



Woodworkers of Central New York, Inc.

Whistles for Kids and Train Whistles

Demonstration by Chad Dawson – February 8, 2022

Whistles are made up of three elements: a windway hole drilled in wood, a window cut partially into the windway, and a piece of dowel or fipple that partially closes the end of the windway hole. Variations in the diameter and depth of the windway hole and shape and placement of the fipple changes the sound of the whistle.

Simple Whistle: Start with a rectangular piece of wood about 1" square by 5" or 6" in length. Drill a $\frac{3}{8}$ " or $\frac{1}{2}$ " windway hole down the wood piece on a drill press to a depth of 3" to 5". Use a clamp stand on the drill press so that the drill hole is parallel to the length of the wood piece or drill it on your lathe like it was a large pen blank.

Using a scrap block of hardwood, turn a jam chuck with a very slightly tapered tenon that fits inside the windway and drives the workpiece between centers. Use light pressure on the tail stock so you do not split the workpiece.

Turn the workpiece to your desired design. With the workpiece between centers, mark a line $\frac{5}{8}$ " to $\frac{3}{4}$ " from the end and cut with a handsaw 90 degrees into the workpiece to a depth that is $\frac{1}{3}$ of the way into the windway. Cut a second hand cut line (about 60 degrees toward the open end of the windway) so that it intersects the first cut line and creates the open window into the windway. Finish turning the tailstock end of the piece until only a small tenon remains that will be cut off when removed from the lathe. Sand the window openings and the entire workpiece and take off the lathe. Finish the tailstock end of the whistle.

Cut about a 1.5" length of dowel that is the same diameter as your windway hole and flatten off about $\frac{1}{4}$ of the diameter on a sheet of sander paper or sander. The fipple must be flat on one side with a 90-degree hard and cleanly cut end. Slide the fipple into the open end of the windway until it is near the open window. Test the sound by blowing into the whistle and adjusting the placement of the fipple and amount of flattening on the dowel until a pleasing sound is produced. Mark the fipple with a pencil where it sticks out of the windway and then apply a small amount of glue and reinsert to the marked line. When the glue is set, hand cut off the end of the fipple and shape and sand the end of the whistle to a comfortable shape.

Reference: "Fun and Easy Whistle" by Beth Ireland (*American Woodturner*, December 2015).

Train Whistle:

Start with a $2\frac{1}{2}$ " square by 6" or 7" long hardwood block. Carefully layout and drill 4 vertical holes on your drill press that are evenly spaced with at least $\frac{1}{8}$ " of wall thickness between each other and the outer wall of the workpiece when turned. Start the layout from a center point and scribe a circle to find the centers for the four holes. Drill holes for a $\frac{5}{8}$ " diameter windway to depths of $2\frac{3}{4}$ ", $3\frac{1}{2}$ ", $4\frac{1}{4}$ " and 5". Alternately, drill holes for a $\frac{1}{2}$ " diameter windway to depths of $2\frac{7}{8}$ ", $3\frac{5}{8}$ ", $4\frac{3}{8}$ " and $5\frac{1}{4}$ ".

Put the workpiece between centers using a 1" safety drive and turn it down to a $2\frac{1}{4}$ " cylinder (for $\frac{5}{8}$ " windway). Cut a $\frac{3}{16}$ " deep and $\frac{3}{16}$ " long tenon on the drive end of the workpiece to hold it in the chuck to finish the end of the workpiece and later to receive a windway dome cover that will allow all four whistles to be blown at the same time.

Put the workpiece in a chuck using the tenon. Next mark lines at $\frac{3}{4}$ " and $1\frac{1}{2}$ " from the top of the workpiece. Turn away the material between those two lines to create a window that is 90-degree cut on the left side and tapers to the surface at the right side. The depth of the cut is meant to expose about $\frac{1}{3}$ of the diameter of the windway hole. All four window holes should be about equal in size and shape, if the holes were equally spaced when drilled. Pull the tail stock out of the way and finish the end of the workpiece. Sand the finished piece and take off the lathe.

Start with a $2\frac{1}{2}$ " square by 4" long hardwood block. Put the workpiece between centers using a 1" safety drive and turn it down to a $2\frac{1}{4}$ " cylinder. Drill through the piece end-to-end with the same drill bit used to drill the four holes in the main workpiece ($\frac{1}{2}$ " or $\frac{5}{8}$ "). Put a $\frac{1}{2}$ " tenon on one end and place the workpiece in a chuck without a tailstock. Cut an inset in the tailstock end of piece so that it will fit over the tenon on the main body and form a cover. Hollow out the inside of the piece to create a dome inside. Test fit the main body to the inset in this mouth piece cover to make sure tenon on the body fits snugly. Then turn the mouth piece around so that the chuck holds this piece on the inset created. Turn the cover to a taper around the drilled hole to a size and shape to a comfortable fit to use as a mouth piece hole to blow the four-part whistle. Sand and remove from the lathe.

Create four fipples and test and fit them each individually as described above for a simple whistle. Place the domed cover onto the main body and test all four whistles together by blowing hard and short bursts of air to create the train whistle sound. Glue the mouth piece cover to the main body and sand together and finish.

