord can be used as the pivot chord and no other chords need be added.

If a pivot chord modulation were to be created between *Blessed Be Your Name* in B major and *Here I Am To Worship* in E major, then the E major chord links the two keys as it is both the IV chord in B and the tonic in E (Figure 15.9).

**Figure 15.9** Blessed be Your Name – Matt & Beth Redman / Here I Am to Worship – Tim Hughes

name of the Lord, bless-ed be Your glo - ri - ous name.

I V vi V  
do sol la sol

E E B F#m

— Light of the world, you stepped down in - to dark - ness,

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IV I V ii  
fa do sol re

However, if *Blessed Be Your Name* were sung in another key instead, like A major, then the final IV chord (D) couldn't be used as a pivot chord since it is not in the key of E. However, an A major triad is shared between the keys; it is I in A major and IV in E major (Figure 15.10).

**Figure 15.10** Blessed be Your Name – Matt & Beth Redman / Here I Am to Worship  
– Tim Hughes


D A E F#m E  
 say, "Blessed be the name of the Lord, blessed be Your glo - ri - ous name. —  
 IV I V vi V  
*fa do sol la sol*  
 D A E B F#m  
 — Light of the world, you stepped down in-to dark - ness,  
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 IV I I V ii  
*fa do do sol re*

### **Common Tone Modulation**

In a similar fashion to common chord modulation, a single tone may be used to link two keys together. In this case, a common tone transition is made when an instrument (or instruments) sustains or repeats a single pitch (held over from the previous chord) until the chord in the next key sounds. However, as only a single tone is used rather than a triad, the degree of possibilities for what two keys may be linked together is greatly increased. For instance, if a song were to end on a C major triad, each of the three tones in the triad could be used to link to the next key. The first chord of the following key could be either major or minor and contain the common tone as one of its three tones. The diagram below shows that each of the three tones of a triad could be the member of a major and a minor chord where that tone is either the Root, third, or fifth. This creates 6 different possibilities for each tone of the C major triad and a total of 12 different chord possibilities (Figure 15.11).


**Figure 15.11** Common Tone Modulation Possibilities, C Major:

C



I  
do


Common tones on the root:

	C	C m	A <sup>b</sup>	A m	F	F m
	root	root	third	third	fifth	fifth
do	do	do	mi	me	sol	sol

Common tones on the third:

	E	E m	C	C <sup>#</sup> m	A	A m
	third	root	root	third	third	fifth
mi	do	do	mi	me	sol	sol

Common tones on the fifth:

	G	G m	E <sup>b</sup>	E m	C	C m
	fifth	root	root	third	third	fifth
sol	do	do	mi	me	sol	sol

As the diagram above shows, a C chord could be linked by common tone to a Cm, C<sup>#</sup>m, E<sup>b</sup>, E, Em, F, Fm, G, Gm, A<sup>b</sup>, A, or Am chord. This means that at least this many keys can be linked to a C chord through a common tone, since each of these chords could be the tonic of the new key or simply a chord diatonic to the new key.

As there is a wide range of possibilities for where to modulate, common tone modulation allows for the modulation between two more distantly related keys (keys not near each other in the cycle of fifths). Furthermore, since instrumentation

is often drastically reduced during modulation (often to a single instrument with holding one sustained pitch) the rhythm can break altogether. This rhythmic “dead space” may allow for two songs with very different meter or tempo to be linked together as well.

For example, observe how *In Christ Alone* can be linked to *O Praise Him* through a common tone. *In Christ Alone* is written in the key of D and is in a moderate 3/4 meter while *O Praise Him* is in the key of B $\flat$  with a quick 4/4 meter. However, since D major (D—F $\sharp$ —A) and B $\flat$  major (B $\flat$ —D—F) both share the note D, this tone may be used as a common tone to transition between these two very different-sounding songs (Figure 15.12).

**Figure 15.12** *In Christ Alone* – Keith Getty & Stuart Townend / *O Praise Him* – David Crowder

G D F $\sharp$  Em A D B $\flat$

The figure shows a musical staff with a treble clef and a key signature of one sharp (F#). The first part of the staff is in 3/4 time and contains the notes G4, D5, F#5, E5, A5, and D5. A double bar line follows. The second part of the staff is in 4/4 time and contains the notes Bb4, D5, F5, and Bb4. The D5 note in the second part is aligned with the D5 note in the first part, illustrating a common tone transition.

pow'r of Christ I'll stand. — Turn your ear — to hea-

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IV I/3 ii V I root / third I(2)  
fa mi re sol do do / mi do

### **Chromatic Modulation**


Other than direct modulation, every modulation technique discussed thus far has used some form of diatonic “link” between two different key areas to facilitate a smooth musical transition. However, this is not the only way to create a musical transition between keys. Rather than using diatonic similarities to link keys together, the remaining types of modulation employ some type of chromatic shift in harmony that will steer the progression towards a new key.

Chromatic modulation uses secondary dominants to direct a chord progression to a new key. As we found in Chapter XII, a secondary dominant is a major chord taken from the dominant scale degree of a different key, but until now

we have not seen songs that stay in the new key after a secondary dominant is used. The below example shows how Keith & Krystyn Getty's 2006 recording of *In Christ Alone* shows how chromatic modulation may be effectively used even in the midst of a song. In the 3<sup>rd</sup> stanza, Keith Getty employed a secondary dominant to raise the key from C major to D $\flat$  major (Figure 15.13).

**Figure 15.13** In Christ Alone – Keith Getty & Stuart Townend


G <sup>sus</sup>	G	F	C	F	G	C/E	F	C/EDm	G
------------------	---	---	---	---	---	-----	---	-------	---



There in the ground His bo - dy lay, light of the world by dark - ness

V <sup>sus</sup>	V	IV	I	IV	V	I/3	IV	I/3	ii	V
sol	sol	fa	do	fa	sol	mi	fa	mi	re	sol

G <sup>sus</sup>	G	A $\flat$ 7	D $\flat$	G $\flat$	A $\flat$	D $\flat$ /F
------------------	---	-------------	-----------	-----------	-----------	--------------



slain. Then burst - ing forth in glor - ious day, up from the

V <sup>sus</sup>	V	VI7 / V7	I	IV	V	I/3
sol	sol	le / sol	do	fa	sol	mi

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This modulation works particularly well because the notes being sung on the word “bursting” over the secondary dominant A $\flat$ 7 are both in the original key and the new key. This C natural is the tonic in C major and the leading tone in D $\flat$  major, furthermore it is the third of the A $\flat$  major chord. Whereas other secondary dominants might not have common tones with the original key, this helps create a rather delightful moment in this arrangement. Needless to say, it is very appropriate to raise the pitch center over the verse that says, “He rose again.” The one thing that could make this transition awkward is the fact that two of the notes over the words, “Then burst-” were changed from their original pitches. However, this alteration is trivial enough that it makes employing such a modulation well

worthwhile. For comparison, see the third stanza without a key change or altered melody (Figure 15.14).

**Figure 15.14**

Gsus G F C F G C/E F C/EDm G

There in the ground His bo - dy lay, light of the world by dark - ness

Gsus G F C F G C/E F C/EDm G C

slain. Then burst - ing forth in glor - ious day, up from the grave He rose a - gain. And as He

Keith & Krystyn Getty's *In Christ Alone* employs a second modulation between the third and fourth stanzas in an eight-bar musical interlude. This chromatic modulation is similar to the first, also using a secondary dominant to bring the pitch center up another half step from  $D\flat$  to  $D$  (Figure 15.15).

**Figure 15.15** *In Christ Alone* – Keith Getty & Stuart Townend

$A\flat m7$   $E\flat m7$   $G\flat$   $A\flat 7sus4$   $D\flat$   $A\flat m7$

$E\flat m7$   $G\flat$   $A\flat 7sus4$   $A7$   $D$

No guilt in life, no fear in

ii7 IV V7sus4 #V7 / V7 I

re fa sol si / sol do

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Due to the nature of chromatic modulation to seem abrupt compared to modulations that use common tones, the chord progression used to modulate between keys is often extended by one or more chords. Thus, instead of immediately moving from a V7 to a tonic in a new key a ii7—V7—I progression is often employed to delay the modulation. It is done most smoothly when the ii7 chord shares one or more tones in common with the previous chord. In the next example, a ii7—V7—I progression in C major (Dm7—G7—C) is used to modulate from the key of D. Both D $\flat$  (D $\flat$ —F—A $\flat$ ) and Dm (D—F—A) share F in common, making this progression seem more natural (Figure 15.16).

**Figure 15.16** In Christ Alone – Keith Getty & Stuart Townend

$A^{\flat}m7$                        $E^{\flat}m7$                        $G^{\flat}$                        $A^{\flat}7sus4$

$D^{\flat}$                        $Dm7$                        $G7sus4$                        $C$

No guilt in life, no fear in

©2001 & 2006 Thankyou Music

I                      ii7                      V7sus4                      I  
*do*                      *re*                      *sol*                      *do*

Having discussed direct, common chord, common tone, and chromatic modulation we've covered the four most common techniques for modulation. However, two other techniques remain that are as interesting as they are unusual. Enharmonic modulation and sequential modulation are not at all common in popular music, much less contemporary Christian music, but as such they perhaps represent an unexplored frontier of creativity through modulation within these musical genres.


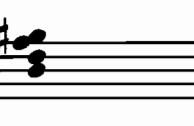
## Enharmonic Modulation

Enharmonic modulation is a form of modulation wherein a given chord acts as a pivot point modulating to a key where the chord is only common to each key through an enharmonic respelling of the chord's notes. Though instances where this kind of chord relationship can occur is limited, enharmonic modulation offers possibilities for a smooth modulation to radically different keys which would have been otherwise difficult to transition to. The chords that offer the most potential here are chords that contain intervallic symmetry, such as fully diminished seventh chords and augmented triads, however dominant seventh chords can offer some possibilities as well. We will discuss the application of each type below.

### Fully Diminished Seventh Applications

A fully diminished seventh chord may be respelled into a variety of other chords through enharmonic equivalence. For instance, the B<sup>°</sup>7 chord (vii<sup>°</sup>7 in the key of C) contains an A<sup>b</sup> whose enharmonic equivalent is G<sup>#</sup>. If the chord were respelled this way to have the pitches B—D—F—G<sup>#</sup>, this new chord would be an inverted G<sup>#</sup>°7 triad (vii<sup>°</sup>7 in A) (Figure 15.17).

**Figure 15.17** Fully Diminished Seventh Enharmonic Respelling:

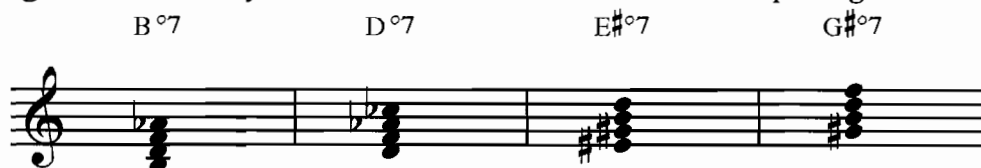
B <sup>°</sup> 7		G <sup>#</sup> °7
		
A <sup>b</sup>		G <sup>#</sup>
F		F
D		D
B		B

The fully diminished seventh chord contains four tones, which are separated by a minor 3<sup>rd</sup>. Due to the symmetry of the fully diminished seventh, the chord may be respelled through enharmonic equivalence so that a new chord may be built from



each of the four tones of the chord. We already found that the B<sup>°</sup>7 is vii<sup>°</sup>7 in the key of C, while a simple respelling results in a vii<sup>°</sup>7 in the key of A. Furthermore changing the B to a C<sup>b</sup> results in a D<sup>°</sup>7 (key of E<sup>b</sup>). Changing A<sup>b</sup> to G<sup>#</sup> and F to E<sup>#</sup> results in an E<sup>#</sup>7 (key of F<sup>#</sup>). Therefore a single fully diminished seventh chord may be reinterpreted in four different keys (Figure 15.18).

**Figure 15.18** Fully Diminished Seventh Enharmonic Respelling:




Though the process whereby we achieve these enharmonically-related chords might seem complex, the resulting application is a fairly simple one: each tone of the chord represents a potential root that implies a potentially new key area. The diagram below shows a chord progression employing an enharmonic modulation from C<sup>m</sup> to A major (two very disparate keys) in a rather smooth fashion using a respelled fully-diminished seventh.

Here the chord begins with a rather conventional i—iv—V7—vii<sup>°</sup>7—i (C<sup>m</sup>—F<sup>m</sup>7—G7—B<sup>°</sup>7—C<sup>m</sup>) progression in the key of C<sup>m</sup>, but on the second pass through this same chord progression, the vii<sup>°</sup>7 is respelled as a G<sup>#</sup>7 to act as a pivot chord to the key of A (C<sup>m</sup>—F<sup>m</sup>7—G7—G<sup>#</sup>7—A). (Figure 15.19)

**Figure 15.19** Enharmonic Modulation, Diminished Application:

Cm	Fm7	G7	B <sup>o</sup> 7	Cm	Fm	G7	G <sup>#</sup> 7	A
----	-----	----	------------------	----	----	----	------------------	---




i	iv7	V7	vii <sup>o</sup> 7	i	iv	V7	#v <sup>o</sup> 7 / vii <sup>o</sup> 7	I
do	fa	sol	ti	do	fa	sol	si / ti	do

If composing such a chord progression does not seem too out of reach, the greater challenge will lie in employing such a technique in the context of a worship service where one attempts to create a seamless flow of music from one song to the next. Let us attempt modulation between two songs using these same keys.

*Awesome God* by Rich Mullins could utilize an enharmonic modulation to transition from the key of C minor to *Mighty To Save* (in A) by taking a B<sup>o</sup>7 and respelling it as a G<sup>#</sup>7. In the example below, the G<sup>#</sup>7 is used as part of an ending “tag” of the last line of the song that is used as a modulatory passage that transitions to the following key (Figure 15.20).

**Figure 15.20** *Awesome God* – Rich Mullins / *Mighty to Save* – Reuben Morgan & Ben Fielding

A <sup>b</sup>	E <sup>b</sup>	Fm7	G7	Cm
----------------	----------------	-----	----	----



wis - dom, —	pow'r and love, our	God is an awe - some	God.	Our
le	me	fa	sol	do

Fm7	G7	G <sup>#</sup> 7	A sus4	A	D
-----	----	------------------	--------	---	---

God is an awe - some	God. —	Ev 'ry one needs compas -
----------------------	--------	---------------------------

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iv7	V7	#v <sup>o</sup> 7 / vii <sup>o</sup> 7	Vsus4	V	IV
fa	sol	si / ti	sol	sol	fa

### Augmented Applications

Like the fully-diminished seventh chord, the augmented triad is symmetrical, yielding possible enharmonic spellings. Each augmented triad can be respelled enharmonically, which will allow for different possible resolutions. If we recall our discussion of augmented triads from Chapter VIII, we will remember that the augmented triad has a dissonant augmented fifth, which has a tendency to resolve either up or down. For example, a C+ (spelled C—E—G#) could resolve to a C major triad if the fifth were to descend by a half step, or Am, F, or Fm triads if the fifth were to move up by half step.

Under enharmonic modulation, the symmetrical augmented triad may be respelled into two other augmented triads. A respelling of the triad creates a new root and thus a new fifth with two other possible resolutions. Thus, with enharmonic respelling, there are 6 possible resolutions for one collection of tones that form a single augmented triad (Figure 15.21).

**Figure 15.21** C Augmented Triad, Its Enharmonic Respellings and Possible Resolutions:

The figure illustrates the C augmented triad and its enharmonic respellings and resolutions. It is organized into three rows, each showing a different augmented triad and its two possible resolutions.

- Row 1:** C+ (C, E, G#) | C (C, E, G) | Am (A, C, E)
- Row 2:** E+ (E, G, B#) | E (E, G, B) | C#m (C#, E, G)
- Row 3:** Ab+ (Ab, Cb, Eb) | Ab (Ab, Cb, Eb) | Fm (F, Ab, Cb)

Let us explore what advantage an enharmonic respelling of an augmented chord brings. Remember that the dissonant fifth in the augmented chord tends to resolve by step either up or down, meaning that it is succeeded by either the major triad sharing the same root (downward resolution) or a minor triad with root a m3 below (upward resolution), e.g., a C+ resolves to either C or Am. In the context of a simple chromatic modulation involving an augmented triad, the chord could only serve to steer the harmony to keys containing the two resulting chords. Thus, a C+ could only modulate to keys containing C or Am (the keys of C, Am, F, Dm, G, Em, or Fm).<sup>40</sup>

However, the possibilities under enharmonic respelling make the augmented triad an extremely versatile tool for modulation. Through enharmonicity, the dissonant fifth may be reassigned to a new note in the triad and result in four more resolutions that create even more possibilities for modulation. For instance, when the C+ is reinterpreted as its enharmonic equivalent E+, the possible resolutions then become E and C#m producing E, C#m, A, F#m, B, G#m, and Am as possible key areas. Likewise, if it were respelled as Ab+ (or G#+)<sup>41</sup>, the resolution to Ab or Fm would include Ab, Fm, Db, Bbm, Eb, Cm, and Dbm. A single augmented triad may thus easily modulate to 18 of the 24 major and minor keys.

Let us now see how a modulation would sound using this technique. Attempting a modulation from a song in the key of G to one in the distant key of Eb, we could compose a short musical interlude where an enharmonic modulation can take place. In Chapter VIII, we discussed augmented triads and found that the Matt & Beth Redman song *Let My Words Be Few* contains such a chord. This song provides the perfect opportunity to modulate by using an augmented triad, because this type of chromaticism is native to this song. Therefore, taking the initial chord

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<sup>40</sup> Of course modal borrowing would yield even more key areas. But for the sake of simplicity, the options have been restricted to chords diatonic to the resulting key with the exception of the V in minor, which though it isn't diatonic, is a common modally borrowed chord to be included.

<sup>41</sup> In this instance, the enharmonic respelling of C+ to G#+ is respelled further to Ab+ in order to avoid the rarely notated keys of G#, E#m, A#, D#, and B#m.

progression of the song, which uses this chord, we can utilize this as a framework for our modulatory passage moving from the key of G to E $\flat$ .

Below we have an example of the unaltered version of the verse's chord progression for *Let My Words Be Few* (G $\rightarrow$ G $^+$  $\rightarrow$ Em/G $\rightarrow$ C) followed by the modulatory section based on the prior chord progression (G $\rightarrow$ E $\flat^+$ /G $\rightarrow$ Cm/G $\rightarrow$ A $\flat$ ). At the second approach of the augmented chord, the D $\sharp$  has been respelled to its enharmonic equivalent E $\flat$ . Respelled in root position, this new triad would be E $\flat$ —G—B, an E $\flat^+$  triad. Because the new fifth of the chord is B, its most natural tendency would be to move up a half step to C, just as the D $\sharp$  of the G $^+$  chord moved to E. The subsequent chord would be a Cm/G triad instead of Em/G. Since the Em/G was a vi chord in G, Cm/G could be vi chord as well, but in the new key (E $\flat$ ). Following suit with a natural unfolding of the progression (I $\rightarrow$ I $^+$  $\rightarrow$ vi $\rightarrow$ IV), the next chord would be the IV in E $\flat$ , thus A $\flat$ . Now, solidly in the key of E $\flat$ , IV can resolve back to I and begin the next song in the new key (Figure 15.22)

**Figure 15.22** Enharmonic Modulation, Augmented Application:

G	G $^+$	Em/G	C	
I	I $^+$	vi/3	IV	
do	do	do	fa	
G	E $\flat^+$ /G	Cm/G	A $\flat$	E $\flat$
I	$\flat$ VI $^+$ /3 / I $^+$ /3	vi/5	IV	I
do	do / mi	mi	fa	do

The next song could be any that may be played in the key of E $\flat$ , but we have chosen one with a similar tempo, Chris Tomlin's *We Fall Down*. Here, we have this



### ***Tritone Substitution***

A modulation may be achieved through a respelling of the dominant seventh's tritone – the diminished fifth interval between the chord's third and seventh tones. For instance, the third and seventh of a V7 in the key of A major (E7) is G $\sharp$  and D, respectively. These tones may be respelled as D and A $\flat$ , which make up the third and seventh of a B $\flat$ 7 chord (B $\flat$ —D—F—A $\flat$ ). As each chord contains at least two common tones, they are able to substitute for each other and modulate to their respective keys. Thus, E7, dominant seventh in the key of A, may be used to modulate to the key of E $\flat$  (whose dominant seventh is a B $\flat$ 7). Likewise, a B $\flat$ 7 chord may be used to substitute for the V7 chord in the key of A (E7). If the altered dominant chord, 7 $\flat$ 5, is used, this provides a smoother resolution, since the  $\flat$ 5 is the tonic in the next key (Figure 15.24).

**Figure 15.24** Tritone Substitution:

The theory used to explain this principle may seem involved, but the result can be summed up with a simple rule. A V7 chord may resolve down by one half step to a tonic, whose key is a tritone away. The arrangement below uses this technique to create modulation between two distantly related keys, A and E $\flat$  (Figure 15.25).

**Figure 15.25** Mighty to Save – Reuben Morgan & Ben Fielding / We Fall Down – Chris Tomlin

D A F#m E E E7(b5)  
 con- quered the grave. — Je- sus con- quered the grave. —  
 IV I vi V V V7(b5)  
*fa do la sol sol sol*  
 E $\flat$  E $\flat$  B $\flat$  C m  
 We fall — down, — we lay our — crowns — at the feet  
 I I V vi  
*do do sol la*

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### Augmented Sixth

Another enharmonic modulation may be achieved by renaming the dominant seventh chords seventh tone. For example, a G7 (G—B—D—F) may have its 7<sup>th</sup> respelled to E $\sharp$  to create the interval of an augmented sixth (enharmonic to a m7). The resulting G( $\sharp$ 6) (G—B—D—E $\sharp$ ) finds its application not in the key of C, but as a German Augmented sixth chord in the key of B (Figure 15.26).

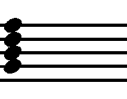


**Figure 15.26** Dominant Seventh Enharmonic Respelling:

G7 G( $\sharp$ 6)  
 V7 Ger+6



Music theory identifies three varieties of augmented sixth chords, Italian, French, and German, but for our purposes, we will only examine one.<sup>42</sup> The German Augmented 6<sup>th</sup> chord, abbreviated Ger+6, is a major chord with an added augmented 6<sup>th</sup> tone. This chord, which appears almost exclusively in classical music, has a distinctive name due to the special manner in which it is used. Though it is enharmonic to a dominant seventh chord, its conventional means of resolution looks quite different. The Ger+6 appears only on the b6 scale degree in either a major or minor key and usually resolves to a I chord in 2<sup>nd</sup> inversion. This is due to the fact that an augmented sixth interval will resolve outward to an octave rather than inward to a major or minor sixth, as with the dominant seventh. See diagram below (Figure 15.27).

**Figure 15.27** German 6<sup>th</sup> Resolution:


Resolution of Dominant 7 <sup>th</sup> :		Resolution of German 6 <sup>th</sup> :	
G 7	C	G (#6)	B/F#
			
V7	I	Ger+6	I/5
<i>sol</i>	<i>do</i>	<i>le</i>	<i>sol</i>

The most common unfolding of this chord progression would be to pass through the V chord (F#) and return to a root position B (Ger+6→I/5→V→I). When used in the context of enharmonic modulation, this respelling of the dominant 7<sup>th</sup> (most likely a V7 chord) to a Ger+6 allows for a quick modulation to the key a half step below. The example below shows this modulation, moving from the key of C to the key of B by means of the chord progression – in C: I→vi→V→V7 (in B: Ger+6)→I/5→V→I (Figure 15.28).

<sup>42</sup> These fanciful names find their history in development of western European classical music and though their names seem to imply certain regional origins, there is no historical evidence for this.

**Figure 15.28** Enharmonic Modulation, German 6<sup>th</sup> Application:

C	A m	G	G7	B/F#	F#	B
---	-----	---	----	------	----	---




I	vi	V	V7 / Ger+6	I/5	V	I
do	la	sol	sol / le	sol	sol	do

This chord progression may be used as a modulatory passage to bridge *Hungry* by Kathryn Scott – in the key of C – to the key of B for Matt & Beth Redman’s *Blessed Be Your Name*. This chord progression is derived from the verse progression of *Hungry*, but when it reaches the dominant chord (G), it uses this as an occasion to modulate to the key one half step below through an enharmonic respelling of the V7 to a Ger+6. Continuity is facilitated through the superimposition of the next song’s melody over this chord progression. Notice that the melody is necessarily altered to fit the harmony of the progression. Though not a duplication of the subsequent melody of *Blessed Be Your Name*, it adequately prepares the listener for the next song and provides a melody that helps to give this somewhat esoteric modulation a natural momentum (Figure 15.29).

**Figure 15.29** *Hungry* – Kathryn Scott / *Blessed Be Your Name* – Matt & Beth Redman

C	Fmaj7	C	A m
---	-------	---	-----



— You're all — this heart — is — liv - ing for. —

I	IVmaj7	I	vi
do	fa	do	la

G    G7    B/F#    F#    B    F#

Bless - ed be your name in the

©1999 Vineyard Songs/©2002 Thankyou Music, arr. by the author

V    V7 / Ger+6    I/5    V    I    V

*sol sol / le    sol sol    do    sol*

You may have noticed that as we have progressed through the chapter, the modulation techniques have become seemingly more obscure in the context of popular music; and in order to keep the flow of the music sounding natural during modulation, more attention is needed to the manner in which the techniques are employed. Perhaps, you have also determined that though the above techniques are indeed possibilities, the musical result may seem so alien to the nature of a given song that they are not pleasing enough to be used practically in a worship service.

The fact is that these techniques have developed in the western classical tradition that embraces dissonance and harmonic development to a much greater degree than contemporary popular music which – its harmony being largely diatonic – is relatively devoid of much dissonance or harmonic complexity. Thus it poses a challenge to the music arranger to employ these techniques that rely on more complex harmonic progressions, in order to build a natural bridge between two very different key areas that doesn't seem overly dissonant with respect to the context of the song.<sup>43</sup>

Whenever a modulation is employed, a momentary sensation of dissonance is experienced, even if only consonant triads are present, because the introduction of a new key disrupts the established tonal landscape. These dissonances may be the result of a dissonant chord used to facilitate modulation or by the sheer

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<sup>43</sup> From here forth, the term dissonance is used in a more general fashion than discussed previously. It is used to explain a sensation of harmonic tension that may be the result of dissonant intervals created through a close linear juxtaposition – as when two different key areas are placed in proximity to each other – in addition to the simultaneous sounding of tones to create dissonance.

juxtaposition of two different key areas, or both. Excepting the natural inclination (and indeed purpose) of the direct modulation to disrupt a harmonic flow by suddenly interjecting a new key, the art of modulation lies largely in the ability to effectively smooth over such dissonances to create a modulation that seems less unsettling.

In the final section of this chapter, we will discuss more in depth, how one may tailor an arrangement to sound as natural as possible within the context of the music, so that an attempted modulation, whose purpose it is to facilitate transition between different key areas, avoids becoming self-defeating by not providing a convincing musical context wherein these differing keys are placed together. We will do so, by taking a closer look at the processes employed in several of the above examples, despite their apparent effectiveness or lack thereof, to create natural modulation.

### **Smoothing Over Difficult Modulations**

Through the course of our discussion of some the more advanced modulation techniques (common tone, chromatic, and enharmonic), we have attempted to find transitions to link chords that seemingly don't belong anywhere near each other. This is due to the respective keys they inhabit and how very different these keys are in terms of their pitch matrix; these keys occupy opposite poles in the circle of fifths and in some cases share but one common tone, or none at all. Yet in the above arrangements, some of these modulations seem to work rather smoothly to link two very different keys in a smooth way. This is due to a very deliberate treatment of dissonance.

The factors that contribute to the level of experienced dissonance in a modulation must be considered in order to have the theoretical tools necessary for "masking" them in a manner that makes their presence seem more natural. In these terms, the prime considerations are harmonic context, rhythm, and melody. A few

of the above arrangements utilizing an enharmonic modulation will be examined according to how these considerations factor into their treatment of dissonance.

**1) Harmonic Context:** The degree of dissonance experienced by the listener is largely determined by the degree of dissonance expected by him or her. These expectations are established by the harmonic context of the song, i.e. how much average harmonic dissonance is set as nominal. For example, a complex and relatively dissonant chord, like the fully diminished seventh, may not sound as dissonant in a context where a song is pervaded by seventh chord harmony as it will in a song consisting of mostly triads. Thus, when the above arrangement that links *Awesome God* to *Mighty To Save* employs a G#°7 through an enharmonic respelling, the listener's perception of dissonance is cushioned by the fact that this chord is preceded by a G7 chord which not only shares in the inherent dissonance of the Aug 4<sup>th</sup>, it in fact shares three common tones with the succeeding G#°7. This helps further to cushion the impending dissonance by making 3 of the 4 tones of this diminished 7<sup>th</sup> chord familiar before it even sounds.

In the case of the arrangement involving a modulation from *Let My Words Be Few* to *We Fall Down*, the prior sounding of an augmented chord in the chorus provided a context where an enharmonic modulation on an augmented chord would not seem out of place.

In a different way, the example involving the enharmonic modulation on a dominant seventh chord used the chord progression of the song it was modulating from as the basis for a modulatory section. The familiarity of this chord progression in the context of the music helps better to frame the modulation in a way that sounds perhaps more natural than would a completely new progression of chords.

**2) Rhythm:** Rhythm plays a large role in how much a given harmony is noticed. Generally, longer notes receive more attention than shorter ones simply by virtue that the listener has more time to dwell on them. Furthermore, meter, which is a facet of rhythm, has an inherent ebb and flow to it that gives natural emphasis to some beats over others. In general, “strong beats” (1 & 3 in common or 4/4 time) have more metric weight than “weak beats” (2 & 4). However, this flow of strong—weak—strong—weak is not attached merely to a quarter note pulse. As we saw in Chapter V, this metric hierarchy is also carried over to lower subdivisions of the beat where the 1<sup>st</sup> and 3<sup>rd</sup> divisions are felt more strongly than the 2<sup>nd</sup> and 4<sup>th</sup>, as with the first and third notes in a string of four 16<sup>th</sup> notes. Thus, what beats are determined to be weak vs. strong are relative to what level of the hierarchy you are examining. If chords were changing at a general rate of whole notes, or 1 per measure, then the 1<sup>st</sup> and 3<sup>rd</sup> measures would be the strong beats. And if chords were to change at a rate of half notes, then the 1<sup>st</sup> beat would be strong while the 3<sup>rd</sup> would be weak. This pattern follows through to the shortest divisions of the beat (Figure 15.30).

Therefore, to help smooth over dissonance through metric de-emphasis, a pivot chord is often placed on a relatively weak beat. It is no coincidence that each arrangement places the pivot chord on a weaker beat, each on its own relative terms. In the case of *Awesome God*, the dissonant G#°7 was placed on the 4<sup>th</sup> beat of the measure, since the chords in that moment were moving at a quarter note speed. By contrast, *Let My Words Be Few* has the pivot chord (E♭+) on the first beat of the 2<sup>nd</sup> measure, but this is still a weak position relative to the other chords, which move at the rate of whole notes. Likewise, the Ger+6 chord (spelled as a G7) in the arrangement with *Hungry* and *Blessed Be Your Name* is on the third beat of the measure and since the chords are moving at a rate of every two beats, this chord is on a relatively weak beat.

**Figure 15.30** Strong Vs. Weak Beats & Beat Divisions:

Figure 15.30 illustrates five musical staves showing strong and weak beats and their divisions:

- Staff 1: Two whole notes. The first is labeled "Strong" and the second is labeled "Weak".
- Staff 2: Four half notes. The first and third are labeled "S" (Strong), and the second and fourth are labeled "W" (Weak).
- Staff 3: Four quarter notes. The first and third are labeled "S" (Strong), and the second and fourth are labeled "W" (Weak).
- Staff 4: Eight eighth notes. The first, third, fifth, and seventh are labeled "S" (Strong), and the second, fourth, sixth, and eighth are labeled "W" (Weak).
- Staff 5: Sixteen sixteenth notes. The first, third, fifth, seventh, ninth, eleventh, thirteenth, and fifteenth are labeled "S" (Strong), and the second, fourth, sixth, eighth, tenth, twelfth, fourteenth, and sixteenth are labeled "W" (Weak).

**3) Melody:** Melody is always going to be an important factor in any musical analysis because it carries such importance in the ear of the listener. The western musical world, if not the whole world, has made melody the primary element of most music genres. In general, we listen closely to melody and, consequently, dissonance becomes very apparent when it clashes with one (as in a dissonant accompaniment). This is easily perceived in our arrangement of *Awesome God*, where a melody, modeled after the song's melody, is employed during its musical transition modulating from the key of Cm to A. Here, the melody of *Awesome God* fits well with the accompaniment until it reaches the first chord of the new key. At this point, it could not

terminate on the original C, but because of the A chord on which it ends, it has to settle instead on C#.<sup>44</sup>

Furthermore, when a recognizable melody (as with *Awesome God*) is altered in this way, there arises a degree of perceptible tension (or dissonance) simply by virtue of its divergence from the given and expected pattern. Alterations that result in pitches that are outside of the melody's key are all the more striking. Though this was avoided in the Getty arrangement of *In Christ Alone* through altered pitches that were common to both keys, it is unavoidable in the *Awesome God* example where C# is completely foreign to the key of Cm.

The adverse effects of this kind of dissonance may also be cushioned by delaying the C# to a weaker beat that is also shorter in length. The inevitability of the C# sounding out of place in relation to the notes that precede it, is thus delayed by a suspension of the chord, its onset substituted by a D natural that is in a sense more consonant because it is common to the keys of Cm and A.

### **Practice Exercises**

In the following exercise, write a common chord modulation between the two songs. Insert the chord on the measure where no chord symbol is present. Use a dominant seventh (Figure 15.31).

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<sup>44</sup> We found a similar situation in our analysis of chromatic modulation in *In Christ Alone*.



**Figure 15.31** Holy, Holy, Holy – John Dykes & Reginald Heber / Let My Words be Few - Matt & Beth Redman

D D/F# D7/F# G D Em/G Asus11 D

God in three persons, blessed Trinity! \_\_\_\_\_  
G G+

— You are God in heaven, — and here  
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Write a common tone modulation. Indicate what tone is common to the final chord of the first song and the first chord of the next song (Figure 15.32).

**Figure 15.32** Mighty To Save – Reuben Morgan & Ben Fielding / We Fall Down – Chris Tomlin

C G Em D

con - quered the grave, — Je - sus con - quered the grave. \_\_\_\_\_  
F

We fall — down, — we lay our — crowns — at the feet  
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Write a chromatic modulation using two chords to link the two songs. The first chord should be a common chord, while the next chord should be chromatic to the first key but diatonic to the second (Figure 15.33)

**Figure 15.33** How Great is Our God – Chris Tomlin, Jesse Reeves, & Ed Cash / You are My King (Amazing Love) – Billy Foote

The image shows two staves of music. The first staff is in 4/4 time, starting with a treble clef and a key signature of one flat (F major). The melody consists of quarter and eighth notes. Chords are indicated above the staff: F, G, and C. The lyrics are: "heart will sing, 'How great is our God.'" The second staff continues the melody, with a key signature change to two sharps (D major) indicated by a double sharp sign. The lyrics are: "You are my King,". Chords are indicated below the staff: D and Dsus2. At the bottom, the copyright information reads: ©2004 worshiptogether.com songs / ©1996 worshiptogether.com songs

Write an enharmonic modulation between the two keys. Insert an enharmonic diminished chord (triad or seventh) between the Am and the Gm/D chord (Figure 15.34)

**Figure 15.34** I Stand in Awe – Mark Altrogge / More Love, More Power – Jude Del Hierro

The image shows two staves of music. The first staff is in 4/4 time, starting with a treble clef and a key signature of one sharp (D major). The melody consists of quarter and eighth notes. Chords are indicated above the staff: Bsus, B7, Cmaj7, C#m7(b5), Am7, D, C/G, and G. The lyrics are: "God to whom all praise is due, I stand in awe of You." The second staff continues the melody, with a key signature change to two sharps (E major) indicated by a double sharp sign. The lyrics are: "More love, more power,". Chords are indicated below the staff: Am, Gm/D, D7, Gm9, and F#maj7(#11). At the bottom, the copyright information reads: ©1987 Sovereign Grace Praise / ©1987 Mercy/Vineyard Publishing

Write an enharmonic modulation using an augmented chord that links the two keys. In the first blank write the augmented chord following the G (measure 5) and following that, the chord it resolves to (diatonic to the next key) (Figure 15.35).

**Figure 15.35** Lead Me to the Cross – Brooke Fraser / God Of Wonders – Marc Byrd & Steve Hindalong

A                      Em9                      G                      A                      B m    A                      G

Oh lead me.                      lead me to                      the cross.

F m7    D<sup>b</sup>2                      E<sup>b</sup>add4 F m7                      D<sup>b</sup>2

Lord of all cre-a - tion,

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In this last exercise, write an enharmonic modulation using a dominant seventh reinterpreted as a German sixth. Note that the chord follows the Dm (measure 3) and will be diatonic to neither key (Figure 15.33).

**Figure 15.36)** Mighty to Save – Reuben Morgan & Ben Fielding / My Redeemer Lives – Reuben Morgan

B<sup>b</sup>                      F                      Dm                      C                      Dm

con- quered the grave,                      Je- sus                      con- quered the grave.

E<sup>b</sup>/B    B7                      E9                      A9

He know                      He's res- cued my soul.

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## Notes

## APPENDIX

### COMPARATIVE COMMENTARY

The comparative commentary exists to explain the pedagogical decisions I've made in creating this theory method. I give explanation of the basis for many of my decisions through comparison with several other major theory methods by showing where and why my text diverges from the approaches these other texts take or remains consistent with one or more of them. It serves in part to validate my thesis as a more effective bridge for the "theory gap" between church musicians and the trained academic music community than what is presently available. Texts that will be referenced are *Music Theory for the Music Professional* by Richard Sorce, *Theory for Today's Musician* by Ralph Turek, and *The Musician's Guide to Theory and Analysis* by Jane Piper Clendenning and Elizabeth West Marvin.

I take overall content as my first point of divergence from other theory texts. The content may not necessarily be deemed "comprehensive" to an accreditation standard as determined by the National Association of Schools of Music (NASM) or by any other committee; it is comprehensive according to a specific set of musical skills consider to be is necessary for a church musician to have in place in order to chart and arrange music for use in a worship service, execute any given instruction on a lead sheet or chord sheet and gain the vocabulary with which to engage in dialogue with other trained musicians. The goals and needed content are listed as such:

- 1) Gaining an adequate familiarity with the various notational styles used in the church.

- 2) Learning music theory fundamentals and its vocabulary, including: pitch, rhythm, keys, scales, and intervals.
- 3) Learning chord theory from basic triads, extended chords and their practical applications, and chromaticism in popular music.
- 4) Learning advanced theoretical applications towards an understanding of how to arrange music for a contemporary worship service including: a fundamental understanding of chord progression in a popular music context, chord substitution, and modulation.

Below is a chapter-by-chapter comparative commentary of the content, structure, and presentation of the material in my thesis with the treatment of the same material in the 3 other texts. It notes where in my text certain concepts were added or omitted in comparison to the others.

The course of each method largely serves to equip each student towards the development of the interpretive, analytical, and compositional skills pertinent to the repertoire that is discussed in each. Mine is no different in this respect, therefore since the body of musicians who make up its readers (and the repertoire they study) differs from the other texts, the content and pedagogical approach of my text reflects these differences.

These distinctions are due in part to the nature and purposes of the dominant style of notation employed by both the musicians in question (and myself in this text), i.e. the lead sheet, which with regard to its manner of presentation of its musical directives resembles the type of music it illustrates. As popular music and jazz, utilizing the lead sheet as their primary notational style, are largely an improvisatory style, the aim of the notation is far more vague. Since the primary goal is to give the performer(s) a sense of the metrical and tonal structure of the song, a specific depiction of the melody (where it is understood that this may be adhered to or departed from at will), lyrics where necessary, and a suggested

harmonic structure through which to accompany that melody; lead sheets are generally devoid of the many other specific performance indicators that characterize standard notation. Ralph Turek says this of lead sheets, “The keyboardist or guitarist interprets the chord symbols and improvises an appropriate accompaniment based on them. The style is up to the player—it can be varied to suit the purposes of the group.”<sup>xix</sup>

Thus process of translation of notated musical ideas to performance is quite different from traditional music notation, where the player is generally expected to execute the more definitive written notation with a much higher degree of precision. The musical improvisations of the performer are, in turn, more confined to the subtlety of expression of those specific ideas and do not require major rhythmic, harmonic, or melodic compositional decisions to the same degree that performers utilizing a lead sheet are forced to do.

Though it is usually a purpose of the theory pedagogue to instruct the student to apply theory and notation towards an understanding of how to interpret, analyze, and compose in a musical style or set of styles (but style is inherently vague in the form of lead sheets and subjective to the performer), my theory method, because it utilizes such notation and thus places so much interpretive responsibility on the shoulders of the reader, must accommodate this deliberate vagueness. The interpretation, analysis, and composition of the music depends on fewer elements (fewer performance instructions specified), meaning that the analysis of this music is restricted to relative basics, its interpretation of notation is largely subjective, and its composition generally mirrors such generalities. Therefore the method of pedagogy inevitably must exclude certain concepts in its course, concepts that may pervade an institution of classical training intended to aid a musician in the more precise execution of the more precise style, for the purpose of upholding the nature of the repertoire in its interpretive freedom.

If execution of the traditional style (or set of styles) were a major goal of this text, then a more specific form of notation would be necessary to supplement the

lead sheet (indeed this is case in a few instances throughout the text). However, it would be beyond the scope of this book to provide the reader with an examination of the nearly limitless interpretive possibilities allowed by the notation and acceptable within the repertoire. Certainly, some stylistic boundaries are imposed in order to allow for a more contextual application of theoretical principles and give the reader a general sense of what is most commonly employed and thus provide the context for which more unusual elements are possible. But these are primarily harmonic considerations. It is typical of the genre to be harmonically and melodically restrictive while rhythm is allowed much more freedom through interpretation. For the most part, it is assumed that the reader is to “realize” the repertoire with a high degree of improvisatory liberty while upholding what specified elements are provided in the notation and what specific theoretical concept their attention is being drawn to in that instance.

As mentioned, this aspect of the music and its notation determines that some concepts will be left out of the text or at least under emphasized compared to some of the other methods. For instance, in Part I, where notation and theory fundamentals are discussed, a less comprehensive emphasis is placed on reading and writing notation. C clefs are entirely omitted due to the fact that they are not found in lead sheet notation, which uses the treble clef only, or standard hymn arrangements, which are notated on a grand staff. Also, notation of complex rhythmic note groupings such as quintuplets, septuplets, etc. is omitted because these rhythms are rarely found (if at all) in the repertoire. The purpose of the text in Chapter 3 (rhythm fundamentals) is to cultivate a “rhythmic awareness” in the musician who has never thought analytically about rhythm and provide the basic tools with which to notate the rhythms of the melodies specified in notation.

The other points where my text diverges from the other three on these terms are many and will be discussed as the need arises throughout the remainder of this commentary. It should become apparent that the motive of my text is, as stated in my thesis statement, “to assert a more focused and practical tool for theory

pedagogy than those currently available to bridge the ‘theory gap’ between contemporary church musicians and the ‘classically trained’ academic world”. Thus, in a sense, the bridge this method creates does not serve to replace what attempts other texts have made, but to close the gap where they have fallen short in addressing the perspective and needs of this specific demographic of music professionals. It does not serve as a fully comprehensive method on the terms of the academic world. Certain, very important concepts, like voice leading and part-writing are hinted at. This commentary services to analyze my work in light of three others, to show where mine surpasses the attempts of the others and where and why my method works similarly to one or more of the other methods.

## **Preface**

### **What is Music Theory and Why Do We Use It?**

It seems that most theory texts, including the three in question, contain some sort of theory apologetic that serves to justify the study of theory if not merely its very existence.<sup>xx</sup> My text is no exception and due to the seemingly large amount of skeptics in the realm of popular music and the contemporary church, I offer a considerable portion of the introduction to addressing this issue alone. I believe that my arguments are more effective for a church musician reader as I address issues specifically pertaining to their vocation: how music theory is helpful to them and how those who would criticize the study of theory are misguided in their assumptions.

### **Making The Most of Your Time**

Both the Turek and Clendenning & Marvin books give some advice to the student as to how to study theory using the book and included materials.<sup>xxi</sup> My text does the same, though it is less thorough in its directives. I simply encourage the reader to be consistent in their study routine, apply the concepts on their instrument, incorporate it into their normal music practice routine, find a study



partner, and to persevere. Also the included materials & study resources offered by my text are more modest and do not require the extensive explanations given in the other books.

## **Notation**

### **What is music?**

This question is not asked in any of the three other texts. Though the answer is undoubtedly taken for granted, I believe that discussing it in light of what music theory attempts to do helps to set the boundaries through which theory can operate. This may be helpful to a student who may have no exposure to analytical thinking about music, understanding what approach music theory must take towards an understanding of music.

There seems to be an assumption in the Sorce and Turek texts that the reader of the book has prior knowledge of the fundamentals of theory, perhaps rendering such a question naïve.<sup>xxii</sup> However, I take it as *a priori* that the reader of my text is not only unfamiliar with theory and its purposes, but is skeptical of its practicality.

### **What is Notation?**

Though the other texts do discuss how to read staff notation, they do not bother to ask the questions: What is notation? Is it necessary? The other texts assume that their reader is not preoccupied with these questions. Sorce's text says, "It is assumed that the reader of this text has already had at least a minimum of musical training and that he or she possesses a rudimentary knowledge of the principles of music theory."<sup>xxiii</sup> However, to engage specifically the perspective of musicians in popular music, many of which possess no such knowledge or training and may in fact pride themselves on their accomplishments apart from such training or their ability to "play by ear", one must also generate an apologetic for music notation as much as music theory. Though Turek too assumes that the reader has

prior exposure and training in notation and theory fundamentals, he does admit, “The landscape of rock and popular music is littered with tales of people with little or no musical training...”<sup>xxiv</sup>

### ***Traditional Music Notation (Sheet Music)***

All three of the other texts have been designed for use in a college setting where traditional music notation is the standard and ability to read it is both assumed and required. But my text has a different approach. Given that my audience is untrained musicians who are already functioning in a professional setting and who have most likely adopted the other notational style that are the dominant forms in the contemporary church, traditional music notation is not held as standard and learning to read it is optional. According to a 2009 survey by Christian Copyright Licensing International (CCLI), which distributes copyright licenses to over 150,000 churches world-wide<sup>xxv</sup>, 66.15% of participating license holders (over 13,000 churches participating) indicated that their musicians used Chord Charts (lyrics & chords), 59.91% indicated the use of lead sheets, while 25.88% indicated the use of SATB arrangements, and only 19.27% used instrumental arrangements.<sup>xxvi</sup>

### ***Lead Sheet***

I have made the lead sheet the standard for my text for several reasons, unlike the other texts that only include occasional lead sheet examples. The primary reason for this is a majority of churches employ this style. Though the statistics of the CCLI survey in 2009 indicate that chord sheets are more popular, the lead sheet is preferred because it carries all the same information of a chord sheet in a similar layout, but also contains a melody, lending itself to more precise depiction of theoretical concepts. I believe it provides an adequate “middle ground” between the staff-notation-dominated academic sphere and the largely musically illiterate contemporary church.

### ***Tablature (TAB)***

Tablature is used extensively in Parts I & II, where the specific realization of individual pitches and chords is the focus and is used only where needed in Part III. Tablature is provided as supplemental to the staff notation, in order to aid guitarists, who are less often trained in reading staff notation than other instrumentalists. Once again, this is an effort to address my specific audience. The same 2009 CCLI survey indicated that 76.78% of churches primarily use a rhythm section consisting of guitars, bass, and drums<sup>xxvii</sup>, types of musicians who rely more on their ears as opposed to notated music.

### **What Notation Should You Use?**

This question, also not addressed by any of the other books (since they offer no other option for notation), is important in this text because, in its attempt to cater to the perspective of the church musician operating at the professional level, it must acknowledge practicality, simplicity, economy offered by some notational styles in contrast to the specificity, thoroughness, and difficulty of others – all being important concerns for the church musician.

### **Making the Step Towards Staff-Based Notation**

By acknowledging where many musicians are in their reading abilities and affirming their validity while showing them the advantages of expanding their capacity to read notation, one can more effectively encourage them to make these advancements. I believe that the standard the other texts set, making staff notation the only option for using their course of study, serves to effectively alienate illiterate students from attempting to join the ranks of the literate.

### **Is Notation Necessary for Learning Music Theory?**

The other texts do not even address this question, but it would be a mistake to assume one cannot learn music theory apart from notation. Such an assertion would be akin to saying that one cannot know what words are apart from knowing how to read them. However, as one of the biggest hurdles of the theory gap is convincing musicians that they should cross it, the best way to do so is to concede to the fact that musicians can make strides towards a theoretical understanding without having the background and skills of a classically trained musician.

### **Fundamentals of Pitch**

#### **The Octave**

I believe that a short introduction to acoustics is important to set the context for a discussion of musical fundamentals, especially for concepts like the octave. A discussion of the octave and octave equivalence is needed to provide the basis for notes, scales, keys, and intervals and such things have little meaning and are difficult to comprehend apart from the scientific properties that define them. Thus, I begin my discussion of pitch much in the same way as Turek and Sorce do<sup>xxviii</sup>, with a short discussion of sound waves and vibrations, but go into more detail in order to explain octave equivalence, something they neglect. Clendenning and Marvin mention the principle of octave equivalence in terms of its notational/theoretical implications, but do not explain its source in acoustics. In fact, the subject is avoided altogether.<sup>xxix</sup>

#### **The Musical Alphabet & Natural Notes**

My approach to the introduction of notes is similar to Clendenning & Marvin in that I suspend the introduction of staff notation of the notes until the whole chromatic pitch spectrum is covered. The other two texts introduce staff notation at the same time as they discuss pitches, however I believe this approach is at risk of

being overwhelming to the student unfamiliar with notation and who only possesses the most rudimentary knowledge of pitch.

### ***Steps***

- **Steps On The Guitar**

A point where I deviate from all three texts is my use of guitar tablature to supplement the examples notated on the staff, an addition that is a key feature of my text. In the same way that all three other books show the spaces between notes are “fleshed out” on the keyboard, I do so with both the keyboard and the guitar.

### **Notation on the Staff**

A marked difference between my approach and the other three is that I avoid discussing C clefs. This is due to different goals for the presentation of this material. In the three other books, a major goal is to prepare the student to read scores that may include such clefs. However, my purpose is to teach the student to read the treble clef primarily for use in reading lead sheet notation, reading notated examples in the text, and along with the bass clef, have the ability to read music in a hymnal which is presented in keyboard notation.

### **Rhythm**

#### **The Beat**

Like Clendenning & Marvin<sup>xxx</sup>, my chapter on rhythm at the beginning discusses rhythm in more general terms of the beat or pulse, drawing the reader into a realm of familiarity where they can take what concepts they already perceive about musical rhythm and later attach vocabulary and notational symbols to their meaning. The other texts delve right into notation and beat divisions without giving the reader adequate time to conceptualize theoretical ideas surrounding rhythm.<sup>xxxi</sup> As I state in my introduction, rhythm is an aspect of music that is often mastered by

musicians without any theoretical background. Therefore, care must be taken when addressing such musicians to allow them to learn the basics of rhythm from a theoretical/notational perspective without making them feel as if they are wasting their time on matters they already know. Therefore, I believe it is advantageous to ease the reader into a discussion of the notation of rhythm by addressing the subject using terms with which they are familiar, i.e. apart from theoretical vocabulary or notation.

### **Meter & Measure**

In a similar fashion to Clendenning & Marvin<sup>xxxii</sup>, I use familiar examples from the repertoire to illustrate the concepts of beat, measure, meter, and beat division. Clendenning & Marvin draw the reader into the deeper dimensions of meter by using examples of Joplin's *Pine Apple Rag* and an excerpt from the *Messiah* to discuss beat & pulse, and *Greensleeves* to discuss beat division and tempo. They go on to use a few patriotic tunes (*The Stars and Stripes Forever* and *My Country, 'Tis of Thee*) to provide familiar examples for the depiction of meter. However, with respect to the context of the contemporary church musician and the repertoire they are most familiar with, I take a more familiar and direct approach. Though I discuss the same material, I use the example of a basic rock beat drum pattern to illustrate the majority of these concepts. This drum pattern, engrained in the psyche of most rock musicians, delineates clearly beats and beat division. Such an example should make more immediate connections in the mind of a musician between theoretical concepts and concrete musical situations. The one drawback of this example is that in common time, the first two beats are identical to the last two, thus making a clear 4-beat measure delineation difficult to identify outside of the musical context. Therefore, I supplement the example with a well-known hymn *Holy, Holy, Holy*, which provides a very clear example of demarcation of measures across a 4-measure phrase in terms of both its rhythmic and melodic content.

The other two texts are inadequate at creating relatable examples in repertoire, as they provide no examples other than abstract notational depictions of the concepts.<sup>xxxiii</sup>

The three texts do use different strategies in the discussion of meter and time signatures and mine is most closely related to the one employed by Clendenning & Marvin. As time signature is a notational indicator of meter, its relevance relies on an understanding meter, however, since it uses rhythmic durations as part of its notation, it relies on that as well. Since notation of rhythmic durations is dependent largely on the concepts related to meter (most notably beat and pulse, though other concepts such as measure, which is dependent on meter, are very helpful for understanding the nomenclature of these durations), it is clear that these concepts are highly intertwined. Thus it becomes the challenge of the pedagogue to determine how to best organize the discussion of them in a linearly coherent fashion so that an understanding of initial concepts is not dependent on an explanation of subsequent ones.

It seems that there are two strategies used by the texts in question. The one employed by both Sorce and Turek seem to employ a gradual and simultaneous unfolding of each these topics, where after an initial introduction of a vocabulary of rhythm, tempo, pulse, and beat, other dependent concepts such as meter, meter, measure, time signature, and rhythmic notation are unfolded under subsequent headings of “Time Signatures”, “Beaming”, “Dots and Ties”, “Simple, Compound, and Asymmetrical Meter”.<sup>xxxiv</sup> Clendenning & Marvin take a different approach by separating the discussion of time signature from that of meter, by introducing meter on more general terms immediately following the discussion of beat and pulse, well before any notational depiction of time signature is introduced. Following a generalized discussion of meter, beat grouping and its demarcation (measures), and beat division is introduced followed by an explanation of these terms dependent on notation. Only after these concepts have been discussed, is meter’s depiction through time signature covered.

In my opinion, the latter is the superior strategy. The student with a developed understanding of these theoretical concepts will eventually bring them together in the interrelated synthesis that they constitute. However, for the student who is unfamiliar with said concepts will benefit from a more systematic (though it is somewhat artificial, as these concepts are not mutually exclusive) unfolding of these concepts as they are likely to be overwhelmed by the simultaneous presentation of all the necessary theoretical ideas, vocabulary, and notation.

### **Keys & Scales**

#### **The Major Scale**

The beginning of my chapter on keys and scales takes a similar path to the other texts do in defining the scale as a subset of the chromatic scale and its meaning in relationship to key. However, more so than the others, my text emphasizes the role of the scale and key in establishing a tonic center, or at least emphasizes how the other tones in a subset collection stem from and are related to a tonic pitch. This has its advantages, I believe, in providing a more practical and relatable context for the theoretical concepts of key and scale. For the untrained musician, who may not even have learned scales or have a properly defined conception of what key is, the sudden presentation of such concepts without any familiar pretext can pose a challenge to the fledgling theorist or theory skeptic. Yet, tonality, which has birthed the modern understanding and application of these terms, is a music phenomenon universal to the experience of musicians both trained and untrained. Its implications on how music is heard and felt is common at the most fundamental level. It is commonly understood that, for the most part, the “musical ear” of the most inexperienced musician is conditioned to recognize, if only at a very basic level, tonality with respect to recognizing how diatonic is more intrinsic to tonal music than chromatic harmony. The idea of consonance and repose as opposed to dissonance and tension are basic musical perceptions that go beyond the sphere of trained musicians. Therefore, using this as a common pretext,



a more immediately comprehensible presentation of these theoretical concepts may be allowed. This way, the musician may attach these theoretical concepts to already known musical elements without having to accommodate entirely fresh ideas.

A notable difference in my approach, which arises out of this motive, is the introduction of the scale degree nomenclature and their relations to tonic earlier than the other authors. This, though not entirely essential to an fundamental understanding of keys and scales, does help draw the reader's attention to the importance of tonic as the central tone from which keys and scales relate as well preparing him or her for a later discussion on chord function and its relation to the respective tendencies of scale degrees.

### ***Double Sharps and Flats***

A subheading in the introduction of major scales that discusses the necessity of double sharps and flats is a feature of my text that is missing from the other ones. I believe that this topic is a key point that needs to be addressed upon mentioning the structure of major scales, because it is this structure that necessitates the notation of a double accidental. Without this context, such a concept would appear to be a completely arbitrary construction and altogether unneeded. It is precisely such seemingly esoteric constructs that cause the student to question the value of theory in making music more *comprehensible*. Therefore it is unfortunate that these other texts not only miss such a didactic opportunity by failing to mention the use of double accidentals where they are most pertinent, they risk further estranging the skeptic by introducing them out of any meaningful context. In Sorce's text, he introduces double accidentals early on and alludes to the discussion of their use later on.<sup>xxxv</sup> However, he does little more to explain their use than to simply depict scales that contain them, assuming the burden on the reader to piece together the puzzle and deduce their purpose without any textual explanation.<sup>xxxvi</sup> Turek's handling is worse yet, as he simply mentions their existence in his discussion of accidentals and fails to explain how or why they would be used, nor do any of the

scales he subsequently provides as examples contain double accidentals.<sup>xxxvii</sup> Clendenning & Marvin don't seem to handle the issue any better. They introduce double accidentals early on, but never touch on them in their discussion of scales or provide examples that contain them.<sup>xxxviii</sup> They are briefly mentioned several chapters later in their discussion of intervals, though not with enough depth to make the meaning of their use abundantly clear.<sup>xxxix</sup>

- **Tip: Selecting Keys For Musicians**

This idea of choosing to notate music in one key over another in order to improve a musician or ensemble's ease of reading is important for the professional context of a church musician, where rehearsal time is usually very limited if allowed at all (of the 4 or so churches where I have served as a musician, there is but one short rehearsal preceding the service). The typical lack of professional quality of musicians combined with a shortage of time for rehearsal makes it all the more beneficial for music arrangers to use theoretically informed techniques for the purpose of avoiding unnecessary difficulties that may hinder the performance of musicians involved. The aforementioned CCLI Survey in 2009 found that 53.53% of the churches surveyed stated that the greatest challenge facing their worship ministry was "lack of skilled musicians/vocalists" and the next most significant issue was a "lack of preparation time" with 37.07% affirming this as their greatest challenge.<sup>xi</sup>

- **Solfège in Major**

As with the Clendenning & Marvin text,<sup>xli</sup> I include the teaching of solfège to take advantage of the chapter on scales and key for instruction in basic ear training. Both Sorce and Turek avoid covering the subject (Turek only goes so far as to mention it with historical reference to the early theory didactics of Guido.<sup>xlii</sup>) This may be due to an attempt to limit the scope of their book to teach

theory & analysis separately from the daunting subject of ear training, though Turek does attempt to engage the theoretical ear of the reader through the audio examples included on the accompanying CD-ROM. I do not claim in my text to provide a comprehensive, or for that matter adequate, course of ear training, though I include an introduction to solfège, as Clendenning & Marvin do, towards the student's acquisition of aural skills in theory. The extent that it is present helps to encourage the student to use their voice and ears as they learn and apply theory and to seek a deeper program of study in ear training.

### **Minor Keys and Scales**

With the exception of Turek, the other texts dedicate separate chapters to the discussion of minor scales and other modes, however for the purposes of my text a discussion of scales other than major is of less importance. This is due to the repertoire of Contemporary Christian Music, which is dominated by the major mode. There are very few songs, especially those having been written in the last 15 years, which are truly in a minor key. It is more common for a song in this body of repertoire to merely tend towards the Aeolian mode during a section (like a verse), while the chorus or refrain shifts to the Ionian mode. But very few exhibit full-fledged minor key tendencies.

However I do include a short discussion of the harmonic minor and melodic minor forms, as modal mixture does occur in the repertoire and often in songs that are composed in minor (if only in part) I discuss this in Chapter 10, where such scales would be exhibited.

### **Key Relations – Cycle of Fifths**

All texts mention the cycle of fifths and each has its own reason for doing so or at least draws attention to different aspects of the cycle. Clendenning & Marvin introduce the concept with the clearest indication as to its practical application. They introduce the idea with regard to keys presenting it as a tool for learning their

signatures, as it is often used.<sup>xliii</sup> In this section they show how it organizes keys with regard to pitch content, devoting the necessary attention to this fact for the purpose of teaching key signatures. Ralph Turek's approach is similar in this regard as well.<sup>xliv</sup> Ralph Sorce's method is slightly different in the respect that, though he relates it to key signatures, it is only presented as a subheading under the topic of key signature and his text contains little information other than this larger organizational scheme to help draw the reader's attention to its significance. In fact, he dovetails his circle of fifths discussion with a note on the keys' relationships by tetrachords.<sup>xlv</sup> However much this relationship is a reality, I believe that it doesn't exhibit the economy of information needed to sustain a reader's interest. By using this approach, he is forced to explain the new vocabulary of tetrachord, including its meaning, origin, and intervallic construction, and then show how many of them can be laid out linearly and uninterrupted to form a chain of diatonic scales that are fifth related. He also is forced to use several pages of diagrams to illustrate his point. The other texts, including mine, don't bother with this unnecessarily protracted method.

Where my text deviates largely from all three of the other methods is with respect to the fact that, through mere omission, I do not emphasize the need to learn and memorize all the key signatures. The circle of fifths is explained as a reference tool for one to consult in order to determine a key's signature, but I do not present this as its purpose. Rather, I draw the focus directly to the fact that it illustrates what keys share similar pitch content. This is organized under my larger subheading of "Key Relations". I make this the thrust of the discussion because it points the reader's attention to the later chapters on modulation, which being a technique of song arranging (indeed one of the larger subjects of this method) it places more value on the circle of fifths as an aid in very advanced and practical theoretical techniques rather than a mere occasion for learning key signatures.

## **Intervals**

### **Numeric Value**

Each of the three authors approaches this topic in a very similar fashion. Though Turek uses similar nomenclature as myself (“Numeric Value”), Sorce uses the term “Interval Distance” and Clendenning & Marvin name it “generic-pitch-interval”.<sup>xlvi</sup> Despite this variance in vocabulary, each one offers the simple explanation that the interval’s quantitative qualifier is measured by the numeric distance created between the note names.

### **Interval Quality**

Interestingly, all three texts use very different techniques for explaining how to determine the quality of an interval. Though each approaches augmented and diminished intervals similarly, by explaining them as a chromatic raising or lowering of a perfect, major, or minor interval, the methods for determining perfect, major, or minor are not shared. Turek’s model, which is probably the most novel, provides a system whereby one determines the quality of interval by examining how many steps are contained in the diatonic scale spanning the space of the given interval and by checking these findings against a prescribed set of rules (which are obviously meant to be memorized) the quality is made apparent.<sup>xlvii</sup> As unique as this system is, I don’t believe it provides the best solution. The problem here is again one of economy. On the surface it may seem that this provides a simple solution, minimizing the effort of the student in determining the interval, but in fact it creates more work by forcing the student to memorize this more complex system of determination and doesn’t avoid the necessity of the individual to memorize the diatonic pattern of whole and half steps, which is central to all three of the methods. The only possible step that it cuts out is the need to have minor scales in mind during the process, yet the total mental processes and memorization required make this the least efficient process for the student to determine interval quality.

Sorce recommends a method that is perhaps more conventional than Turek's proposition, but like it, involves more processes than are needed. He proposes that the student may determine quality by examining each interval in the context of a major scale built from each pitch.<sup>xlviii</sup> If the upper note is in the major scale of the lower note and the reverse isn't true, the interval quality is major. If the upper note is a half step lower than what is in the major scale and the pitch name is still common, it is a minor quality. If each note is included in a major scale built from each of the two notes, then the quality is perfect. Again, the only advantage to this system is that it precludes the memorization of minor scales.

Clendenning & Marvin's approach provides the most conventional method.<sup>xlix</sup> Here, the student is required to examine whether a major scale or minor scale built from the lowest note contains both pitches to determine whether the interval is major or minor. They explain perfect intervals by showing that they are the intervals shared by both scales (excepting the intervallic 2<sup>nd</sup>, of course).

Despite the attempts of the other two authors to provide an innovative approach (that may even seem easier on the surface), the conventional method is the best one in this case. This is the method I've adopted in my text because it remains the simpler, more economic means of determining interval quality. In light on the theoretical concepts that are required prior to the introduction of intervals (in each of the varying methods), not only does this one require less new information and memorization, it does better at reinforcing those prior concepts. For instance, though the other methods avoid the need to memorize the minor scale pattern of steps, this is doesn't come as a benefit, because this serves to deemphasize the importance of knowing the structure of minor and causes the student to be ill-prepared for more advanced theoretical concepts that depend on a working knowledge of the minor mode (chord theory, progression, etc.).

**Tips**

Since the audience that I am addressing in my text is far more specific than those addressed in the other books, I am afforded a much higher degree of freedom to provide examples for the practical application of the material. In my text, I take the opportunity in this chapter to give a context for how intervals may be specifically employed in the context of a worship service that helps to give the study of them meaning beyond that of being a simple prerequisite to more advanced techniques. Here, perfect, major, and minor intervals are shown to be tools for the harmonization of a given melody or bass line for both instrumental accompanists and accompanying vocalists. Also, in this chapter I provide many other helpful teaching opportunities that are missing from the other texts including ear training exercises and a discussion of transposition that are both tailored to the context of the church musician.

**Diatonic Triads**

Though much of the material I discuss in this chapter parallels much in the other texts, especially those of Clendenning & Marvin and Sorce, my goals for the student reading this chapter differ in a number of respects. Based on the material covered and its emphases, as well as the examples given, it seems that the purpose of the material given by each of the other authors is to equip the student to recognize and analyze triadic (and in some cases seventh) harmonies present in classical and modern scores as well as point to a later discussion of harmonic progression. In essence, the directive of each method is for the practical purpose of score analysis. Following an initial discussion of the intervallic makeup of the four types of triads, the examples given by the author are for the purpose of identifying and analyzing triads in a musical composition. Clendenning & Marvin do this with a Chaconne by Handel,<sup>1</sup> Sorce does not use any repertoire examples, but proceeds less practically through abstract triad notations,<sup>11</sup> and Turek does this primarily through a keyboard arrangement of a folk tune, but later with a reduction of a composition

by Tchaikovsky.<sup>lii</sup> However efficient each of these methods may be in their endeavor, my approach pursues a slightly different goal.

The pursuit of this chapter is more than simply to teach the student to identify triadic harmony in a musical context, but exists to illuminate the structure and theoretical origins of triadic harmony in order to awaken the musician's aural awareness of it in a musical context. This purpose comes as a necessity due to the condition of most the church musicians in question, who have only a limited understanding of harmony and, for the most part, do not possess the tools with which to think theoretically about harmony. To an even greater degree, this is often the case for guitarists who, often not possessing a very precise knowledge of what notes they actually play at any given point, come to think of chords more simply as the physical orientation of their fingers on the fret board determined by a chord symbol on a page. As has been stated, the main thrust of this book is not only to give such musicians a theoretical awareness of the music they play, but also provide the tools with which to exert their own creative compositional will on the music itself in order that they may best fulfill their role to improvise an accompaniment out of the vagueness of a lead sheet. Therefore, this chapter serves a critical role in helping to wed the body of fundamentals the reader has learned thus far together with their extensive, albeit uninformed, experience of how to employ triadic harmony for a melodic accompaniment.

This is made possible by the fact that each of the examples and exercises employed in my text draw the reader into that kind of "dialogue" with the theory either through contemporary song examples that do not require further analysis of the notation other than familiar chord symbols or through by means of minimally notated examples which most often contain tablature to aid the guitarist. If in fact this is an intention of the material presented by the other authors it would do more to serve those musicians fluent in standard notation and be more relevant to those who study classical repertoire, and could serve to disenchant those who do not operate in this context.



In terms of content, my text doesn't cover as much ground as the other texts so that more can be devoted to ear training and practical application of the material. Clendenning & Marvin move past the material present to include a discussion on triad inversion, figured bass, seventh chords, and Roman numeral analysis.<sup>liii</sup> I address all of these topics in subsequent chapters with the exception of figured bass, which though didactically helpful, is a practice irrelevant to the context of my intended audience. Therefore, in the spirit of practicality, it has been omitted from my text. Unlike Clendenning & Marvin, Sorce covers diatonic triad harmonization in a modal context, another topic I have omitted for similar reasons. He goes on to cover inversion, a helpful note on note-spacing (though not pertinent enough to the purposes of my book to be included), figured bass, a practical segment on identifying spread-position triads (once again, as this concerns more the analysis of scores, I have left it out), and concludes with a discussion of the chord symbol notation found in popular music styles (a topic I cover in depth throughout my text).<sup>liv</sup> Turek's chapter is less comprehensive in scope and after his discussion of basic triads includes inversion as well and seventh chords.<sup>lv</sup>

### **Four-Note Chords**

At this point, my method takes a makes a marked departure from the other texts in the manner in which I have chosen to cover these concepts. I have decided that in order to create the most coherence with the previous material towards the purposes of my text, it is important to structure the content of this chapter so that I include all the diatonic forms of seventh harmony along with the other triad-based four-note diatonic collections. Having established triadic harmony based on its origins in the diatonic scale, the next logical step is to introduce the 7<sup>th</sup> tone a third above. This is what most all the other methods do. However, neither of them gives a thorough treatment to chords that involve the other 3 diatonic tones as in "add" and "sus" chords and at least not in the musical context in which they are understood in popular music.

The other texts mention these kinds of chords only peripherally or in the context of some contrapuntal devices (as in suspensions). This is due largely to the historical context wherein these harmonies arise. However, framing these chords in the context of seventh chords makes logical sense from the standpoint of the popular musician, who has no notion of the historical development of this harmony and whose usage of such harmonies are not restricted to instances of counterpoint. These harmonies are not uncommon relative to seventh chords as they are often treated in most other theory methods with reference to common practice harmony. Their presence in the repertoire of popular music is far more common, comparable to the seventh chord. Furthermore, suspended chords are not confined to counterpoint (though they can be used this way, as when a sus4 chord resolves to a triad), but are often played as static harmonies demanding no resolution.

### **Further Chord Extensions**

The way the three other texts discuss extended harmony differs greatly from author to author. As stated above, the more common practice orientation of most of the other methods, especially with Clendenning & Marvin's text, means that the space devoted to this kind of harmony is only marginal. Turek does discuss it in his chapter on Chromatic harmony, but interestingly, fails to show how chromatic alteration of pitches can compensate for the inherent dissonance of some diatonic harmonizations. Instead, he only depicts those eleventh chords functioning without dissonance on scale degrees 2 and 6 of major making his treatment of such harmony incomplete.<sup>lvi</sup> Sorce discusses static harmonies (those that do not necessitate internal resolution of dissonances) from the 9<sup>th</sup> to the 13<sup>th</sup> in much more depth. He illustrates how these harmonies arise diatonically, notes the problematic nature of inherent dissonances, and addresses means with which to correct such dissonances, such as pitch omission and chromatic alteration.<sup>lvii</sup>

He also shows how such chords can be respelled with a chord symbol as showing the upper partials of the chord as a triad with a reinterpreted bass note

from the original spelling.<sup>lviii</sup> For example, a Cmaj9(#11) could be spelled as a Gmaj7/C. Though, in theory, this changes the tonal center of the chord, it does make for a more expedited notation that has its benefits for sight-reading. I do not cover this topic in this chapter, but do address it in Chapter 12.

Another notable instance where my text diverges from that of Sorce is how I do not place as much emphasis on all the possible chromatic permutations of a given chord. My method is to simply show that such alterations can occur, often for the reason of avoiding a dissonance, but sometimes to simply bring out other harmonic possibilities. I think that since so many possible harmonic combinations exist, it better serves the point of teaching to guide the student towards self-discovery in this realm rather than inundating them with examples that could needlessly overwhelm a student. Therefore, thoroughness ought to give way to brevity, especially considering that most of these harmonies are never specified in the repertoire and are mere theoretical possibilities. Lastly, Sorce discusses some principles surrounding the proper voice leading of these chords, but as has been mentioned, voice leading and part writing are beyond the scope of this book.

### **Slash Chords**

There is a marked difference between my discourse on chord inversion and those of the other texts. Primarily, this is not a difference in purpose rather the particular mode that attains that purpose. For these authors, the main purpose for this discussion is seemingly to teach the student to identify a chord inversion when it is indicated on a score and to elucidate the purposes or uses for those various inversions. My text does the same thing, however, for the church musician, the application of these principles is slightly different. With the more conventional model, assumed by the other texts, the method of application is primarily descriptive – that is to identify/describe an existing voicing of a chord, making the concept *a posteriori* to the composition and not critical to the actualization of the music. Whereas, for the church musician, whose relationship to the notation (lead

sheet) is, in a sense, more dynamic – where the specificity of the composition is an extrapolation of a hypothetical written generalized ideal, the method of application of such an ideal is prescriptive (for the performer) – that is the concept comes *a priori* to the composition and, in theory, shapes the actualization of the composition. This distinction is subtle, since both models stem from the relationship between the theoretical and actual. The difference is ontological. It thus has the power to shape the musician's entire relationship with the music and utilization of theory.

Therefore, such considerations yield less attention to actual rendering of the sonorities in notation or guitar tablature and more attention is placed on the simple theoretical concept. Specificity in this regard could only go so far, as it is assumed that the reader's application of concepts will be in an ensemble situation where, without composed parts, the spontaneous improvisations of parts is uncontrolled to the degree that the actual rendering of such chords is nearly indeterminable apart from the prescription of what bass note supports the overall harmony. Even then, it is assumed that the bass part – likely to be executed by a bass guitar, keyboard, or both – is not altogether controlled as the degree that the player emphasizes the prescribed bass note is subjective to the musician's improvisation of their part. Consequently, as musical examples from repertoire are presented, the bass lines shown are only to be taken as generalized abstractions of what a bass line could be, it is understood that the bass notes indicated serves more as a “fundamental structure” for the composition, similar to what would be depicted in a Schenkerian analysis. Thus, in a sense the performer interprets the notated instruction in a “reverse-Schenkerian” manner by “re-populating” harmonic reduction of the chord symbol. The explanation of the purpose of the chord symbol shows how the harmonic progression of a composition may be improved by voice leading (in a very basic sense) and gives the student the tools to recognize opportunity to utilize such a technique through a synthesis of the theoretical tools they have gathered thus far (keys, scales, intervals, chord construction, and inversion).

### Chromaticism

For art music, chromaticism, in the sense of being the development of harmonic and melodic structures in the history of western tonal music, has generally had a trajectory that has moved from simpler diatonic structures to more complex chromatic structures. Beginning with the largely pervasive diatonicity of the European renaissance through the chromatic saturation of the late romantic period on into the chromatic atonality of the early to middle 20<sup>th</sup> century, aside from the post-modern backlash of the late 20<sup>th</sup> century, the evolution of western art music has tended toward the complex in terms pitch content.

However, the history of contemporary Christian music (CCM) has plotted a different course. It has been my observation that the history of this music has tended in large part, toward the simple, the diatonic. Even a quick look at the CCLI Top 100<sup>lix</sup>, that is the top 100 most popular songs accessed by their users, will show this trend. Several of the oldest tunes on the list, *Because He Lives* by William and Gloria Gaither and *Majesty* by Jack Hayford are a quite chromatic relative to more recent compositions. *Because He Lives*, written in 1971 modulates three times moving through Bb major, through Db major, D major, and back to Bb. In each of the three tonal areas there are multiple instances where chromatics (such as secondary dominants are employed). *Majesty*, written in 1981, is less adventurous harmonically but still contains enough chromaticism to boast a pitch collection of 10 of the 11 chromatic pitches. However, more recent songs, such as the ones that make the top 15 in the list are strictly diatonic and have been written in the last 15 years.

Therefore, since chromaticism in this repertoire is rare and cannot be treated as the norm, as with the other texts, my treatment discusses all instances of chromaticism in popular music as anomaly from the norm. For instance, I have introduced the raised seventh scale degree in minor, which is treated as the norm for minor in the other texts as they discuss the minor mode, is shown to be the result of modal borrowing. The discussion of this topic reveals special instances

where this technique is employed in contrast to the usual diatonic schema. The text shows these instances in terms of existing songs that “break the mold” as well as special arrangements of more conventional harmonizations to show how chromaticism can enhance a more typical chord progression.

In contrast to the other texts, I have grouped most of the material concerning chromaticism into this single chapter, with the exception of modulation and chromatic instances of chord substitution, which appear in subsequent chapters. The other authors spread this material out over several chapters in a way that seems to trace the development of harmony in western art music more through the course of the method, at least in a manner that does so far beyond what I have done.

My method serves not to show any historical development of the repertoire in question, but to show what is the norm for the repertoire now and propose ideas for how the norm may be either adhered to or departed from. In this sense, by using theory to offer potentialities, it offers a possible for the “future”.

### **Chord Progression**

This chapter departs from the other methods in some very significant ways. Primarily, my approach differs from the others in that it does not place as much emphasis on what kind of chord movement or progression is typical or “permitted” in the repertoire, but instead serves to raise the students awareness as to why and how chords sound the way they do in the context of the key, and to show how these factors influence how a given chord progression is experienced.

For Clendenning & Marvin, once they have developed in the text the theoretical vocabulary with which to discuss counterpoint, they begin their discussion of harmonic progression from the standpoint of the two-voice counterpoint in Chapters 8 and 9.<sup>lx</sup> However, thus bulk of the discussion of chord progression seems to operate from the perspective of the relationship between tonic and dominant in a phrase and over the course of the next 9 chapters (while introducing topics such as embellishing tones, voice leading, chord voicing, figured

bass, amongst others) expands harmonic progression from the tonic dominant relationship to encompass all types of harmony from predominants, mediant chords, leading tone chords, cadences, phrasing, secondary dominants, and all manner of harmonic, melodic, and rhythmic devices that are characteristic in classical repertoire. Throughout these many chapters, there is a careful attention to the historical development of harmony and progression, giving specific attention to various styles from the baroque, classical, and romantic periods.

Turek follows a similar path, though perhaps not as in depth or with as much attention to the particularities of style. In Part 2 of his text, after developing the structure of harmony, he discusses cadences and harmonic rhythm.<sup>lxi</sup> He takes a bit of a detour to give attention to melody, as Clendenning & Marvin do (Chapters 7-10), but returns to chord progression while introducing such concepts as seventh chords, secondary dominants, part-writing, modal mixture, and modulation (Chapters 11-25). In Part 8 (Chapters 26-30), he does give some very careful attention to chord progression in his discussion of musical form in popular music genres.

The text most akin to my own is Sorce's Chapter 8.<sup>lxii</sup> In this section, he provides a very clear discussion of chord tendencies, movement, substitution, tension/resolution, and how chords harmonize melodies. He expands on these concepts in subsequent chapters through his discussion of musical structure (Chapter 11), the chromaticism of secondary dominants, borrowed harmony, and the Neapolitan and augmented sixth chords (Chapter 12, 14, 15, and 16). Also, a very important chapter for this discussion is Chapter 18, which discusses cyclic movement, and stepwise, mediant, and tritone movement.<sup>lxiii</sup>

Each of these others, with possible exception of Sorce, places a significant emphasis, understandably so, on harmonic progression from the perspective of the development of western harmony and the compositional approach of classical music as it is highly influenced by counterpoint. Such an emphasis, however, is not favored for the purposes of my text, especially as this affects the content and

organization of the text on such a large level. As has been stated the compositional, notational, and interpretational methodology of popular music, especially in the form of lead sheet notation, is very different from the classical conventional model. Though it is a given, that the western classical tradition has provided the context for this type of music, this music is not reliant on many of the compositional practices and considerations that concern much of western classical composition, the most notable of which include counterpoint and the strict treatment of cadences. As we have seen, counterpoint is inherent to the a harmonic framework of a composition, the principles that have governed its composition in classical music, are not of *primary concern* to a harmony playing church musician specializing in popular music styles, especially a guitarist, whose ability to execute counterpoint is severely limited relative to that of the keyboard (which has been the platform for the bulk of western classical composition). Furthermore, attention to particular stylistic harmonic devices (specific cadences, stricter resolution of certain dissonances, etc.) is not as much of a concern for my text as the harmonic style of popular music, in its simplicity, has less particularity to warrant any specific treatment. As the bulk of the harmonic progressions consist of diatonic harmonies and smaller scope of chromatic instances, where less attention to counterpoint has influenced the breakdown of stylistic peculiarities (or “rules”) it would not be of significant benefit to list off any of the number of possibilities for chord combinations of this harmony. Rather, it is of benefit, as my text does, to point in more general terms to the tendencies of chords (generalized chord function), that most chord progressions are influenced by these trends. In short, this is the difference between explaining the melodic (contrapuntal), harmonic, and rhythmic considerations that go into the resolution of a perfect authentic cadence from V7 to I,<sup>lxiv</sup> and merely explaining the dominant chords “desire” to return to tonic. The simpler explanation, though far more vague in terms of application, is far more useful to the church musician, who can apply these concepts to a wide array of contexts and is not restrict to one particular realization of what is a broader concept.



### **Chord Substitution**

Chord substitution is compositional practice that is found in most styles of western music. It has its origins in classical music, where substitution describes the historical development of certain chord progressions that “substitute” for the norm as in a deceptive cadence. Though, in application this differs from the more spontaneous reharmonization of tunes that so typifies the practice of jazz, or the arranging techniques for popular songs as described in my text, the theoretical origins are the same – that is, the exploiting of harmonic relationships between chords to generate a progression that is at some level atypical. Interestingly, each of the three texts seems to approach the topic using, to some degree, one of the three applications already described.

Clendenning & Marvin discuss chord substitution, if only inadvertently, through the method they take to explain chord progression and phrasing. Theirs is one that seems to have its roots in Schenkerian theory, where the “basic phrase” is that consisting of an essential “I—V—I.”<sup>lxv</sup> This phrase may be expanded through predominant, leading tone, or six-four chords and specifically a tonic expansion is created through mediant chords and other devices.<sup>lxvi</sup> They also talk about other forms of cadences, including deceptive, Phrygian, plagal cadences.<sup>lxvii</sup> Even if this form of substitution isn’t overt, considering the more common usage of the term, the correlation should be apparent through the fact that Clendenning & Marvin have set up a basic structure that can be expanded and altered using the appropriate harmonic *substitutions*. This type of substitution is indeed helpful for learning the functions of chords and their respective tendencies, but doesn’t go far enough (for the needs of the church musician) to be able to apply this concepts towards a working knowledge of how to substitute chords in an existing chord progression.

Turek’s handling of chord substitution is almost strictly related to jazz practice and much more closely related to thrust of Chapter 12 in my book, where, moving beyond the composer’s decisions, the performer himself is expected to exert a level of compositional responsibility over the performance, a great degree of

which is a result of chord substitution. Ralph Turek defines chord substitution in jazz through several main techniques: tonicization through secondary dominants, and predominants, tritone substitution and its expansions, and auxiliary or passing chords.<sup>lxviii</sup> Though these techniques are indeed helpful they are perhaps not the most immediately valuable or necessary techniques in terms of the means of a church musician. In the large majority of contemporary Christian music repertoire (especially in the past 10 years) there has been a pronounced de-emphasis of the dominant over and above that of earlier styles. The plagal cadence reigns supreme as the dominant (now rarely emphasized through a dominant 7<sup>th</sup>) is relegated largely to status as a passing chord. This has so much become the case that, in many instances, a dominant seventh harmony, which for so many centuries remained the centerpiece or seed for music composition, now sounds out of accordance with the current style of contemporary Christian music.

The reasons for this trend are probably many, but it is my opinion that as the guitar has risen to more prominence as an instrument for the composition and performance of more contemporary music, the musical limitations and difficulties posed by the instrument itself has had a profound effect on the nature of the style itself. Given the challenges facing the guitarist to execute more complex harmony and counterpoint, as well as the natural preference for open strings, the preference for guitar as means of composition and performance has meant that guitarists preferences for diatonic harmony and open strings has led to compositions with far less instances of chromaticism. Furthermore, the preference for ballads<sup>45</sup> (evinced by the majority of more ballad-type songs found on the CCLI Top 100) has also undoubtedly led to the decline of the dominant 7<sup>th</sup>, whose dissonance would be too strong to be prolonged over the longer harmonic durations in the ballads in many cases. Whether the preference for guitar (often played by untrained hands) has sustained a preference for ballads (often less technically demanding) is not certain.

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<sup>45</sup> Strongly melodic compositions with a slower tempo and prolonged harmonic rhythms.

In any event, these preferences or trends do exist in the current style and pose their difficulties (preference for diatonicity and slow harmonic rhythm) make any extensive use of chromatics through secondary dominant substitution (or similarly tritone substitution) not the most immediately beneficial substitution technique. This point is also, why my text, unlike any of the others, employs harmonic *reduction* as a practical method for substitution. It is generally excepted that one of the reasons hymns are beginning to fall out of favor in the contemporary context of the church is that their harmonic complexity and density is rooted in composition and performance at the keyboard and are far more difficult to execute from the guitar.

Richard Sorce, does offer a simpler (and conversely more practical) approach to chord substitution offering many of the same techniques my text employs. He begins with common tones as the basis for substitution, showing that third related chords offer a most immediately practical means for substitution.<sup>lxix</sup> However, his treatment of this is quite limited. This common tone relationship is the basis for most of my discourse on chord substitution in Chapter 12. I begin with a similar discussion of third relationships that Sorce does, but expand this, through the use of common tones, to let it this relationship continue twice and even three times or more over. I also take it to the extra step of employing modal mixture for third related substitutions, whereas Sorce's text is restricted to diatonic substitutions.

### **Modulation**

Once again, though my chapter discusses much of the same material as the other texts do, now concerning modulation, the end goals of the discourse are different. Essentially, all the texts, including my own, cover the same material. We each show that there are five main types of modulation: direct (or phrase), common chord (or pivot chord), common tone, chromatic, and enharmonic modulation, though Turek discusses these techniques under two general headings – those that use a common chord (or tone) and those that utilize some form of chromaticism.<sup>lxx</sup> This is an accurate generalization, as any kind of modulation (with the exception of

a modulation to a relative key) requires chromaticism, though there are two that are do so using common pitches (common tone and common chord).

The difference however lies in the fact that the purpose of my discourse is to equip the student with the technical faculties to implement a modulation from one key to any other employing one or more of these techniques to do so. Also, the student will grasp the virtues of each and the particular quality each one brings to a composition. The student is given a particular creative purpose, for learning the material beyond merely the analysis of modulation in a given a composition. Not to say, that is, that the other texts do not equip one with the knowledge to take the concepts from the analytical stage to the compositional stage, but they are perhaps not as overt as my text towards this goal. This, however, is particularly important for my readers, who (as is described in the introduction to my chapter) have modulation as a distinct concern. They require, perhaps uniquely, the faculty to take a set of songs written in varying styles, from varying composers, in varying keys, with varying text and string them together to create a seamless and compelling flow of music. The Internet is littered with people each offering their various methods to achieve this “flow” in a worship service, which consists largely of modulation in the greater context of arranging a set of songs. Thus, my text goes the extra mile to offer as many theoretical resources possible, while keeping the discussion in the realm of practicality. At each step of the way, I bring up special considerations in the text that contribute to flow, considerations that are either neglected or taken for granted in the other texts, as in how other factors than simply harmonic progression contribute to how effective a modulation is, considerations like rhythm, metric pulse, melody, and consonance vs. dissonance, amongst others. In any case, my approach to modulation is valid and distinct in this respect that it offers a new approach to a musical concern that is not addressed by the other texts.

## Notes

<sup>xix</sup> Ralph Turek, *Theory for Today's Musician* (New York: McGraw Hill, 2007), 52.

<sup>xx</sup> Jane Piper Clendinning and Elizabeth West Marvin. *The Musician's Guide to Theory and Analysis*. (New York: W.W. Norton & Company, Inc., 2005.), xxiv-xxv.; Sorce, Richard. *Music Theory for the Music Professional*. (New York: Arsdeley House Publishers, Inc., 1995), xxi.; Turek, 1-2.

<sup>xxi</sup> Clendenning & Marvin, xxv-xxix., Turek, xxi-xxiii.

<sup>xxii</sup> Sorce, xxi.; Turek, 1-2.

<sup>xxiii</sup> Sorce, xxi.

<sup>xxiv</sup> Turek, 1-2.

<sup>xxv</sup> CCLI – Christian Copyright Licensing International, “Church Copyright License,” Christian Copyright Licensing International, <http://www.ccli.com/why> (accessed July 17, 2010).

<sup>xxvi</sup> CCLI 2009 License Holder Survey Results, “2009 License Holder Survey Results,” Christian Copyright Licensing International, <http://www.ccli.com/survey/2009> (accessed July 17, 2010).

<sup>xxvii</sup> Ibid.

<sup>xxviii</sup> Sorce, 1; Turek, 741.

<sup>xxix</sup> Clendenning & Marvin, 4.

<sup>xxx</sup> Ibid., 20.

<sup>xxxi</sup> Sorce, 4-5; Turek, 760-761.

<sup>xxxii</sup> Clendenning & Marvin, 20.

<sup>xxxiii</sup> Sorce, 10-11; Turek, 762-763.

<sup>xxxiv</sup> Sorce, 10-12; Turek, 761-768.

xxxv Sorce, 4.

xxxvi Ibid., 35.

xxxvii Turek, 744.

xxxviii Clendenning & Marvin, 6, 43-45.

xxxix Ibid., 106.

xl CCLI 2009 License Holder Survey Results, "2009 License Holder Survey Results," Christian Copyright Licensing International, <http://www.ccli.com/survey/2009> (accessed July 27, 2010).

xli Clendenning & Marvin, 42-43, 59-60.

xlii Turek, 4-5.

xliii Clendenning & Marvin, 47-49.

xliv Turek, 749.

xlv Sorce, 41-43.

xlvi Clendenning & Marvin, 95; Sorce, 57; Turek, 19.

xlvii Turek, 20-21.

xlviii Sorce, 59-61.

xlix Clendenning & Marvin, 98-101.

<sup>1</sup> Ibid., 112-113.

li Sorce, 79-83.

lii Turek, 38-41.

liii Clendenning & Marvin, 120-132.

liv Sorce, 81-93.

lv Turek, 39-45.

lvi Ibid., 529.

lvii Sorce, 382-391.

lviii Ibid., 393-394.

lix PraiseCharts – CCLI Top 100 Songs, “CCLI Top 100 Songs,” Praise Charts, <http://www.praisecharts.com/ccli> (accessed August 2, 2010).

lx Clendenning & Marvin, 134-152, 153-171.

lxi Turek, 93.

lxii Sorce, 176-195.

lxiii Ibid., 417-431.

lxiv Clendenning & Marvin, 212.

lxv Ibid., 198-212.

lxvi Ibid., 250-274, 276-283

lxvii Ibid., 298-306.

lxviii Turek, 547-566.

lxix Sorce, 185-186.

lxx Turek, 492.

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