

Intervals & The Major Scale

Chapter 1 - Introduction

This is a **two part paper**: It's the first paper I've written for my blog and video tutorial library called ***Play Better Jazz Now***. I'm reaching out to the beginning musician as well as the more experienced musician who has never studied jazz theory.

The topic of Intervals is the most important first topic in jazz theory to study because it is the prerequisite for all basic jazz theory topics that follow. Throw a dart at the jazz theory basics table of contents and you will hit a topic that has intervals as a prerequisite. I am reaching out to every musician who has ever asked the question, "I want to compose songs, construct harmony and melodies, and I want to improvise like the pros! What should I learn and what should I learn first?"

So why did I include the Major Scale in this paper? The easy answer is the Major Scale is the second most important topic to master after intervals. Why? Well, sometimes it makes more sense to trust the foresight of an instructor and allow the light to come on at the right time. Having said that, I will elaborate on the answer with an analogy. Intervals are to music as the alphabet is to the English language. Intervals are the letters of the language of music, which is why they are the prerequisite to all jazz theory topics, directly or indirectly. Every word spoken or written is made up of letters, and every sound heard or played beyond a single note is made up of intervals. It so happens the Major Scale is the first most important consequence of the table of intervals, and jazz music is arguably based on the Major Scale.

Most of the information here is peripheral, dispensable, simply stated - not necessary if you only want to learn the minimum information that will enable you to move to the next topic on your journey to learn how to play jazz music and improvise. The extra information is here because I love jazz theory. I dig talking about it and writing about it. And it will answer many questions inevitably asked about intervals. So I say:

Learn Intervals Now. Don't Delay. Sit at the Piano or Pick Up Your Axe and Learn Your Intervals Now. Why? Because:

Intervals are the building blocks for all things jazz.

Lastly: I welcome conversation. There will always be someone who will learn from the Q&A including myself. I am not an expert in Ethnomusicology, Music Theory or specifically Jazz Theory. But I love the subjects, and I can safely say I have a great deal of experience and knowledge regarding these topics. I dig having conversation about jazz theory and related subjects. Please start a conversation if you think it will be helpful to anyone including just yourself. I sincerely hope you do. In the conclusion of this paper I will summarize what's next on your journey to learn how to Play Better Jazz Now.

There are 2 ways to navigate this paper full of fun facts about intervals and the Major Scale: **FAST TRACK** and **EXPERT TRACK**.

The **EXPERT TRACK** is easy - read the entire post. It's a fast read. There's lots of information, tips, suggestions, a little background, a handful of my going round and round saying the same thing in two or four different ways, and even a small handful of information having nothing to do with intervals or the Major Scale. Nonetheless, it is a fast read.

If you *only* want to learn the bare bones about intervals and the Major Scale, then walk the **FAST TRACK** as prescribed:

FAST TRACK:

- I. Start where you see **FAST TRACK** (First occurrence is Chapter 3 / What is Music?
- II. Read the information between the words **FAST TRACK** and **FAST TRACK Continues at.....**
- III. When you see **FAST TRACK COMPLETE!**, read the conclusion to this paper and then move on to my subsequent papers.

Summary of Part 1

Part 1 is a brief discussion on why the jazz musician cares about intervals and how intervals are integral to all aspects of jazz.

I briefly discuss top prerequisites as they pertain to the discussion of intervals. These top prerequisites are:

1. How we name notes,
2. The 12 note music system,
3. Melody,
4. Harmony,
5. Rhythm,
6. Chords,
7. Semitone,
8. Half Step,
9. Whole Step.

Summary of Part 2

Part 2 is all about the “Table of Intervals”. I define the 12 intervals and interval names, explain the relationship between the interval names and the arrangement of the intervals in the Major Scale, and I define and/or explain the terms used in the Table of Intervals.

Part 1

Chapter 2 - Why We Love Intervals -

12 Intervals are All We Have and All We Need to create music; from simple melodies and basic chords to elaborate orchestrations. I mentioned in the first paragraph of this paper the first thought I had about intervals. It is probably the most important message with which I can begin, and it will also be the best message with which to leave you at the end of this post: **Intervals are the building blocks for all things jazz.**

Regardless the level of your knowledge of music theory or jazz theory, this posting is for all those who ask this question: “What is the best first thing to learn if I want to play jazz and improvise like the pros?” Or you may ask, “I

love songwriting, but i'm often stuck during the writing phase or I settle knowing my song may be good, but not great. What's the best course of action to up my game?" The answer to these and all similar questions is, of course, ***master the Intervals and the Major Scale***.

If you start thinking about intervals now, and continue to study intervals from this point forward, everything jazz will be easier to learn and to apply because again - everything you learn from this point forward will have something to do with intervals, directly or indirectly. Once you learn intervals, using them, building on them, manipulating them will be natural - organic. It will not be a forever burden with which you must deal. In fact, you will probably find the relationship between intervals and a great jazz improvisation or jazz composition is nothing less than fascinating. I promise you. So let's dive in.

Chapter 3 - Interval, Melody, Harmony and Rhythm Defined -

The only purpose for introducing the terms Melody, Harmony and Rhythm is to illustrate the fact that intervals are the building blocks for all things jazz. Detailed information about these topics can be found in subsequent papers of mine. I reserve the body of this paper for detailed information about intervals.

FAST TRACK

Interval: An ***interval*** is the distance, or difference, or change in pitch between two notes (tones) that are played simultaneously or in series. Therefore, an interval requires 2 end points - 2 notes.

What is music? All musical works are a combination of *melodies*, *harmony* and *rhythm*.

Melody: A *Melody* is a sequence or series of intervals played one at a time, in order from left to right (horizontally) when reading music. A little shorter: A melody is a linear sequence of intervals.

FAST TRACK Continues at Chapter 4 / Steps Takeaway

Harmony: A stacking of intervals, or a vertical collection of intervals played simultaneously; example - a Chord. Harmony is more than *chords*, but all

chords are *harmony*. A chord is a collection of specific intervals played at the same time to create a desired quality. A chord represents a **quality** of sound. **Interval Quality** is discussed in Part 2.

Refer to Fig 1. Looking at the sheet music segment in this figure, we can see the components of music; **Melody+Harmony+Rhythm**.

MELODY - CONSISTS OF 9 INTERVALS.
1ST INT. (C-E). 2ND INT. (E-G), ETC.

INTERVAL [B
INTERVAL [G CHORDS (HARMONY) - CONSISTS OF 3 INTERVALS EACH
INTERVAL [E - STACKED.
INTERVAL [C FIRST CHORD IS CMAJ7: (C-E), (E-G), (G-B)

Figure 1: Melody + Harmony + Rhythm = Music

The horizontal sequence of 9 notes in the treble clef is the Melody. The first interval in this example melody is (C-E). We say “from note C to note E”, or simply “C to E”. The second interval is (E-G). The last interval in this melody is (C-C), and so on.

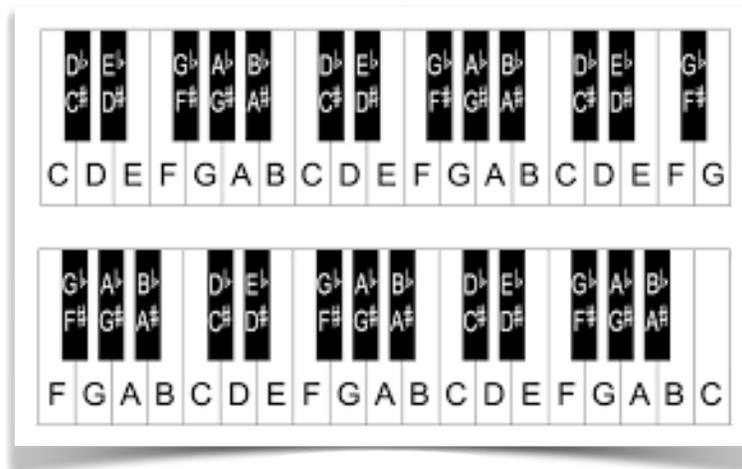
Chords(Harmony) - A sandwich made of layers of intervals

The Chords in the bass clef of this example piece are intervals played simultaneously. The first chord, Cmaj7 (refer to the figure), is a stacking of intervals (C-E), (E-G), and (G-B). Notice you can see the intervals

vertically, like bricks stacked upon each other. These chords are the Harmony that supports the Melody.

Rhythm - What happens when intervals are played with different durations

Rhythm is a tough concept to describe or define. I've studied and composed music for rhythm sections during my years arranging for Concert Bands, and I still find it challenging to define. I'll take a stab at it. Rhythm is the occurrence of sounds in time. For example; A drummer will read his or her music that has different note types which dictate the duration of the sound the drummer creates when he or she hits a snare drum with a drum stick (for example). The variations of occurrences creates Rhythm. A rock and roll rhythm and a Bossa Nova rhythm sound different because the variations of the occurrences of each percussive sound is completely different when comparing to two rhythm types. There are numerous variables that effect the occurrences of sound such as beat, tempo, accent and many more, all of which effect the Rhythm. There are volumes I'm to discuss about rhythm, and I'm sure I will write a post or 20 in the near future, but not today. Okay, enough of that for now. Back to the interval.



Chapter 4 - The Basic Intervals (Steps) and Naming Notes -

When I see Music, I see Intervals

Hopefully my bold statement is much more believable now. Other than Rhythm, I don't think we can look at a score without seeing horizontal and/

or vertical sequences of intervals - everywhere - without exception. If you find an exception, let me know.

We only have 12 notes in our Western music system. Let's find them and name them.

Take a look at the piano in the image above. It's easier to visualize notes, as well as the physical space between to keys (intervals) when looking at the piano action (keys) than say the valves on a saxophone, trumpet or tuba. (Tuba?) The 12 notes, starting from C (I could have started on any of the 12 notes) are:

C, C#(Db), D, D#(Eb), E, F, F#(Gb), G, G#(Ab), A, A#(Bb), B, C(same as first C).

Notice I did not show 2 names for E, F, and B. By convention, it is preferred to name a note without the use of an accidental (# or b) if possible. If we find ourselves calling the note between Eb and F as Fb, this might look clumsy because on the piano, the physical key Fb has its own letter name, E. Fb looks clumsy (and will soon sound clumsy) and we should not use Fb unless convention dictates. For example, when we are building scales using intervalic rules, by convention we do everything we can not to double letter names or skip letter names if possible. When building Major Scales, the intervalic rule allows us to never have to skip a letter name or double a letter name. For example: Let's take the F# Major Scale (I will define the Major Scale and how to build it later in this post). The notes are:

F#, G#, A#, B, C# D# E#. Notice we did not skip a letter or double a letter.

Referring to the same figure above, we can see E# is F. And just a moment ago I stated that we should not use an accidental if a key has its own letter name. But, if we use the label F instead of E#, then we would be skipping and doubling letters. Let's replace E# with F. When we do, the scale will still be and sound the same. The F# scale would then look like the following:

F#, G#, A#, B, C# D# F.

This is correct, I mean, these are the notes that make up the F# Major Scale - but what happened to letters E? This is what I and most musicians call **clumsy**.

Semitone, Half Step, Whole Step. [Do Not Skip Takeaways below]

What language do we use when we talk about moving from one note to another? In order to move about the piano keys from one note to another when reviewing the different intervals, we need to have a way to talk about *moving from one note to another*. We do this by using the terms Semitone, Half Step and Whole Step.

A **Semitone** is the formal name for **Half Step**, which is the distance from any note to the next possible note above or below the said note. There are as many Semitones (Half Steps) as there are pairs of adjacent keys on a piano. There are no notes between the 2 notes that make up a Half Step.

A **Whole Step** is (as you probably guessed) 2 Half Steps, back to back (above or below a note). There is only 1 note between the two that make up a Whole Step.

By the way: Since Half Steps (Semitones) and Whole Steps are terms that describe moving from one note to another, they must be intervals.

Remember, **an interval requires 2 notes**. Therefore; A Half Step is the smallest interval we have, and a Whole Step is the next smallest interval.

Examples of Half Steps are: (Refer to the piano figure)

(E-F), (F-F#), (D-Db), (D-C#) and (B-C). (Can you see 2 identical intervals in this small group?).

Examples of Whole Steps are:

(C-D), (C#-D#), (C#-Eb), (Eb-F), and (C-Bb). (Can you see the 2 identical intervals in this small group?)

FAST TRACK

Steps Takeaways: The important takeaways about Whole Steps (W) and Half Steps (H) are: Both are intervals. $W=2H$. $H=1$ Semitone. There is

only 1 note between the 2 that make up a Whole Step. There are no notes between the 2 that make up a Semitone (Half Step)

Chapter 5 - The Major Scale and the Major Scale Intervallic Rule

The Major Scale

With respect to intervals and the interval naming convention, we only need to understand the construct of the Major Scale; the intervals used to build the major scale and the qualities of the intervals that make up the major scale.

The Major Scale Intervallic Rule:

As implied by the name, the intervallic rule is the one definition (of several) that uses intervals to define the scale. The Major Scale consists of Half Steps and Whole Steps in the following order: Note: R = the Root of the scale; the name of the scale and the first note of the scale, W = Whole Step and H = Half Step.

The Major Scale: R - W - W - H - W - W - W - H

Because there are 12 notes in our Western music system, there are 12 Major Scales, each having a unique Root, and each having uniform construct. Because each has the same intervallic construct, each will “sound” identical with respect to how each note sounds after the other starting from the first note. Unless you have APP (Absolute Perfect Pitch), when you recognize a major scale by listening to all 7 notes played in series starting from the Root of the scale, you will not be able to determine which of the 12 you hear because again - they are all uniform.

At this point, I have introduced enough preliminary information such that we can move to Part 2 of this paper: The Table of Intervals - Definitions and Naming Convention.

FAST TRACK Continues at Chapter 6 / Table of Intervals

Part 2

Chapter 5 - Introduction to Part 2 -

Part 2 is all about the “Table of Intervals”. I assembled this table with what I believe is the minimum information required to enable you to learn whatever comes next on your path to learn jazz theory. That is easy for me to say because I hold to my first claim: intervals are the building blocks to all things jazz, which includes all of the topics you will be learning from my subsequent posts after you grasp the entire concept of intervals.

My approach at this point is based on my assumption that most of you will go directly to the table in the hope of getting what you need without having to read further. And that might very well happen. If I am correct, you will study the table and inevitably have questions about the terms used, about inconsistencies, non-uniformities, etc. I second guessed the questions and address them directly and indirectly. In the cases where I am very direct I may not answer your question satisfactorily. When this occurs, ask and you shall receive. Remember, this is a blog - go for it. In other instances, I will be diving deep into subtleties with which you may not want to deal. If I believe there is a probability your eyes will be rolling to the back of your head as I pontificate about things you can care less about, I will forewarn you by suggesting you skip or skim through to the next fun little fact about intervals.

Intervals are Easy, Straightforward, and for the most part Obvious.

Learn them, play them, listen to them, and sing them.

Intervals are beautiful. Every sound you hear that moves you is the sound of 2 or more notes played in series or together. If you love the sound, learn the intervals that created that sound and emotion.

Listen to your favorite jazz musicians improvise over your favorite tunes. Truly listen to the lines, the series of notes, the intervals. If it moves you, listen again and again and again until you can sing the intervals and play the intervals. Once you hear them organically, you will be using them organically.

Every pair of notes is a beautiful interval moving you in all ways and directions possible. Intervals are all thing jazz.

Chapter 6

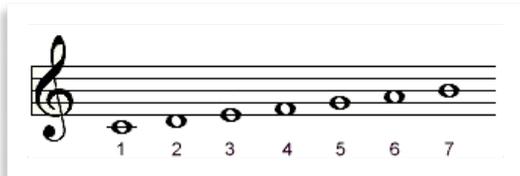
Table of Intervals & Support Information

(Table on next page)

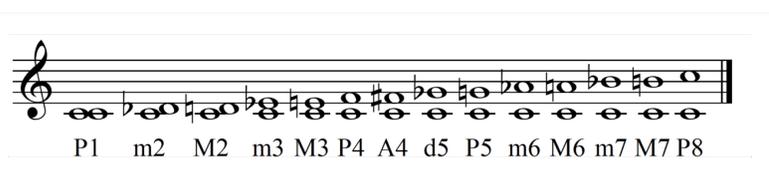
FAST TRACK (FINAL SET OF INFORMATION)

Table 1 - Table of Intervals

Table 1 12 Intervals - Name and Quality						
Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7
No.	Name	Name Abbr's	Numeric Label, Arrangement in the Maj Scale	Quality	Qty: Whole Steps (W), Half Steps (H), (Semitones)	Interval Starting from note C
N/A	Perfect Unison	P1 or PU	1	Perfect	0 H & 0 W, (0)	C1 - C1
1	Minor Second	m2	N/A	Minor	1 H (1)	C - C#(Db)
2	Major Second	M2	2	Major	1 W (2)	C - D
3	Minor Third	m3	N/A	Minor	1 W + 1 H, (3)	C - Eb
4	Major Third	M3	3	Major	2 W, (4)	C - E
5	Perfect Fourth	P4	4	Perfect	2 W + 1 H, (5)	C - F
6	Augmented Fourth (Tritone)	A4 or TT	N/A	Augmented	3 W, (6)	C - F#
6	Diminished Fifth (Tritone)	D5 or TT	N/A	Diminished	3 W, (6)	C - Gb
7	Perfect Fifth	P5	5	Perfect	3 W + 1 H, (7)	C - G
8	Minor Sixth	m6	N/A	Minor	4 W, (8)	C - Ab
9	Major Sixth	M6	6	Major	4 W + 1 H, (9)	C - A
10	Minor Seventh	m7	N/A	Minor	5 W, (10)	C - Bb
11	Major Seventh	M7	7	Major	5 W + 1 H, (11)	C - B
12	Perfect Octave	P8	8	Perfect	6 W, (12)	C1 - C2



C Major Scale



12 Intervals + P1. (A4/d5) same interval

This is my first of hopefully endless tutorials on jazz theory. You might as well know now - Mindful Meditation Techniques are a part of every post and tutorial video I create for hungry jazz students and jazz lovers everywhere. Being Mindfully Aware of what you hear and play increases the learning and application effectiveness. And let's not forget your enjoyment and love for the craft. Jazz music and composition are nothing less than wonderful. Increasing your awareness of all things jazz only increases your enjoyment and love for the craft.

1) Mindful Technique for Learning Intervals Do Not Skip: It's Time to Meditate: Most of the information in the table is descriptive in nature - low priority in the scheme of things. Col 2 is what is important right now. Before you move forward, do the following "Interval Meditation". This is a beautiful meditation I do often. I call it; **Play-Listen-Identify**. This is a short meditation and its effectiveness is totally based on your level of focus, awareness and relaxation.

- I. Relax - Breath easy and slow - Zone in on your axe - Play Well, every note.
- II. Play the note C. Then play D. Listen to the interval. Say the name. Repeat this for the Major Second Interval - at least 2 or 3 times. Play-Listen-Identify at various speeds.
- III. Do this meditation for the Major Third, Perfect Fourth, Perfect Fifth, Major Sixth, Major Seventh and Perfect Octave. (This is the C Major Scale)
- IV. Then: Do the meditation for the Minor Second, Minor Third, Augmented Fourth / Diminished Fifth (same interval), Minor Sixth, Minor Seventh.

2) You now understand a great deal about the interval names and how they sound. Let's talk briefly about the most important aspects of our wonderful 12 intervals. 13 if you rather listen to those who believe two exact notes played in series is an interval. Try it for yourself. Play (D-D). Did you hear a change in tone? I didn't. So I don't consider it an interval by definition. Is it an important pair of notes? ABSOLUTELY.

- I. Music, music theory, intervalic scale rules and interval naming conventions are all organized systems. Additionally, they do not exist alone - they are interrelated. Therefore, it is imperative to illustrate the 12 notes in the table of intervals as a series of consecutive notes, starting with any one note and moving upwards by semitones from the previous note until you reach the first note an octave higher than the first. By setting up the table in this way, it becomes easy to see all of the relationships between the Major and Perfect Intervals, the Major and Minor intervals, the Major Scale, and much much more. *(Skim or Skip - I started to diverge here but I hope you continue reading.)* The only reason why I assembled the table starting with the note C is because the associated C Major Scale is the best Major Scale with which to begin. The key signature is no accidentals (no #'s and no b's) and on the piano, all of the notes are the white keys, which makes it extremely easy to visualize the natural notes and the most consonant notes with respect to each other. It is an interesting concept, yet easy to ignore and have it pass you by like a breath of wind. Notes by themselves have no relationships. On the other hand, a series of notes (melody) has a structure - a body and a face with expressions which has everything to do with the relationships between the notes. Notes are like people - They don't do well alone. They thrive on stable relationships. Actually, there are intervals (pairs of notes) that are considered stable while others unstable. And we love the unstable intervals because they drive us to the most stable. Each consecutive note played in a melody are like words in a sentence. Some must resolve to another, while others can rest awhile upon when reached. Melodies express emotion like language. It's easy to compare music to life - there are countless similarities. But, I diverge. Back to intervals:
 - II. The Interval Names are shown in Col 2: The name of each interval has a **quality component** (Major, Minor, Perfect, Diminished or Augmented), and a **numeric component** (2, 3, 4, 5, 6 and 7).
 - III. By convention, the numeric component is used to indicate the arrangement of the 2nd note of each of the 12(13) interval. See Col 4.

- IV.** Of the 12(13) intervals; P1, M2, M3, P4, P5, M6 and M7 (played in series) are the notes in the C Major Scale. The quality is either Major or Perfect, and there are 7 positions / notes.
- V.** The remaining intervals not in the Major Scale are intervals between the notes in the Major Scale. The qualities of the non-Major Scale intervals are Minor(2, 3, 6, 7), Diminished(5), and Augmented(4). Check out Col 5.
- VI.** Why are several of the numerals in two interval names? Using 2 as an example: The Major 2nd interval has 4 semitones and the top note is in the Major Scale. The Minor 2nd interval has 3 semitones and the top note is between the 2nd and 1st notes of the Major Scale.
- VII.** The Tritone is an important interval. It is the only non-unison symmetric interval. It is not in the Major Scale. It is not in the 3 Minor Scales (not yet discussed - refer to subsequent posts). It is called a symmetric interval because it has the same number of semitones (6) despite the direction. Ex: The Tritone in the table is (C-F#(Gb)). If you start at C and move up or down 6 semitones, you will reach an F#(Gb) note. And, if you start with F#(Gb) and move up or down, you will reach a C note. This characteristic has wonderful audible / acoustic benefits (not detailed in this post). An example benefit: Tritones make great chord substitutions. Because I have not defined chords or progressions or voice leading, it is virtually impossible to give an example. However, with respect to a single note bass line (one note at a time in series), or a single note melody, or any series of single notes: Let's take the following bass line:
- (I)** D, E, F, G, C. This line ends on C. Therefore C is note to which we want to resolve (end). Take it from me, the notes G to C will feel like a smooth resolution from a note that might feel unstable to a note that is home base and therefore as stable as a note can get. If we start with this as being fact, then we can look at a substitute for G that will still resolve nicely to C and end the line. Let's use the Tritone. As stated above, a Tritone is 6 semitones up or down from any note. We are looking for the Tritone of G.

Lets' go down because it will be smoother moving from a note to another if they are close together (smaller interval). This is called "good voice leading". Remember, the Tritone of G is a note above or below, which means that it is the same note. What is the Tritone of G: G - G# is 1 semitone. G# - A, 2nd semitone. A - A#, A#-B, B- C, and C-to C# for a total of 6 semitones. Therefore the Tritone of G is C#. Let's right the new line:

- (II) D, E, F, C#, C. Play like this: D, up to E, up to F, Down to C#, Down to C. This line should give you the same feeling as the original. They both end at the home base note C. They both have a strong resolution note (unstable note) that wants to go to C. Play it on the piano and see what happens. It would be stronger if you already knew how to play chords. Again, look for my subsequent posts. Nonetheless, the Tritone interval is a wonderful interval that has many benefits to the jazz musician.

From this point forward in this post, the **FAST TRACK** set of information is complete. There is a lot of wonderful useful information in the following sections. However if you depart now, I'm personally confident you will be successful on your journey learning how to play jazz and improvise like the pros. The next best place to go in my "Basic Jazz Theory" posts are the next 2 posts; "Triads and Chords" and "The Major Scale and The Major Diatonic Sequence of Chords". I have other "Quick Tips for the Week" posts that you can review and/or study.

FAST TRACK COMPLETE

Chapter 7

More Definitions, Observations and Other Fun Little Facts

- 1) **Regarding the numeric name:** By convention, a numeric value is used to indicate the arrangement of the 2nd note of the interval in the datum major scale. Look at the Major 2nd interval (C-D). The first note of the interval is the Root of the datum major scale. The C Major Scale is the datum scale for the intervals in Table 1. Note D is the second note in the interval and is the second note in the C Major Scale. Because C is the Root of the datum scale, it is the first note in the scale, and every

interval in the table has a first note C. In your meditation, you started by only playing the **Major and Perfect Intervals**. When you did, you played the C Major Scale.

2) Why not Perfect First and Perfect Eighth?

- I. **Regarding not using numeral 1 in the first interval:** There is a “first note of the scale”. However, we don’t say “Perfect First”. Instead we say “Perfect Unison”. The interval (C-C) is a Perfect Unison (although I would have to identify which note C on the piano I am talking about. There are 8 C’s on an 88-key piano. In this case the interval is really (C4-C4)). Yet, it is really not an interval because there is no change in tone - no change in the note. However, we do need to account for the many times a series of 2 notes is played in a melody with no change in note or tone. The 2 notes are identical, so we say they are in unison. This is not to say they are played at the same time, but they are the same note. In this case (C4-C4), the first note is C which represents the Root of the datum major scale. The second note is the same note C which represents the position of that note in the C major scale - obviously position 1.
- II. **Regarding not using the numeral 8:** There are only 7 unique notes in a major scale. The eighth note is really just a duplicate of the first note but an octave higher. The term Octave refers to the number 8; In this case, the eighth position in the scale. Octave and the number 8 is similar to Octopus, Octagon, Octopod, Octet, Octuplet, Octavo, Octachord and Octodecillion and the number 8. It so happens Octave, Octet, Octuplet and Octachord are musical terms.
 - (I) Octet is an 8 piece band.
 - (II) Octuplet is an evenly played series of 8 notes in the same time duration as 7 of the same note types.
 - (III) Octachord is a chord having 8 notes / 7 intervals.
 - (IV) Octodecillion has absolutely nothing to do with the number 8 or music. I mentioned it because it is a large number (10^{57}); a number I wish represents the number of dollar bills I have in my savings account. I wish I never heard of the number Octodecillion.

(V) Unlike the Perfect Unison, I do consider the Perfect Octave an interval. Although both notes are the note C, there is a change in tone. The first note C in Table 1 is C4 (The 4th C from the left (low end) of an 88-key piano). The second tone (C5) does “sound” higher as a result of the piano string vibrating close to two times as many vibrations per second as the C4 string is vibrating. Like the Perfect Unison, we don’t say Perfect Eighth, we say Perfect Octave.

3) Some Interesting Major Scale Intervallic Rule Observations with respect to The Table of Intervals

- I. This section has interesting and, from my perspective, important Major Scale observations that should not be skipped or skimmed over. If however you do decide to skip the totality of these super cool observations, then at a minimum - get your arms around the takeaway.

Takeaway: Starting from any 1 of our 12 notes, we are able to make a list of the 12 possible intervals - all having the same common 1st note. In Table 1 we use the note C as the common tone. Of the 12 intervals created, we have some Major, Minor, Diminished, Augmented and Perfect. If we isolate all of the Major and Perfect intervals, we will have all the notes in the C Major Scale.

- i. In Part 1, we learned the Major Scale Intervallic Rule:
 - i. R-W-W-H-W-W-W-H. To iterate: each Whole Step and Half Step in this illustration is the number of semitones we move from one note to the next. If we replace each W with 2 semitones and each H with 1 semitone, then the intervallic rule illustration becomes:
 - ii. R-2-2-1-2-2-2-1. In this illustration, each numeral 2 and 1 are the number of semitones we move from one note to the next. Now, let’s look at the identical intervallic rule but replace the individual delta semitone movements with the number of

semitones as a cumulative total from the Root of the scale to each note in the scale. The new illustration looks like this:

iii. R(0)-2-4-5-7-9-11-12. In this illustration, the numbers now equal the total semitones from the Root of the scale to the note where the number resides. Example: The 4th note in the scale is 5 semitones from the Root of the scale. Now let's change the illustration one last time so that we can visualize the Quality of the intervals from the same Root: As can be deduced from the data in Col 5 and 6, and in summary:

(i) Major Intervals have 2, 4, 9, or 11 semitones.

(ii) Minor Intervals have 1, 3, 8, or 10 semitones.

(iii) Perfect Intervals have 0, 5, 7, or 12 semitones

(iv) Augmented and Diminished Intervals each have 6 semitones (Tritone)

The Major Scale Intervalic Rule as illustrated using interval Quality is as follows: refer to the abbreviations in Col 3

iv. P1 (0), M2 (2), M3 (4), P4 (5), P5 (7), M6 (9), M7(11), P8 (12). You should notice the total number of semitones that make up each of these Major and Perfect intervals match those in Col 6.

II. The interval types defined in Col 2 are not debatable. I know that you can search the internet and find numerous websites that define intervals. And when you do, you will find several variations for the total number of interval types. For example:

I. I state there is only 1 diminished interval, and 1 Augmented interval. But how do we ignore the fact that Augmented means raising the top note of an interval by 1 semitone, and Diminished (like Minor) means lowering the same note 1 semitone? Can't we lower the top note of any interval and then call it Diminished, or raise any note and call it Augmented?

II. Referring to Col 2, let's look at the Major 3rd interval for a moment. We can agree that if we lower the top note of M3, we will

have the m3 interval. And we can see the m3 interval is between M2 and M3. Now let's raise the top note of M3 by 1 semitone. Do we have an Augmented 3rd interval? It's debatable because what we really have is the Perfect 4th interval. $Aug3=P4$.

- III. What would be the advantage for changing the name P4 to Aug3? I know of none.

What I did with the table of intervals was define only the intervals that are not debatable. You may ask, what about the fact the Aug4 interval = the Dim5 interval? I have it in the table as being undebatable. Both Aug4 and Dim5 are Tritones. A Tritone is a symmetric interval. Take the interval (C-F#(Gb)). The interval consists of 6 semitones. If you start at F#(Gb) and move up or down 6 semitones, you will end up at C. And the converse is the same; 6 semitones above or below C is F#(Gb). Therefore, these interval definition are not debatable. In a set of 12 intervals (all having the same Root), there is only one Tritone interval. And it is always between P4 and M5, which are both consonant intervals. They are equal in all accounts.

- III. The term Perfect is only used in connection with unisons, fourths, fifths, and octaves. These are the most consonant sounding intervals we have.
- IV. The terms Major and Minor are only used in connection with seconds, thirds, sixths, and sevenths.
- V. Generally, the term Minor is used when the 2nd or top note of an interval is lowered by 1 semitone. However the naming convention for intervals does not agree with this generalization.
- VI. The term Diminished is commonly only used in connection with a fifth. However similar to the term Minor, the term Diminished is used when the 2nd or top note of an interval is lowered by 1 semitone.

Chapter 8 - Exercises and Conclusion

Hopefully you have learned what you set out to learn. Please start a conversation if you have a question or if you have a relevant comment to make. I hope, at a minimum, you learned and practiced the following:

Exercises

1. Referring to the Table of Intervals, practice the Mindful Meditation “Play - Listen - Identify”.
2. Using the Table of Intervals having C as the 1st note, choose a different note and transpose the intervals.
3. Find the Major and Perfect Intervals from the table and play the C Major Scale. Then find the Major and Perfect Intervals from your new table.
4. Using your knowledge of H and W Steps and the Major Scale Intervalic Rule, Build as many Major Scales as possible.
5. Make a list of Perfect 4ths, starting with C and be sure to move upwards each time. C - F - Bb - ect.
6. Make a list of Perfect 5ths, starting with C and always move upward.

Where to go from here?

The next topics to study are:

1. Chords:
 - a. Triads
 - b. 4-note chords
2. Diatonic Sequence of Chords
3. Chord Patterns - The Order of Chords.
4. Scales