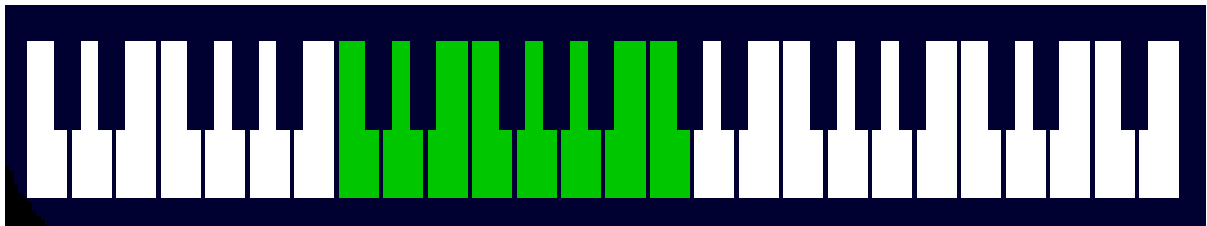


## Old Time Banjo / Appendix 2 Learning about Scales & Modes

Much of the music traditionally played in old-time banjo styles is typically minor sounding, or what is often called "modal", in character. To me that is part of its beauty and attractiveness. It is that lonesome, airy, ancient sounding quality that often strikes our heart's chords in a certain way and evokes certain feelings and emotions we do not usually hear.

An understanding of the structure of the scales and modes used in this type of music, and the underlying music theory, is important only in an academic sense though. It is certainly not needed in order to enjoy listening to and playing the music. On the other hand, this knowledge *can* help you appreciate and go deeper into the source and basis of where the music is coming from. If you enjoy theory or are at all interested in better understanding just what a scale or mode is, then read on...

-----



### ...First some basic definitions

**Notes** – Notes, of course, are the building blocks of music. In Western music there are only 12 different notes: A B $\flat$  B C C $\sharp$  D E $\flat$  E F F $\sharp$  G G $\sharp$ , and back to A. The space between each note is called an **interval** or **step**. The interval between each note is said to be one-half step. (On the banjo each fret equals one-half step too).

For example, the interval between C and C $\sharp$  is one-half step, and the interval between G and A is one whole step. But note there are no sharps or flats between B and C, or between E and F. The interval between B and C, and also between E and F, is “naturally” one-half step already. So, there is no such note as a B $\sharp$  (which would equal one-half step above B, or C), or a C $\flat$ , or an E $\sharp$  or an F $\flat$ . (Also, note that for discussion purposes here, an A $\sharp$  is the same as a B $\flat$ , F $\sharp$  the same as a G $\flat$ , and so on for all the other notes).

**Scale** - A scale is simply a series, or progression, of notes. Typically, a scale has seven notes, also called **degrees**, and then ends on the eighth note the same note as where it began, only an **octave** higher.

For example, this is a scale: C D E F G A B **C**, as is this: G A B $\flat$  C D E $\flat$  F **G**. There are many hundreds of scales used in music throughout the world.

**Key** – The key is simply the starting or **root** note of the scale, and typically where a piece of music will start, or at least end. It is the most important note of the scale. When counting the notes of the scale it is said to be the first step.

For example, this is a scale in the key of A: A B C $\sharp$  D E F $\sharp$  G $\sharp$  A.

**Mode** – Depending on the note the scale starts on, and the succeeding notes in the scale, the intervals or spaces between all the notes in the scale will vary. Thus, a mode is defined by the structure or relationship of the note intervals within a scale. Depending on how these intervals are laid out between the notes of the scale, in other words where they occur in the scale progression, the feeling and emotion of the mode will vary greatly.

For example, this is a “major” sounding mode: D E F $\sharp$  G A B C $\sharp$  D, and this is a “minor” sounding mode: D E F G A B $\flat$  C D. Again, it is the varying intervals between the notes in the scale progression that give each mode its unique character and flavor. Although both these scales are in the key of D, each mode sounds very different and evokes very different feelings.

-----

## A la Modes

The Major Scale: First off let's look at the intervals between the notes of the "major" sounding mode. If you play all the white keys of a piano from C to C you get: C D E F G A B C. Remember that there is a whole step interval between C to D, and D to E – but from E to F it is one-half step. Likewise, between F to G, G to A, and A to B it is one whole step – but from B to C it is one-half step again.

If we diagram the intervals between these notes, it looks like this:

|           |   |   |   |   |   |     |   |   |   |   |   |   |   |     |            |
|-----------|---|---|---|---|---|-----|---|---|---|---|---|---|---|-----|------------|
| Degree:   | 1 | - | 2 | - | 3 | -   | 4 | - | 5 | - | 6 | - | 7 | -   | 8 (Octave) |
| Note:     | C | - | D | - | E | -   | F | - | G | - | A | - | B | -   | C          |
| Interval: | - | 1 | - | 1 | - | 1/2 | - | 1 | - | 1 | - | 1 | - | 1/2 | -          |

What we have here is the Major scale or, as it was known in Greek music, the Ionian mode. In the case of this Major scale there is a half-step interval between the 3<sup>rd</sup> and 4<sup>th</sup> notes (E and F) and again between the 7<sup>th</sup> and 8<sup>th</sup> notes (B and C) of the scale. This is what makes a Major scale sound "major".

This Major scale is in the key of C, but could just as well be in *any* key – as long as we stay true to this same pattern of intervals in the scale progression. In order to stay true to this same pattern of intervals (remember, an interval is the space between the notes) we use the sharps and flats of the notes, also called the **accidentals**. So, for a G Major scale we get this:

|           |   |   |   |   |   |     |   |   |   |   |   |   |    |     |            |
|-----------|---|---|---|---|---|-----|---|---|---|---|---|---|----|-----|------------|
| Degree:   | 1 | - | 2 | - | 3 | -   | 4 | - | 5 | - | 6 | - | 7  | -   | 8 (Octave) |
| Note:     | G | - | A | - | B | -   | C | - | D | - | E | - | F# | -   | G          |
| Interval: | - | 1 | - | 1 | - | 1/2 | - | 1 | - | 1 | - | 1 | -  | 1/2 | -          |

Remember, the F had to be made sharp (F#) in order to stay true to the Major scale which has a one-half step interval between the 7<sup>th</sup> and 8<sup>th</sup> notes. There is also a half step between the 3<sup>rd</sup> and 4<sup>th</sup> degrees of the scale, but because the interval from B to C is already naturally a half step we did not have to use any sharps or flats to get it to fit the pattern. Slick, huh?

Let's look at the Major scale once more in another key, this time D.

|           |   |   |   |   |    |     |   |   |   |   |   |   |    |     |            |
|-----------|---|---|---|---|----|-----|---|---|---|---|---|---|----|-----|------------|
| Degree:   | 1 | - | 2 | - | 3  | -   | 4 | - | 5 | - | 6 | - | 7  | -   | 8 (Octave) |
| Note:     | D | - | E | - | F# | -   | G | - | A | - | B | - | C# | -   | D          |
| Interval: | - | 1 | - | 1 | -  | 1/2 | - | 1 | - | 1 | - | 1 | -  | 1/2 | -          |

Here we had to use two sharps to get the half steps to appear in the right places in the Major scale.

The Minor scale: Back to the piano. Now let's play all the white keys again, but this time go from A to A, instead of C to C. This gives us a scale with the notes: A B C D E F G A. Let's diagram this scale out and see how the intervals are laid out, in other words where the whole and half step spaces occur in the progression.

|           |   |   |   |     |   |   |   |   |   |     |   |   |   |   |            |
|-----------|---|---|---|-----|---|---|---|---|---|-----|---|---|---|---|------------|
| Degree:   | 1 | - | 2 | -   | 3 | - | 4 | - | 5 | -   | 6 | - | 7 | - | 8 (Octave) |
| Note:     | A | - | B | -   | C | - | D | - | E | -   | F | - | G | - | A          |
| Interval: | - | 1 | - | 1/2 | - | 1 | - | 1 | - | 1/2 | - | 1 | - | 1 | -          |

This time there are half-steps between the 2<sup>nd</sup> and 3<sup>rd</sup>, and also between the 5<sup>th</sup> and 6<sup>th</sup> degrees of the scale. Another way to say this is that the third and sixth steps of the scale are flat-ed. This is traditionally called the Minor scale, or to use the Greek term, the Aeolian mode.

If you've been paying attention you might notice that these are the exact same notes that were used in the C Major scale we looked at on the previous page. So what's the difference? They're just arranged differently so they start and end on a different note, the A, instead of the C, that's all. Doing this though makes a very big difference by putting the note intervals in different places in the scale progression and gives the mode its special feeling and character.

For another example, here's the Minor scale in the key of G:

|           |   |   |   |     |    |   |   |   |   |     |    |   |   |   |            |
|-----------|---|---|---|-----|----|---|---|---|---|-----|----|---|---|---|------------|
| Degree:   | 1 | - | 2 | -   | 3  | - | 4 | - | 5 | -   | 6  | - | 7 | - | 8 (Octave) |
| Note:     | G | - | A | -   | Bb | - | C | - | D | -   | Eb | - | F | - | G          |
| Interval: | - | 1 | - | 1/2 | -  | 1 | - | 1 | - | 1/2 | -  | 1 | - | 1 | -          |

For this G Minor scale we had to flat the 3<sup>rd</sup> step to a Bb, and also flat the 6<sup>th</sup> degree to an Eb to make this a Minor scale.

The rest of the modes: Well, as you can begin to see, we can start off a completely different scale and mode with any of the other notes as well.

For example, if we start off a scale by playing all the white keys of a piano again, only this time starting from D and going back to D, we get: D E F G A B C D.

|           |   |   |   |     |   |   |   |   |   |   |   |     |   |   |            |
|-----------|---|---|---|-----|---|---|---|---|---|---|---|-----|---|---|------------|
| Degree:   | 1 | - | 2 | -   | 3 | - | 4 | - | 5 | - | 6 | -   | 7 | - | 8 (Octave) |
| Note:     | D | - | E | -   | F | - | G | - | A | - | B | -   | C | - | D          |
| Interval: | - | 1 | - | 1/2 | - | 1 | - | 1 | - | 1 | - | 1/2 | - | 1 | -          |

This scale is in what is called the Dorian mode, with a flatted third and a flatted seventh. Although this mode is not one you usually hear in everyday music, many old-time fiddle and banjo tunes are set in this beautiful airy sounding mode. The Dorian mode scale in the key of A would be: A B C D E F# G A.

Another common mode, at least in Appalachian music as well as traditional Irish and other ethnic cultures is the Mixolydian mode. If we play the white keys of a piano starting and ending on G we can see the progression of this scale.

|           |   |   |   |   |   |     |   |   |   |   |   |     |   |   |            |
|-----------|---|---|---|---|---|-----|---|---|---|---|---|-----|---|---|------------|
| Degree:   | 1 | - | 2 | - | 3 | -   | 4 | - | 5 | - | 6 | -   | 7 | - | 8 (Octave) |
| Note:     | G | - | A | - | B | -   | C | - | D | - | E | -   | F | - | G          |
| Interval: | - | 1 | - | 1 | - | 1/2 | - | 1 | - | 1 | - | 1/2 | - | 1 | -          |

Here, the flatted degrees are at the fourth and the seventh steps of the scale. A Mixolydian scale in the key of D would thus be: D E F# G A B C D.

Here's the rest of the seven basic Greek modes, based on the white keys of the piano (also called the "whole" notes), which are rarely if ever used these days, or in this type of music, though they are somewhat more common in other world culture's music.

The Phrygian mode: E F G A B C D E, with the interval pattern 1/2-1-1-1-1/2-1-1.

The Lydian mode: F G A B C D E F, with the interval pattern 1-1-1-1/2-1-1-1/2.

The Locrian mode: B C D E F G A B, with the interval pattern 1/2-1-1-1/2-1-1-1.

Remember, by keeping to the same pattern of intervals (the mode) in the progression of the scale, but starting at a different root note, you can play any of these modes in any key!