chapter 5: getting comfortable with fingering

How Does the Whistle Produce Tone?

When a musical instrument produces a tone, it does so by setting the surrounding air into motion. Some part of the instrument system vibrates and transfers that vibration to the air. With a fiddle, the wooden soundboard vibrates to set the air into motion. With a bodhrán, the vibration of the goatskin drumhead excites the air. With an accordion, it's the metal reeds hidden inside the instrument.

With tin whistles, however, it is not a part of the instrument itself that causes the surrounding air to vibrate. When you play the whistle you set the *column of air* inside the instrument into vibration, which in turn sets the surrounding air into motion. Tin whistles are essentially containers for the vibrating body that produces tone: an air column.

So, you could say that when you play the whistle, you are playing a column of air. More accurately, your mouth and lungs and the blade are setting the air column into vibration, and your fingers are simply changing the length of that air column. The air column starts at the mouthpiece and extends down the whistle until it encounters an open finger hole. As far as the air column is concerned, the whistle ends at the first open finger hole.

The Finger Holes and the Whistle's Natural Scale

With all finger holes closed, the air column is as long as it can be, and it vibrates to produce the whistle's lowest note: D. As you uncover the holes one at a time, starting with B3 and progressing upward toward the mouthpiece, the vibrating air column becomes shorter and shorter and produces higher and higher pitches: E, F-sharp, G, A, B, and C-sharp. These ascending pitches, starting with low D, form the D major scale, or the D Ionian mode.

This is the *natural scale* of the tin whistle, the pitches produced beginning with the air column at maximum length (all holes sealed), and becoming shortened progressively, one increment, or finger hole, at a time. The Ionian mode is the whistle's natural scale only because of the particular positioning and sizing of the finger holes. Another arrangement of hole positions and/or sizes would yield a different scale.

The whistle's arrangement of finger holes corresponds roughly to the arrangement of the white keys of a piano, or the string scheme of an Irish harp, or closer yet, to the frets of an Appalachian dulcimer. These are all ingenious systems for producing a series of discrete, predetermined pitches. But the whistle's finger hole method seems to be the oldest, dating back at least to Neanderthal times.

I find it quite amazing how quickly the air column responds to the covering and uncovering of the finger holes. In effect, it responds instantaneously.

Completely Sealing the Holes

The success of tin whistle fingering depends upon the total, air-tight sealing of the holes by the fingers. When one of your fingers is not *completely* sealing its hole, you will get an unintended sound. The nature of that sound depends upon which hole or holes are not well sealed and which other holes are covered or uncovered at the moment. You may get an unstable, weak, unmusical sound, or perhaps a stable pitch of some description – but not the one you were intending to play.

With experience, your ability to completely seal the holes will become second nature, but nearly all beginners have some trouble with this. It takes time to develop the ability to move individual fingers without changing the positions of others. In the beginning, it is almost certain that placing a finger or group of fingers on their holes will at times cause another finger to inadvertently move slightly off its hole, resulting in an air leak. Even the tiniest of air leaks can cause a problem.

The challenge of moving only *one* finger at a time and reliably sealing its hole is not terribly daunting. However, moving a *group* of fingers in synchronized unison is a bit trickier. Making numerous such movements in sequence is trickier still, at least in the early stage of learning. In time, all of this becomes easy.

Moving Groups of Fingers in Precise Coordination and Synchronization

We coordinate the movement of groups and combinations of fingers in many day-to-day tasks: making a fist, grasping a rope, picking up a cup, typing on a keyboard. But I can't think of any common day-to-day task that requires near-perfect synchronization of our finger movements. Since we don't normally need such skills, we tend to not develop them.

But playing well on the whistle (and most other musical instruments) does demand precise coordination and synchronization of finger movements.

In lifting or putting down a group of fingers, when one or more of the group moves out of synch with the others, you will produce one or more brief unwanted notes. If you are listening attentively, you will hear them. Pay attention to these stray notes – they will show you where you need to improve your fingering technique.

If you are an adult beginner, and especially if you have never played a musical instrument before, you may feel foolish or inept when you come up against such fingering challenges. After all, you may think, what could be simpler than moving a couple of fingers? But don't feel foolish or call yourself uncoordinated. This is simply a new situation that calls for new skills. The physical skills needed for handwriting are quite complex and sophisticated, and it took us all quite a while to learn them. Most of us were young children then, and we didn't expect ourselves to be competent in all things. Be easy on yourself.

To the uninitiated, playing the whistle looks easy. Many think, "It is such a simple instrument, almost a toy. And it's inexpensive, so it can't be *that* hard to play." Since some whistles do look like a child's toy, when we find that in fact it is actually not so easy to play, we may feel all the more foolish. You might wonder, "Is there something wrong with me?" But don't give in to such thinking. The tin whistle is a musical instrument, as valid as any other. Learning to play any instrument well is challenging, no matter what your age.

Naming the Notes

Clearly, you don't need to be able to read music to be a fine tin whistle player. But even if you never intend to read music, it is very helpful, useful, and important to learn and memorize the commonly accepted names of the notes you play, and to learn to *automatically* link those names to the fingerings of the notes.

This is beneficial for two reasons. First, it will help you to "think music" more clearly and learn tunes more readily, and second, it will greatly enhance your communication with other musicians.

Let's consider the first of these reasons a bit further.

It is simpler and less cumbersome to think of a note as "G" rather than "that note I get when I cover only the top three holes of the whistle." In a similar way it helps to think of "the color of the sky when it is daylight and it is not overcast" as "sky blue." Simple names, standing for relatively involved ideas such as colors, numbers, musical pitches, or tin whistle fingerings, allow for a kind of mental shorthand. They allow us to think more efficiently.

In the western world, the commonly accepted system for naming consecutive ascending pitches uses the first seven letters of the alphabet – ABCDEFG. These are not just arbitrary names, but a pattern of names that we already know extremely well, having learned the alphabet as young children.

Using this convention, we can deduce certain things about sequences of ascending notes almost without thought. For example, we deduce that the note B is higher than the note A, since B comes later in the alphabet that A, and more specifically that B is higher than A by one step of the scale, since B follows *immediately* after A in the alphabet. Similarly we know that the pitch C is two steps higher in the scale than A, since the letter C comes two steps later in the alphabet than A. We deduce such things so automatically because we have already thoroughly memorized the names and sequence of the letters of the alphabet.

How would the absence of note names affect musical thinking? It's hard for me to know exactly, but I believe it would prevent the development of a certain clarity and rapidity of musical thought. It seems to me that once you simply and instantly know that F-sharp is the note produced by covering holes with T1, T2, T3, and B1, leaving the B2 and B3 holes open, your mental process is greatly simplified. Instead of thinking of, or visualizing, six objects (the finger holes) and two states (covered or uncovered), you just command yourself to "play F-sharp" and your fingers automatically go where they need to go. (The register of the F-sharp, whether high or low, is determined by air control, not by fingering.)

If tin whistles (of the same size and pitch) were the only instruments in existence, it would make sense to name the whistle's lowest note for the first letter of the alphabet. But since there are a wide variety of instruments in the world, and they are designed in so many different ways in relation to pitch, it makes sense to subscribe to the common naming standard that applies to all instruments and voices in the western world. It just so happens that the note western musicians have agreed to call "A" is not the lowest note of the D tin whistle. The lowest note of the D tin whistle is, of course, what we have agreed to call "D."

Some Good News

Using these letter names and the two words that modify them – "sharp" and "flat" – makes clear something else that might not otherwise be readily apparent: the tunes we play actually use only a small number of pitches, usually about seven. Sequences of these pitches combine in many wonderful and complex patterns, but the palette of pitch "ingredients" in the music is fairly small, and therefore quite manageable.

Each pitch can occur in both the low and high register of the whistle. These low and high instances of a pitch share the same name *and,* almost always, the same fingering. These things help reinforce the fact that "low G" and "high G" are simply different forms, or registers, of the pitch "G", one octave apart from each other.

Whistle players are very fortunate that the high and low register of each pitch share the same fingering. With many instruments such direct fingering correlations do not occur. For example, on the fiddle, low D is played on the open D string (i.e. with no fingers depressing the string), while the D one octave higher is played on the A string with three fingers depressing the string.

We are also lucky that there is only one fingering for almost every note. With many instruments, especially string instruments, there may be several alternate fingerings for any given note.

To Use This Book Well, You Will Need to Memorize the Names of the Notes

One of the most important reasons for memorizing the names of the notes is to facilitate communication among musicians. That goes for communication between you and me, too. You will have to memorize these names to make full use of this book, because I refer to notes by letter name, not with such phrases as "the note you get when only T1, T2, T3, and B1 cover their holes."

A Fingering Chart

Referring to a fingering chart can help you visualize and memorize the relationships between notes, their fingerings, and their names.

You will find a fingering chart for the tin whistle in D in Appendix A, pp. 180-181. The first page of the chart is for the low register of the whistle, the second page for the high register. You will find information about the chart and its symbols in the caption on the first page of the chart.

17 Finger Coordination Exercises

The ability to move various combinations of fingers in precise coordination and synchronization is essential for good whistle playing, and not just combinations of fingers of only one hand or the other, but often fingers of both hands. If you are a beginner, gaining these skills may seem daunting to you, but I assure you, in time and with practice such dexterity will become second nature.

I have devised 17 exercises for developing finger coordination, but due to space limitations, am not able to include them in this book. However, the music notation for these exercises is available online at <www.greylarsen.com/extras/toolbox>, along with thorough explanatory text and sound recordings of each exercise.

Economy of Motion

When moving from one note to a different one that requires you to cover a larger number of holes, do *not* lift any fingers that you don't *have* to lift. For example, when moving from low G (T1, T2, and T3 covering their holes) to low E (T1, T2, T3, B1, and B2 covering their holes), do not lift and replace T1, T2, and T3. Those three holes need to be covered for both fingerings, so just leave them covered. Simply put down B1 and B2.

This is a perfect example of a vital principle that we should apply when playing any instrument: *economy of motion.* Playing is challenging enough. It makes no sense to create unnecessary work for ourselves.

When we are beginners, there are so many things to attend to that it may be hard to sense opportunities to apply this principle, or even the reasons for applying it. When you become a more advanced player and want to play with agility and speed, the reasons for practicing economy of motion will be eminently clear. If you attend to economy of motion now, as best you can and whenever you can, you will be very grateful later on. Undoing unwanted habits takes much more work than establishing good ones in the first place.

Fingering Low C-Natural

There are two approaches to fingering low C-natural: by using a *cross-fingering* and by *half-holing.* A "cross-fingering" is a fingering in which there is an open hole above one or more closed holes ("above" meaning closer to the mouthpiece). "Half-holing" refers to the practice of only partially covering a tone hole in order to play a pitch that is in between the pitches produced by fully covering the tone hole in question and fully uncovering that same hole.

For the easiest low C-natural cross-fingering, cover holes only with T2 and T3, leaving all other holes open. This fingering works well with well-made whistles, but with many inexpensive mass-produced whistles, it unfortunately yields a C-natural that is too sharp. In such a case, one or more fingers must be added to bring the pitch down. (See the alternate cross-fingerings for low C-natural shown in the fingering chart on p. 180.)

The cross-fingering for low C-natural is more versatile that the half-hole fingering, and it should be your default choice. However, the half-hole fingering (played by only partly covering T1, with all other holes open) can be quite wonderful and evocative in many situations. (High C-natural is generally played using the half-hole fingering just mentioned.) I'll address the use of the half-hole fingering for C-natural in Chapter 9.

Fingering High D

The lowest note of the high register is high D, one octave higher than the lowest note of the whistle, low D. There are two fingerings one can use for high D. One is the same as the fingering for low D. The other is also the same, except that you uncover, or "vent", the T1 hole (see the fingering chart). This, too, is a cross-fingering, since there is an open hole above the closed holes.

I generally prefer the latter, vented cross-fingering for high D. I find that it makes the note "pop out" more readily and sound more clear. But often it is more convenient to not vent the D. Sometimes, when high D is preceded or followed by a fingering in which T1 is closed, economy of motion suggests that you not vent the D (i.e. leave T1 down). However, if you favor the sound of the vented D, you may choose to disregard the more economical fingering and opt instead for the sound you prefer.

The D Mixolydian Mode

If you change the C-sharp of the whistle's natural scale, the D Ionian mode, to a C-natural, the mode becomes the D Mixolydian mode. There are hundreds of wonderful tunes in this mode.

In the following figure I provide the name of each note, below the musical staff. Low register notes are labeled with capital letters (A, B, C, etc.), and upper register notes with small letters (a, b, c, etc.). This is consistent with the conventions of "abc notation," a music notation system in common use on the internet as of this writing.

Also, a number appears above each note. This number shows how many fingers must move in order to advance to that note from the preceding one.

Play the notes of this mode, as shown in Figure 5-1.

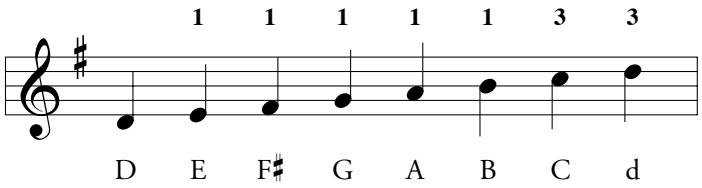

Figure 5-1: The D Mixolydian mode.

 *Track 7*

Note that the last note, high D, is represented by the small letter "d," since it is in the high register.

The finger movements indicated by the numbers above these notes assume two things (which may not be the case for you): that you are using the T2, T3 cross-fingering for C-natural, and that you are venting the high D. Here is a situation where it is easier to vent the D than not. If you did not vent the D, you would have to move four fingers to get to high D instead of three, since the note that precedes high D is a cross-fingered C (T1 open). Economy of motion suggests that you vent the D.

Opposing Finger Movement

Very often you will need to move two or more fingers at the same time *but in opposite directions.* Changing from a "natural" fingering to a cross-fingering, and vice versa, sometimes creates this situation. Again, it is not common in everyday life that we need to move fingers in opposite directions with precise synchronization, so many people have not developed such skills. The 17 exercises available at <www.greylarsen.com/extras/toolbox> thoroughly address the practicing of opposing finger movement.