

DIY: Yarn Bow String Silencers



Do you get a feeling of satisfaction from making things with your own two hands? If so, you might be a DIYer or do-it-yourselfer. A lot of times, DIY projects can be done with common household items.

The archery discipline affords an opportunity for a DIY project: making string silencers. No archer likes a noisy bow, as it can be a distraction in target archery. And if you're a hunter, a noisy bow can keep you from being stealthy enough to release the string on an animal.

You may wonder, "What makes a bow make noise in the first place?"

The bow is an amazing invention that requires little effort for a big payoff. In other words, physically, the bow is doing more work than the person behind it. A strung bow sits in a state of stored energy. The bow string is compressing the limbs and causing them to have a source of "force in waiting." When you place an arrow on the

string, you use the strength in your arms and back to draw back on the string. When you release the string, the energy that is in the bow is transferred to the arrow.

By the way, *never* pull a bow back without an arrow being connected to the string! A drawn bow that is released without a source for this energy to go into (an arrow) will return the energy back into the limbs, which it is not designed to do. This unsafe event is called "dry firing," and it severely stresses the structural integrity of the bow. Dry firing can damage and, in some cases, break the bow.

So, why does the bow make noise? When you release the string, vibration travels throughout the bow and string, which makes a sound. There are many different methods to reduce vibration in the bow frame (riser and limbs) as well as the string itself. This publication outlines a DIY loom method of reducing the amount of string vibration with string silencers.

Loom Assembly

Materials

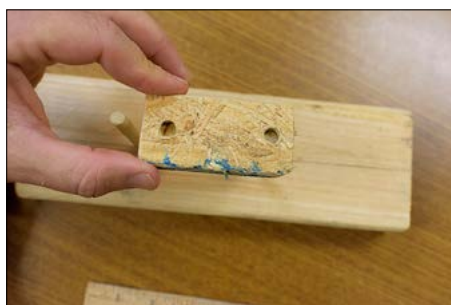
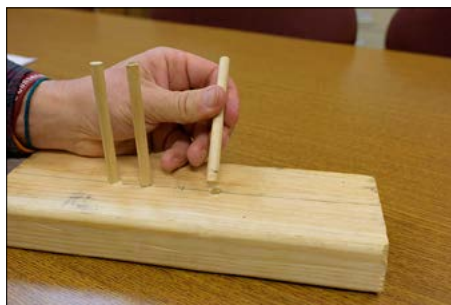
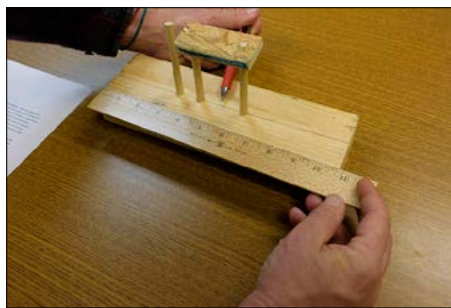
- 2 by 4 cut to 10 inches long
- 3 pieces of ¼-inch dowel, 3¾ inches long
- 1 dowel or piece of wood, ½-inch thick and 2 inches long
- Drill
- ¼-inch drill bit
- pencil with eraser
- 12-inch ruler
- permanent marker
- painter's tape
- small container of wood glue
- damp paper towel
- wool or acrylic yarn
- scissors
- dental floss

Instructions

Begin by using a pencil to mark the center of the piece of 2 by 4. From the center point, measure 1 inch left and right, and mark both of those points. From the left point, measure out 1 inch and place a mark there, as well. At this point, erase the center mark. Now, drill holes at the three marks. Make sure the drill holes are all the same depth.

Apply a small amount of wood glue to each drill hole. Take each ¾-inch dowel and moisten ¼ inch of one end. Place the moistened end into the drill hole. Make sure that all three dowels are straight, not leaning to one side or the other. At this point, set this part of the project to the side while it dries. The dowels must be secured in the holes tightly enough that there is very little to no movement.

Taking the 2-inch dowel or piece of wood, drill a ¼-inch hole



¼-inch deep on each end of the dowel. This portion is going to serve as the top of the loom. Once the glue has dried on your bottom piece, you can test the top for fit and adjust accordingly.

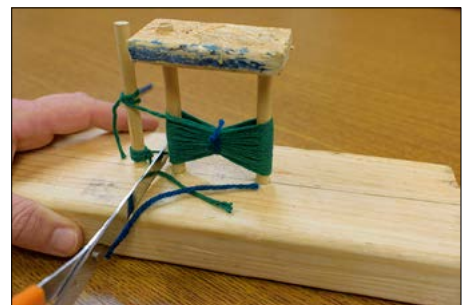
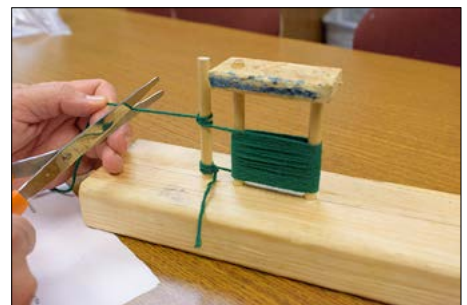
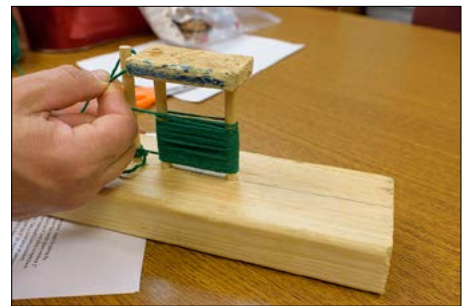
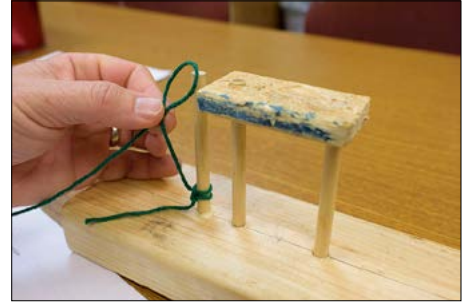
String Silencer Assembly

First, tie an overhand or hard knot on the far-left dowel (attachment pole), and finish with two half-hitch knots.

Start wrapping the yarn in a clockwise fashion around the second and third dowels of the loom, placing one loop above the next one. A good rule of thumb is to make 25 wraps (which will result in 50 loops when you are done with the project).

After the final loop, you will again tie two half-hitch knots on the far-left dowel. Then, you can cut the yarn that is attached to the main yarn source, being sure to leave a tag end on the attachment pole of approximately 2 to 3 inches.

Return to the main yarn source, and cut a piece of yarn approximately 12 inches long. Slide this piece of yarn under the middle of the stacked yarn in the loom, bringing it back over the top. Tie an overhand knot; make sure to pull it tight and



secure. The result will make the looped yarn resemble a bow tie. Cut any excess yarn approximately the same length as the looped yarn.

At this point, you can cut the yarn from the attachment pole in the space between the attachment pole and the first dowel. It is always a good idea at this point in the process to trim the excess yarn to the length of the outside edge of the yarn in the loom.

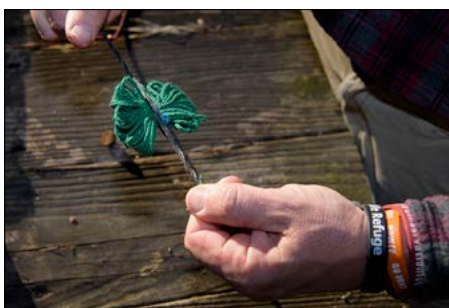
Now, remove the top dowel of the loom and slide the yarn up and over the top of the second and third dowels. The outside loops of the yarn will collapse toward each other and resemble a circle.



Installing the String Silencer

Measure 10½ inches from the top of the bow down the string, and mark this point with a permanent marker or liquid paper. Repeat the process on the other end of the bow. Once these measurements have been completed, you will need to relax the bow string in a bow press or stringer. Never unstring a bow with the foot/leg method. You don't need to take the string completely off the bow; in fact, this is not recommended because you may accidentally change the brace height of the bow.

Bow strings are made from various materials; some are a single strand, while others are two separate strands twisted together. Regardless, the strands need to be evenly separated where they were previously marked at 10½ inches. Then, place one string silencer between the strands and minimally twist the strands back into their original position. Don't worry if there is a small gap in the string, but do make sure the string silencer is evenly

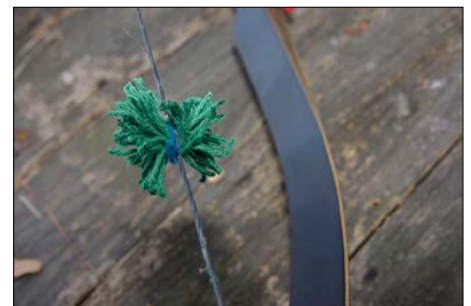


inserted into the string. Next, put the string back on the bow in the ready position. The gap in the string should shrink, and the pressure exerted on the string silencer by the string itself should hold it in place. If the string silencer continues to slide on the string after a few shots, you can tie it in place with a hard knot of dental floss on either side of the silencer.

Next, take your scissors and carefully cut the outer looped ends on both sides of each of the string silencers. Make the cuts as even as possible. If they are not evenly cut, the resulting ball will be lopsided. Now, slightly pluck (not draw) the bow string a few times to begin "fuzzing out" the ball. After a few actual shots, the ball will become more uniformly round. If there are some stray strands of yarn longer than others, you can simply trim them with the scissors.

The more you shoot the bow, the better the string silencer will look. Don't worry if lint is discharged during these shots; this is just excess material being jarred loose through the vibration of the bow string. You should notice an immediate reduction in bow noise once the string silencers are in place; however, sometimes it is necessary to adjust the silencers on the string in order to maximize their effectiveness.

Making a string silencer is a fun way to learn more about the bow and the physics necessary for shots to occur. Now, get some yarn and start weaving your bow string into silence!



Publication 3299 (POD-12-18)

By John Long, PhD, Assistant Extension Professor, 4-H Youth Development.



Copyright 2018 by Mississippi State University. All rights reserved. This publication may be copied and distributed without alteration for nonprofit educational purposes provided that credit is given to the Mississippi State University Extension Service.

Produced by Agricultural Communications.

Mississippi State University is an equal opportunity institution. Discrimination in university employment, programs, or activities based on race, color, ethnicity, sex, pregnancy, religion, national origin, disability, age, sexual orientation, genetic information, status as a U.S. veteran, or any other status protected by applicable law is prohibited. Questions about equal opportunity programs or compliance should be directed to the Office of Compliance and Integrity, 56 Morgan Avenue, P.O. 6044, Mississippi State, MS 39762, (662) 325-5839.

Extension Service of Mississippi State University, cooperating with U.S. Department of Agriculture. Published in furtherance of Acts of Congress, May 8 and June 30, 1914. GARY B. JACKSON, Director