

Whether you're taking one small step or a giant leap, mastery of intervals will improve your playing and make it easier to learn songs—and write or improvise music of your own.

By Jon Chappell

# Jump into Intervals

**I**NTERVAL: just the word sounds intimidating. It has the air of some difficult exercise (in fact, athletes use something called *interval training* to get into shape).

But in music, an interval is simply the distance in pitch between any two notes. That sounds simple enough. But learning how to identify intervals by sight and by ear takes some practice.

The unit of measurement is the *step* (for example, A to B, or B $\flat$  to A $\flat$ ). Whether the distance in question is in a melody or harmony, the notes in any musical passage can be analyzed in interval terms, such as seconds, thirds,

fourths, sevenths, octaves and so on. Intervals can go higher (ascend) or lower (descend).

Intervals remain consistent in every key. For example, an interval of a *major 3rd* is two steps, whether you're in the key of C (C to E), A (A to C $\sharp$ ), or B $\flat$  (B $\flat$  to D). Because of this, once you learn to hear and play 3rds in C, you can use that skill to hear and play 3rds in A, B $\flat$ , D and so on. The same holds true for other intervals.

Smaller intervals are generally easier to hear and play, but large intervals can add drama to a piece of music. Most songs use a combination of the two.

## Techniques: Intervals

Interestingly, it's generally easier to play and sing ascending intervals than descending ones. But as a well-rounded musician, you need to be able to play or sing all varieties—small, large, ascending and descending—with equal facility.

### INTERVALS BY THE NUMBERS

One rule about intervals is that the distance between any two notes can't be zero, even if the notes are of the same pitch. For example, let's say you're playing a figure that includes two middle C's in a row: The interval between them is *one*, or *unison*. Therefore, the distance between C and D is a 2nd (even though D is only one step away from C). This may be a tricky concept at first, because it seems that between C and C there is no movement, pitch-wise. But you'll get the hang of it soon enough.

Beyond defining an interval by steps in letter names (A to A is a unison, A to B is a 2nd, A to C is a 3rd), each interval also has a *quality*. For example, C to E and C to E $\flat$  are both 3rds, but C to E is a *major* 3rd, while C to E $\flat$  is a *minor* 3rd (it's a half step smaller). Now here's the weird part: Some intervals are called *major* and *minor*. But others—unisons, 4ths, 5ths and octaves—are called *perfect* (we'll explain why in a moment). When a perfect interval is raised by a half step it's called *augmented*; when it's lowered, it's called *diminished*.

### THIRDS AND PERFECT INTERVALS

One of the sweetest sounding and most useful intervals is the 3rd. Thirds look nice when written on the page because they fall either all on the lines or all on the spaces, as shown in Ex. 1a. Try playing or singing the melody to "America (My Country, 'Tis of Thee)" in C, and then harmonize it in 3rds, as shown in Ex. 1b.

Melodically, 3rds work well, as in the opening verses of Norah Jones' "Don't Know Why." The descending 3rds in this case give a relaxed sound to the line, and the notes perfectly outline the jazzy B $\flat$ major 7th chord that provides the accompaniment (Ex. 2).

You can change a major interval like a 3rd into a minor interval and vice versa. Most musicians are familiar with the way major 3rds sound "bright" and minor 3rds sound "sad."

The differences between perfect and diminished intervals may be a little harder to pick out. Try this simple experiment: Simultaneously play middle C and the G above it. What kind of sound does that have? If you said "restful" or "hollow," you've got the right idea. Try the same with D and A above it, and move between the two interval pairs. They should sound similar.

Now play middle C and G $\flat$  (a diminished 5th). Then play D and A $\flat$  above it. What kind of sound is that? Words like "strange," "blue" and "clashing" come to mind.

The word "perfect" is used to describe certain intervals because early musicians thought there was something natural and correct about them. Deviations—going to diminished and augmented states—were to be avoided. In fact, at one time Europeans thought the diminished 5th was *diabolus in musica*—the devil in music! Diminished and augmented intervals are good for tension, conflict and horror-movie soundtracks, but we usually like to hear the music pay off by resolving into a

#### Example 1



The melody to "America," and then the same melody harmonized in 3rds.

#### Example 2



The first phrase in the verses to Norah Jones' "Don't Know Why" descends in 3rds, outlining the B $\flat$  major 7th chord.

#### Example 3



Three songs that all use the interval of an ascending octave to kick off their melodies.

perfect interval. Knowing the terminology isn't essential for understanding how intervals work. It's more important to learn what intervals sound like, so that you can hear them, play them and recognize them. Then you can focus on the names and rules. (See the sidebar "Half Measures.")

Some intervals go higher than an octave. The 9th, for example, is an octave plus a 2nd (e.g. E1 and F#2). Others include 10ths (octaves+3rds), 11ths (octaves+4ths) and 13ths (octaves+6ths).

### HOW TO LEARN INTERVALS

There are two important ways to learn intervals: by sight and by sound. You must first learn the names of intervals before you can hope to hear them, identify them, and sing or play them on your instrument. Theoretically, intervals go from unison (no change in pitch between two notes) to an infinitely large number (the entire range of your instrument, voice, or even human hearing).

But in most cases, you'll usually be dealing with intervals of less than an octave, with occasional jumps of more than an octave. And speaking of octaves, although they are quite large as intervals go, they are very common and useful jumps in music. The first two notes of "The Christmas Song (Chestnuts Roasting on an Open Fire)," "Over the Rainbow" and the synthesizer lick in Lazlo Bane's "Superman" (also known as the theme from *Scrubs*) all begin with an ascending octave, as shown in Ex. 3.

# Techniques: Intervals



Pianist McCoy Tyner is known for his unusual use of fourths.

## INTERVALS IN USAGE

One of the cool things about understanding intervals is that once you recognize them, you can hear how similar intervals appear in a lot of the songs you're learning. Not only does this make it easier to figure out the song by ear, it allows you to apply to many situations a technique you've already learned—for example, the ability to jump in octaves.

Consider two examples from very different types of music that use intervals in almost the same way. In Ciara's "Goodies," the singer relies on unisons, but then jumps up a perfect 5th on the words "gotta have it" for emphasis (Ex. 4).

In almost the same way, but in a totally different feel, see how Hinder uses unisons and a leap of a 5th in their hit song "Lips of an Angel" (Ex. 5).

## FAMILIAR YET TOUGH

"The Star-Spangled Banner" may be a familiar tune, but it's also unusual because it contains a *lot* of wide intervals. In fact, the first seven notes are all jumps; there's not a stepwise motion among them. Later, there's a really difficult jump—a descending minor 6th—from the word "dawn's" to the first syllable of "early." Exercise 6 offers up a test of your ability to hear these intervals. The first line gives you the complete melody, starting on F. Next, try playing it by ear, starting on A $\flat$ , C and B. It's pretty challenging! Understanding intervals is important if you're trying to transpose music into a different key.

Even though it has some treacherous intervals, "The Star-Spangled Banner" is not totally impossible because it's almost all diatonic, which means that its notes stay within a key. The most difficult intervals to hear are the ones that occur *atonally*—without context to any key. For example, the passage in Ex. 7 is what you might find in modern jazz or atonal classical music—and it takes a lot of training in sight singing to execute passages like this successfully.

With pure interval playing, you have to know the sounds of all the intervals in isolation, or else you won't really know if you're playing or singing them correctly. And this is how music conservatories and college music programs teach intervals—by

### Example 4



I'm not be-ing too dram-a-tic. It's just how I got-ta have it.

Ciara sings unison F's until she jumps up a 5th to C, highlighting the important phrase "gotta have it."

### Example 5



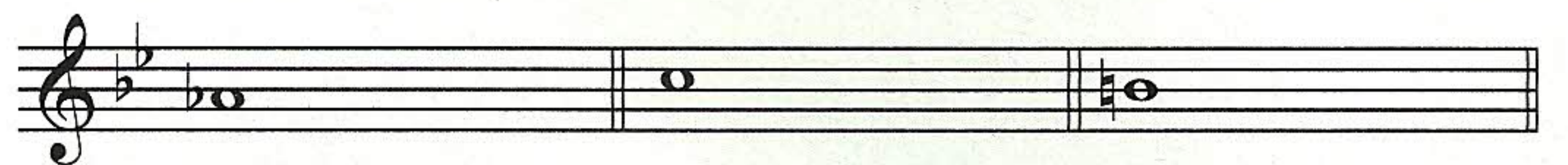
It's real-ly good to hear your voicesay-ing my name, it sounds so sweet. Com-ing from the lips of an ang-el, it makes me weak.

The leap of an ascending 5th allows the singer in Hinder to punch the word "hear" and "lips."

### Example 6



Oh, say, can you see by the dawn's ear-ly light,



Oh, Oh, Oh,

"The Star-Spangled Banner," here in B $\flat$ , features some tricky intervals. Try playing the song starting on the notes A $\flat$ , C and B.

### Example 7



Atonal intervals, or intervals without the context of a key, are the hardest to hear.

making you sight sing and transcribe lots of weird intervals! But with a combination of ear training, singing and physical practice with your instrument, you'll learn to how to recognize intervals and reach for them automatically. **T**

## Half Measures

If someone says play a note (and you do), and then says, "Now play a perfect 5th above that," would you know what to do? If you're not sure, you can always count half steps. The half step method for solving intervals is the equivalent of counting on your fingers in arithmetic: It's crude, but you can't go wrong. If you're not sure if an interval is a diminished 4th, augmented 3rd, or minor 2nd, you can always count up in half steps this way:

INTERVAL	DISTANCE IN HALF STEPS	DISTANCE IN STEPS	EXAMPLE IN C
Minor Second	1	1/2	C-Db
Major Second	2	1	C-D
Minor Third	3	1 1/2	C-Eb
Major Third	4	2	C-E
Perfect Fourth	5	2 1/2	C-F
Augmented Fourth/ Diminished Fifth	6	3	C-F# / C-Gb
Perfect Fifth	7	3 1/2	C-G
Minor Sixth	8	4	C-Ab
Major Sixth	9	4 1/2	C-A
Minor Seventh	10	5	C-Bb
Major Seventh	11	5 1/2	C-B
Octave	12	6	C-C