INTERTALS

The interval is to music as the atom is to matter—the basic essence of the stuff. All music as we know it is composed of intervals, which in turn make up scales or melodies, which in turn make up chords, etc. An understanding and ability to use intervals can be very helpful in (1) grasping the construction of chords, (2) understanding why we are affected by musical sounds the way we are, (3) communicating with other musicians who use the universal language of intervals (you might have heard somebody say something like “Let’s move that whole thing up a minor 3rd,” or if not, you will, so it would be nice to know what they are talking about), (4) composing quickly and consistently with new, fresh ideas.

The word “interval” refers to the sound resulting when two tones are heard together. Another common definition is an interval is the distance between two tones, measured by their difference in pitch.

If the two tones are not heard at the same time, but rather one after the other, this is called a melodic interval; when the tones are heard together as mentioned above, this is called a harmonic interval.

Example:

There are at least three common properties of all intervals: (1) its general name, (2) its specific name, and (3) its degree of what are known as consonance or dissonance (more on this soon). First, the general name is found by counting the letters of the musical alphabet involved (normally this is done from the bottom note up in harmonic intervals, except for special situations, which will be covered later); in a melodic interval you just mentally join the two notes and analyze as if it were a harmonic interval.

Examples:

If you count the letters up from E (EFGAB) you get five and the interval is called a 5th, and the same thing goes for the other intervals listed above.

Notice that if sharps or flats are added to the above, the general names are still the same.

Looking at the first example above, and comparing it with the first example on the previous staff, you will see that some method is necessary to be able to distinguish intervals that have flats and sharps from their unaltered brothers—in other words, they are both 5ths but how are we to refer to one without referring to the other if we want to; it is like knowing that three people all have the same last name of Smith and live in the same house, but suppose you want to refer, in a conversation, to just one of the three; that is why we have first names—so it is with intervals. We also give them specific names [see Transcriber’s note on page 5]. One of the most common methods used in giving the specific names to intervals is by assuming that the bottom note in an interval is the root of a major scale. If the upper note is one of the notes of that major scale, the interval is called major, unless it is an octave, 5th, 4th or unison (two of the same note) in which case the term perfect is used.
Perfect intervals are so called because these were the only intervals tolerated by the human ear in ancient days. All other intervals were considered harsh or unpleasant. This seems pretty amazing to us now, that people couldn’t tolerate 3rd and 6th intervals and others, but it is true, and because of this they named their only useable intervals (unisons, 4ths, 5ths, and octaves) perfect. Well, gradually mankind’s ears got more tolerant and they accepted the other listed intervals (which we now call major) and quite a few others also (soon to come).

Playing with Perfect Intervals

Perfect intervals are the strongest intervals of all. Play the following example of all 5ths and notice the feeling of solidity, strength given off.

Intervals are also classified by how consonant or dissonant they are. A consonant interval is one which sounds complete by itself, that is, it does not arouse the feeling that something else has to come (this is only true out of context of a song or piece of music because in such a context many other factors contribute to this expectancy).

The consonances are perfect, major 3rds, and major 6ths (also the soon to be discussed minor 3rd and minor 6th).

A dissonant interval gives a feeling of incompleteness, restlessness (even an outright unpleasant effect sometimes but not always), and a sense of urgency, a feeling that a consonant interval should follow.

The dissonances are the major 2nd, major 7th, and the following soon to be discussed intervals: minor 2nd, minor 7th, and all augmented and diminished intervals. DISSONANCE CREATES MOTION and INTEREST. The above labels are questionable, as you shall see.

Alternation of Major and Perfect Intervals

(1) If a major interval is made smaller by a half-step (by either lowering the top note or raising the bottom one) the interval is now called minor; the reverse is true, that is, a minor interval made larger by a half-step becomes a major.

Examples: Notice that the chromatic alteration necessary to make minor intervals must happen on the same
notes that are originally involved; like C to G♯ sounds the same as C to A♭, but for communication and musical notation purposes C to A♭ is a minor 6th and C to G♯ is what is called an augmented 5th.

(2) Any major or perfect interval made larger by half-step is called an augmented interval (like the C to G♯ mentioned above).

Examples:

The most common augmented intervals that you will encounter are the augmented 2nd, augmented 4th, augmented 5th, and augmented 6th.

(3) A minor or perfect interval made smaller by a half-step is called a diminished interval.

Example:

If the bottom note of any interval does not correspond to the root of any major scale (like A♯ for instance), then mentally remove the accidental (sharp or flat) and figure the interval without it, then add it back in and change accordingly.

Example:

There is no key of E♯, so mentally remove the sharp from the E, and you have a minor 6th (E to C), then adding the sharp back in, you get a diminished 6th.

Any interval larger than an octave is called a compound interval. They may be thought of as their smaller counterparts by subtracting seven from whatever the number is.

Example:

The intervals of the 9th, 11th, and 13th are commonly referred to as they stand, rather than their smaller counterparts, due to chord building principles to be covered later.

While these intervals can be thought of as the same, their effect is quite different as you will see as you analyze music more and more.

There will be times in your dealings with music when you will want to (or have to) be able to figure intervals from the top note down; the quickest way might be to relate to major scales once again. Example: Suppose you wanted to find out what interval is a perfect 4th below A; what you do is ask yourself “In what major scale is A a perfect 4th above the root?” The answer is E, that is, A is a perfect 4th above E, therefore E is a perfect 4th below A. Sometimes, you run into a hitch this way though. Example: Suppose you want to find the note a perfect 4th below E♯; well E♯ is not the 4th of any common major scale (one that doesn’t include double-sharps or double-flats) so an easier method might be to count down four tones from E (remove the sharp) including the E—this gives you B♯(E,D,C,B). So if
you know your major scales you say “E is the 4th of B; therefore E♯ would be the 4th of B♯; so the note a perfect 4th below E♯ is B♯. Sorry that all this is so complicated but it all gets easier with practice like almost everything else.

**Inverting Intervals**

This concept is related to the above material. An interval may be inverted by placing the lower note an octave higher or the upper note an octave lower. The results of interval inversions can be given as follows:

1. Perfect intervals remain perfect; major intervals become minor and minor become major; diminished intervals become augmented and augmented become diminished (examples soon to come).
2. The numerical sum of any interval and its inversion is nine.

**Examples:**

![Interval Inversion Diagram]

It is important to remember that inverted intervals do use the same notes as the original interval—the only difference is that they have shifted positions. Also notice that a compound interval can’t really be inverted, you just get the smaller counterpart as discussed above.

**Playing with 3rds and 6ths**

Major and minor 3rds and 6ths are classified as *imperfect consonances*. They add beauty in music (to most ears).

**Examples:**

![Musical Notes Diagram]

**RARE OCCURRENCES:**

Any diminished interval made smaller by a half-step is a doubly-diminished interval; any augmented interval made larger by a half-step is a doubly-augmented interval.
(1) Identify these intervals and play them, too. Try to learn to recognize the sounds of different types of intervals.

![Musical staff with intervals](image1)

Ask yourself if each above interval is consonant or dissonant—the whole issue is pretty controversial and interesting sometimes.

(2) With F as the lower tone, write the following intervals: perfect 4th, perfect 5th, minor 6th, major 7, augmented 5th, major 3rd, augmented 4th, perfect octave.

![Musical staff with intervals](image2)

(3) With A as the upper note, play and write the following intervals: major 2nd, minor 3rd, perfect 4th, augmented 4th, diminished 5th, augmented 5th, augmented 6th, diminished 7th.

![Musical staff with intervals](image3)

Make up similar exercises occasionally or often to help you really learn your intervals.

![Musical staff with intervals](image4)

Transcriber’s note: The following abbreviations have been used in the figures for the specific names of intervals:

- Perfect: P
- Major: M
- Minor: m
- Augmented: +
- Diminished: °

Transcribed by David Bishop
10/23/11
The interval is to music as the atom is to matter—the basic essence of the stuff. All music as we know it is composed of intervals, which in turn make up scales or melodies, which in turn make up chords, etc. An understanding and ability to use intervals can be very helpful in: 1. Improving the construction of chords. 2. Understanding why we are attracted by musical sounds the way we are. 3. Communicating with other musicians who use the universal language of intervals. You might have heard someone say something like: “Let’s move that whole thing up a minor 3rd,” or “I just got up, I’ll be nice to know what they are talking about.” 4. Composing quickly and consistently with new fresh ideas.

The word INTERVAL refers to the sound resulting when two tones are heard together. Another common definition is: An interval is the distance between two tones, measured by their difference in pitch. If two tones are sounded at the same time, but at different pitches, they are considered melodic intervals; when the tones are heard together as mentioned above, this is called a harmonic interval.

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There are at least three common properties of all intervals: 1. Its general name; 2. Its specific name; and 3. Its degree of what are known as consonance or dissonance. (more on this soon.) First, the general name is found by counting the letters of the musical alphabet involved (usually this is done from the bottom note up in harmonic intervals, except for special situations which will be covered later), in a melodic interval you first mentally join the two notes and analyze as if you were a harmonic interval.

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Notice that if shapes or flats are added to the above, the general names are still the same, only the specific name changes. The major, minor, and augmented intervals are the most common.

Looking at the first example, you will see that some method is necessary to be able to distinguish intervals that have flats and sharps from their unaltered counterparts; in other words, they are both 5ths, but how are we to refer to one without referring to the other? If we want to say: “It is like knowing that John, James, and Smith are all the same last name of Smith, and live in the same home, but suppose you want to refer in a conversation to just one of the three—that is why we give them specific names, so it is with intervals. We also give them specific names. One of the most common methods used in giving the specific names to intervals is by assuming that the bottom note in an interval is the root of a major scale. If the upper note is one of the notes of that major scale, the interval is called major. Unless it is an octave, 5th, 4th or unison (two of the same note) in which case the term perfect is used. Example: Key of C.

Perfect intervals are so called because they were the only intervals tolerated by the human ear in ancient days. All other intervals were considered harsh or unpleasant.
This seems pretty amazing to us now, that people couldn't tolerate 3rd and 6th intervals and others, but it is true and because of this they named their only usable intervals (unisons, 4ths, 5ths, and octaves) PERFECT. Well gradually, mankind's ears got more tolerant and they accepted the other listed intervals (which we now call MAJOR) and just a few others also (soon to come).

Playing with Perfect INTERVALS

Perfect intervals are the strongest intervals of all. Play the following example of all 5ths and notice the feeling of solidity, strength given off.

\[ \text{Example:} \]

Intervals are also classified by how consonant or dissonant they are. A consonant interval is one which sounds complete by itself, that is, it doesn't arouse the feeling that something else is to come. (This only true out of context of a good piece of music because in such a context many other factors contribute to the experience.)

The consonances are: Perfect 5ths, Perfect 4ths, and Major 3rds.

A dissonant interval gives a feeling of incompleteness, restlessness, even an outright unpleasant effect sometimes—but not always—and a sense of urgency, a feeling that a consonant interval should follow. The dissonances are: the major 2nd, major 7th, and the following soon to be discussed intervals minor 2nd, minor 7th, and all augmented and diminished intervals. DISONANCE CREATES MOTION, INTEREST. The above labels are qualitative, as you shall see.

Alteration of Major and Perfect Intervals

1. If a major interval is made smaller by a half step (by either lowering the top note or raising the bottom one), the interval is now called minor. The reverse is true that is a minor interval made larger by a half step becomes major. Example:

\[ \text{Example:} \]

Notice that the chromatic alteration, necessary to make minor intervals, must happen on the same notes that are originally involved, like C to G♯,

2. By the same as C to A♭ but for communication and musical notation purposes C to E♭ is a minor 6th and C to G♯ is what is called an augmented 5th.

3. Any major or perfect interval made larger by a half step is called an augmented interval (like the C to G♯ mentioned above). Examples:

The most common augmented intervals that you will encounter are the aug. 2nd, aug. 7th, aug. 5th, aug. 6th.

4. A minor or perfect interval made smaller by a half step is called a diminished interval. Example:

If the bottom note of any interval does not correspond to the root of any major scale (like F♯ for instance), then mentally remove the accidental (sharp or flat) and figure the interval without it, then add it back in and change accordingly. Example:

\[ \text{Example:} \]
Any interval larger than an octave is called a compound interval. They may be thought of as their smaller counterparts by subtracting 7 from whatever number is. Example:

The intervals of the 9th, 11th, and 13th are commonly referred to as they stand rather than their smaller counterparts, due to chord building principles to be covered later.

While these intervals can be thought of as the same, their effect is quite different as you will see as you analyze music more thoroughly. They will be times in your dealings with music when you will want to (or have to) be able to figure intervals from the top note down; the quickest way might be to relate to major scales once again. Example: Suppose you wanted to find out what interval is a perfect 4th below A. What do you do as you go down the major scale? It is a perfect 4th above the root, the answer is E, that is, A is a perfect 4th above E, therefore E is a perfect 4th below A. Sometimes, you run into a hitch this way though.

Example: Suppose you want to find the note a perfect 4th below E#. Well, it is not the 4th of any common major scale (one that doesn't include double sharps or flats) so an easier method might be to count down 4 tones from E (remove the sharp) including the E. This gives you B (E D C B).

So if you know your major scales you say: "C is the 4th of B", therefore E# would be the 4th of C, so the note a perfect 4th below E# is B#. So now, that all this is so complicated but it all gets easier with practice like almost everything else.

INVERTING INTERVALS

This concept is related to the above material. An interval may be inverted by placing the lower note an octave higher or the upper note an octave lower. The results of interval inversions can be given as follows:

1. Perfect intervals remain perfect.
2. Major intervals become minor.
3. Minor intervals become major.
4. Diminished intervals become augmented.
5. Augmented intervals become diminished.

(Examples soon to come)

The numerical sum of any interval and its inversion is 9. Example:

It is important to remember that inverted intervals do use the same notes as the original interval - the only difference is that they have shifted positions. Also notice that a compound interval can't really be inverted, you just get the smaller counterpart as discussed above.

Playing with 3rd & 6ths

Major & minor 3rds & 6ths are classified as imperfect consonances, they add beauty in music (to most ears). Examples:

RARER OCCURRENCES:

Any diminished interval made smaller by a step is a doubly diminished interval, any augmented interval made larger by a step is a doubly augmented interval.
IDENTIFY THESE INTERVALS:  Try to learn to recognize the sounds of different types of intervals.

Ask yourself if each above interval is consonant or dissonant—this whole issue is pretty controversial & interesting sometimes.

With F as the lower tone, write the following intervals: PERF. 4th, PERF. 5th, min 6th, maj 7, aug 5th, maj 3rd, aug 4th, perf octave

With A as the upper note, play & write the following intervals: maj 2nd, min 3rd, perf 4th, aug 4th, dim 5th, aug 5th, aug 6th, dim 7th

Make up similar exercises occasionally or often to help you really learn your intervals.