



**Bridle Strap Production
at Schaff Piano Supply Company**

by Chuck Behm

Article Courtesy of Schaff Piano Supply Company

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Tricia

Bridle strap production at Schaff Piano Supply Company is in the capable hands of Tricia, a lovely young lady with a winning smile and a ready laugh. Her efforts at Schaff Piano are aimed at staying ahead of orders so that the technician's needs are always met in time. Because of her work, the supply shelves are kept filled.

Tricia produces all three sizes of cork bridle straps. Since medium bridle straps are always more in demand than either the large or small cork replacements, the majority of her time on the production floor is spent in keeping on top of the supply of medium cork bridle straps.



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A meaningful account of how Tricia produces bridle straps for Schaff must begin with a description of the raw materials that go into each strap. Each vital component is a special order item made in large quantity to maximize the savings for the technician.

Fabrilite, the material essential to making a durable tip, is purchased in bulk from India. Once received on large bolts at Schaff, it is sent out to a firm nearby to Schaff for slicing into rolls. The rolls of Fabrilite material are then returned to Schaff for bridle strap production. The quantity shown, recently purchased by Schaff,



will be enough for several years of bridle strap production. Schaff Piano Supply, being the only producer of cork bridle straps worldwide, must supply every technician working on upright pianos with this necessary part.



Here, a carton of Fabrilite has been opened to show the individual rolls of Fabrilite ready to use. The original bolts of material have been sliced into rolls of an exact width by razor sharp cutting machines. The edges of Fabrilite are smoothly cut, never frayed. Each roll contains 130 yards of material, enough for 184 sets of finished straps.

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Regulation braid (or string, as Tricia calls it) comes in large rolls 4000 yards in length (more than 2 miles worth!) This component is again made to order for Schaff and produced here in the United States by a manufacturer in Ohio. It is of the finest quality.

Cork must be imported from

Portugal, and is sent to Schaff in bags of 54,000 tapered pieces. The bag shown in the photo will provide corks for over 600 sets of bridle straps.

Cork, by the way, is harvested from the outer layer of bark of cork oaks in a delicate stripping process. The trees must be at least 25 years old before cork may be removed from the tree by skilled workers using specialized cork axes. The outer



bark from trees from which cork is harvested regenerates, ensuring that the tree will continue to flourish. Bark is only removed from the trees once every 9 years.

Fabrilite, braid and cork are ordered in sufficient quantities to ensure that bridle strap production always stays ahead of demand.

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Bridle strap production begins with the Fabrilite. A roll is kept to the right of the production table, ready for use. The roll shown is nearly to the end, and will be replaced after a few more sets of straps are produced.

Tricia first pulls a length of Fabrilite from the roll, and attaches it to two pointed hooks on the far end of the jig which she will be using. The Fabrilite is then stretched slightly as it is pulled over the bed of the jig.



The other end of the Fabrilite is then hooked on the points at the opposite end of the jig. Here, Tricia uses a leather awl to push the Fabrilite firmly down on the points.

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With the Fabrilite in place, Tricia unreeals the length of braid required for the one jig, which will produce 2 sets of bridle straps. "How do you know how much string you'll need?" I asked, as she unreeled more and more braid.

"I just know!" she said with a twinkle in her eye. I have a feeling that years of experience have a lot to do with it.

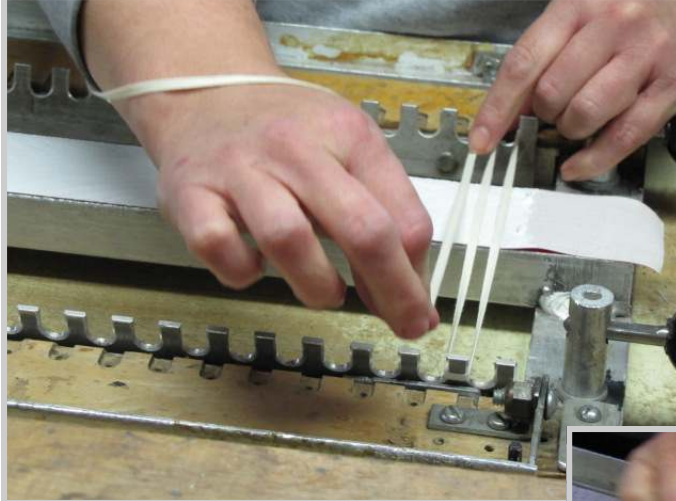
With the braid off to the side and ready to go, Tricia applies a coating of PVC-E glue to the underside of the Fabrilite. She coats half of the material, leaving the second half for a bit later. The glue sets up quickly, and if the entire stretch of fabric were coated, the braid would not adhere to the material by the time she reached the end of the jig.

Also visible in this photo are a supply of the medium corks which will be used for these sets of



straps, and the Titebond II glue (being kept in a small Elmer's glue bottle), which will be used to affix the corks to the braid.

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Beginning on her left, Tricia begins to string the braid back and forth across the glued surface of the Fabrilite. The braid stretches around aluminum fingers on either side of the jig, which are spaced just wide enough to allow sufficient Fabrilite for each tip.

She works down the jig to the half-way mark, then stops to finish the application of glue.



More PVC-E glue is applied with her brush.



Tricia then completes the rest of the braiding. 90 lengths of braid will produce 180 bridle straps.



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With the stringing of the braid completed (as seen from a different perspective above), Tricia now swings two clamps in place that will hold the braid firmly in position while the glue sets. The braid, you will notice, already goes up and over the bed holding the Fabrilite. The additional tension provided by the hold-down clamps completes the set-up.



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Tricia uses the edge of a small plastic squeeze bottle in one additional step to ensure adhesion. Working from one end of the jig to the other, she "smooches" (her word) the braid down a bit more into the glue. As any shop owner can tell you, it is these little "tricks of the trade" that one learns on the job that can make the difference between a job that turns out perfectly, and one that doesn't. Tricia obviously knows her craft well.



At this point, the entire jig is turned over for the application of corks. Tricia



uses a straight-edge to mark a pencil line along the braid where the corks will be glued.

When I was first told that bridle straps were hand made, I assumed that each strap was cut to length, whereupon a cork and a Fabrilite tip would be glued in place. The jigs used for producing bridle straps are so much

more effective than I ever would have imagined.

As a side note, this equipment was originally built during World War II by a man named Coest (Coe) Haag who produced bridle straps and marketed them under the Signal brand name. His grandson, Steve Haag, is now a tuner in Des Moines, Iowa.

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Tricia now applies a drop of Titebond II glue to each length of braid along the pencil line.

A cork is carefully applied to each drop of glue.



Tricia then goes back to give each cork a final nudge for good measure.

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At this point, work on this rack of bridge pins is finished for the day. The jig is taken to a nearby area, where it is placed along with other jigs so that the glue can be allowed to dry properly.

With the number of jigs available to use, Tricia can continue to work on other sets of bridge pins without stopping if needed. Supplies are continually being shipped out from Schaff to technicians world-wide, so replenishment is necessary on a continuous basis.



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Tricia now takes a jig from the storage area that has been drying since the day before. The clamps are removed, freeing up the straps.

Using a pair of scissors, Tricia cuts just to the outside of the corks, clipping off three or four straps at a time.



She works all the way to the end of the row.

When all the straps on the far side of the jig have been cut, she proceeds to cut the straps on the near side.



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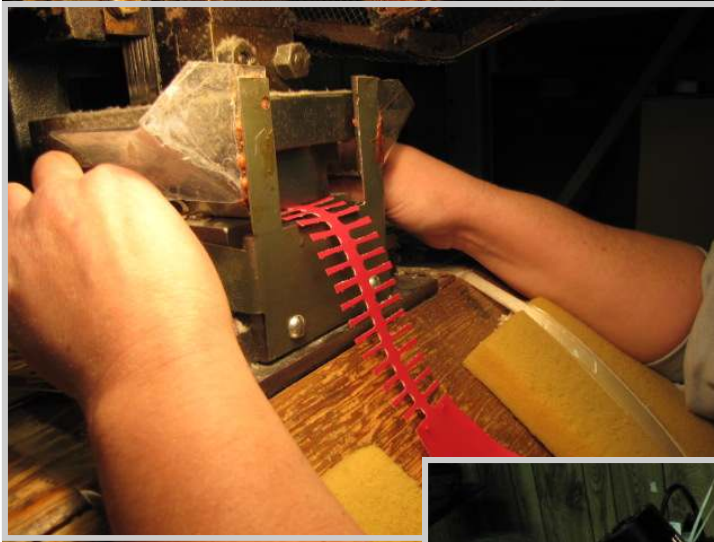
Ribbon after ribbon of glued bridle straps are placed atop one another while all the previous day's work are clipped and readied for the final stages of production.

Once all the straps have been trimmed, Tricia's attention is turned to the press on a bench around the corner. This vintage machine is where the Fabrilite is cut to size.



Though this machine has been in continuous use for decades it is well-maintained and runs like a top.

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Each Fabrilite strip is fed through the press from the rear. As the strip is moved along, it is positioned at regular intervals for cutting. Tricia operates the press with her foot, and the die cuts out a perfect tip for each bridle strap.

Work proceeds quickly as Tricia operates the machine with a practiced touch.



The finished bridle straps exit the machine in growing bundles, one on either side of the cutters.

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When the counter reaches 90, the strip is complete. All the bridle straps have been cut and are ready for packaging.

The technician receives 90 bridle straps per box. Saving the 2 extras, that means he will have a free box of straps for every 44 boxes purchased! What a deal!

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Boxes come flat. Tricia takes a flattened box and prepares it for packing.

With all 90 bridle straps carefully placed flat and straight in the box, it is closed up.



The 2 new sets are added to the growing stock of completed bridle straps. This container, when completely full, contains 600 sets of bridle straps - all mediums in this case.

From here, they will be taken to the supply shelves as needed.

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A final important piece of machinery vital to bridle strap production is the progressive press which cuts out the brass spring clips used in pianos which have hammer butts without back check holes.

The brass used for the clips comes in long strips, shown below.



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Jack, another long-time employee of Schaff, turns on the machine for a demonstration. With a bit of fine tuning, it begins to turn out a steady stream of clips.

The brass for the clips is fed off the large spindle to the right of the press.



The bridle straps are once again prepared by hand. This is the device used to affix the spring clip to the braid.

The punch drives the clip downward into a curved shape, while at the same time joining the clip and the braid together.





Final note by the author: On my visits to Schaff Piano Supply in Lake Zurich, I am struck by the professionalism and dedication of each and every employee. The great people who work there like Tricia and Jack make it a company worth getting to know. Everyone working for Schaff is doing their absolute best to contribute to the profession of piano technology. Their efforts make our job as piano tuners and technicians much the better.

Chuck Behm