

# How to Make a REBEC FIDDLE

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Don Walls, nationally known TV and night club entertainer and member of the "Circle C Boys," puts the Rebec through its paces.

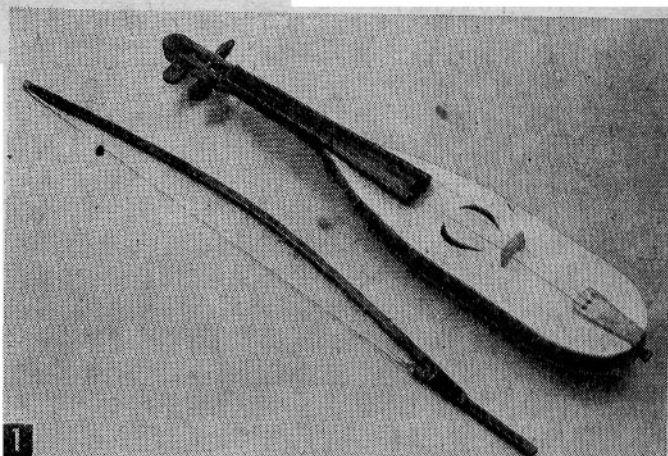
## Craft Print Project No. 232

**A**SURE-FIRE "conversation piece", this medieval-style fiddle makes a highly decorative wall ornament for the music or game room. More than just a piece of interesting bric-a-brac, the instrument can actually be played and has a very unique and pleasing musical quality. Early bowed instruments, ancestors of the modern violin, were of this general shape, probably due to the influence of the Arabian two-string *rehab* from which the later European rebec seems to have been developed. Violins, shaped as we know them, did not appear until the 16th century, developed by the Amati brothers from basic lines of Gasparo Bertolotti's instruments.

This instrument (Fig. 1) is of the late slender *rebec* style, using a violin-type neck which probably a music critic would say places it in the *Klein-Geigen* group of three-string fiddles. True rebecs were basically one structure, body and neck, with a step-down at the soundboard. We chose the later style fingerboard because it is easier to build and to play with modern technique, yet is still quite authentic. If you think a vast amount of skill is required to make an instrument with good tonal qualities, be prepared for a pleasant surprise. The rebec goes together easily and a little attention to a few details will produce an instrument that is a far cry from the general run of "cigar-box" fiddles.

Make the body (Fig. 2) from a 2 x 4 x 14½-in.

block of hard balsa. Mark a centerline down the 4-in. width and lightly draw in ¼-in. squares to layout the curved lines, or make a cardboard template of the shape on one side of the centerline and use to mark the outline on both sides of the centerline. Be sure to use the pre-assembly shape lines where the body joins the neck so that some stock will be left for final finishing after the neckpiece is in place. Then layout the side view on the block and band saw



Rebec or Rebab (meaning "The sorrowful-toned one") was so named By the Persians because of its plaintive music. Brought to Europe during the middle ages by returning crusaders, it probably was the ancestor of today's violin.

along the side lines first. Tack the two scrap pieces back in place and saw along the top view lines. Mark a centerline along the bottom of the body to correspond with the top centerline.

To aid in finish shaping the rough cut body, mark and cut out a cross section template as in Fig. 2. Then with a sharp knife, shape the bottom of the body round, occasionally testing with the template. Allow enough stock for final finishing with sandpaper. Make up the neck from a piece of 5/8 x 1 x 12½-in. maple. Cut the ½ x 2 1/8-in. slot and drill ¼-in. holes through both sides of the slotted portion for the pegs. Roughly shape the half round section and round off the top end of the neck.

Now, accurately mark and chisel out a recess in the body (Fig. 2) for a snug fit with the neck. Carefully check the depth dimensions of the recess, because the neck must be set at a slight angle downward from the top of the body. The neck should project 3/32 in. above the body top at

the end of the body and  $3/16$  in. above the body top where neck ends (see side view Fig. 2). Then glue and clamp the neck to the body and set aside until dry.'

In the meantime make the finger board. Note that the finger board, like the neck, is also set at a slight angle leaving only  $4.937$  in. of the finger board to be fastened to the neck. File a crown on the top surface and sand the entire finger board until smooth. Although this piece should be made of ebony wood, rock maple dyed with waterproof India ink and burnished to a high shine with a smooth aluminum rod will look very much like ebony. Do not apply the black finish to the surface to be glued. You can work this trick to finish the pegs too if made of maple. Also make up the nut and file three  $1/64$ -in. deep grooves in the top crowned surface for the strings.

When the glued-up neck and body assembly is dry, finish sanding the outside surface of the body removing the stock allowed for preassembly. Sand the shape of the body to blend smoothly into the neck. Then mark the part of the body to be hollowed out and carefully chisel and gouge out the body rounding all corners. Leave a wall thickness from  $1/4$  to  $3/16$  in. thick. Sand the in-

# MATERIALS LIST—REBEC

| No. | Size and Description                                | Use          |
|-----|-----------------------------------------------------|--------------|
| 1   | 2 x 4 x $14\frac{1}{2}$ " hard balsa                | body         |
| 1   | $5/8$ x 1 x $12\frac{1}{2}$ " maple                 | neck         |
| 1   | .312 x $1\frac{1}{2}$ x 9.312" maple or ebony       | finger board |
| 1   | $1/8$ x 4 x 14" spruce or pine                      | soundboard   |
| 1   | $3/16$ x 1 x $1\frac{1}{2}$ " maple                 | bridge       |
| 1   | $1/16$ x $5/16$ x $1\frac{1}{2}$ " maple            | bass bar     |
| 1   | $3/16$ dia x 2" maple dowel                         | sound post   |
| 3   | $\frac{1}{2}$ x 1 x $2\frac{1}{2}$ " maple or ebony | pegs         |
| 1   | $3/16$ x $5/16$ x 1" ebony or rosewood              | nut          |
| 1   | $5/16$ x $5/16$ x 30" maple or birch                | bow          |
| 1   | spool #20 mercerized crochet cotton thread          |              |
| 1   | $1\frac{1}{16}$ x 3 $1/8$ x 20-gage brass           | tailstock    |
| 1   | jar Elmer's glue                                    |              |

terior of the body to remove all wood fuzz.

The soundboard covering the body (Fig. 2) comes next. Make this vital part from an old, well-seasoned piece of spruce or pine having fine vertical grain. Do not use quarter-sawed stock. Saw and sand or plane to slightly over  $3/32$  in. thick (about  $1/64$  in. over). Place it on top of the Rebec body and mark the board for the neck cut out and around the body. Also transfer the outline of the crescent shaped sound holes to the board and saw to shape with a fine toothed jeweler's saw. Now, carefully sand the surface of the soundboard until it is  $3/32$  in. thick on the bass

string side and 1/16 in. thick on the other side (see sec. A-A Fig. 2).

To develop a slight camber in the soundboard when it is glued to the body, make the bass bar and soundpost and glue the bass bar to the underside of the soundboard. Then set the soundpost in position and glue the soundboard to the body. For an efficient yet gentle clamping action, wrap the body with a long length of model-airplane rubber band. Also glue the finger board and nut to the neck at this time.

Make the three-string pegs from ebony or hard maple. If you have a wood-turning lathe, making the taper on the pegs is quite simple. If not, clamp a wooden block to a sanding disc table as in Fig. 3 and sand the taper using the block as a guide. Form the concave, thumb-grip portion of the peg by sanding with a 2½ or 3-in. dia. sanding drum. Use a half-round Swiss file to taper the ¼-in. drilled holes in the neck for a snug fit with the pegs. The bridge is shown full size in Fig. 2. Merely transfer the outline to a piece of maple sanded to a taper as shown and cut out with a jeweler's saw. While the Rebec may be played with an ordinary straight violin bow, a curved bow of the type shown in Fig. 2 is more in keeping with the period of the instrument. Make the bow from two pieces of 5/16-in. square maple or birch pegged and bound together with glue and thread. Because horse hair is very difficult to get, string the bow with fourteen strands of #20

mercerized crochet thread and apply plenty of rosin.

For an attractive finish, stain the neck and body a red mahogany and when dry, rub on two coats of UGL clear floor sealer with a cloth. Do not stain the soundboard, merely give it two coats of the clear floor sealer. The bridge is left unfinished as is the inside of the body. Make the tailstock (Fig. 2) from sheet brass to complete the instrument, and string with the first three strings of a violin obtainable at any music shop. Do not use gut or nylon strings.

This Rebec was designed so that it could be left "strung" indefinitely without damage, for display purposes. The strings, however, will stay alive longer if slackened slightly when not in use. Tune the instrument in consecutive fifths, the same as a violin with either violin E on the top string, or the C below E. The lower tuning is preferred by some people because it favors the reedy tone of this particular instrument. While early rebecs were played somewhat like a viol with bowed palm up and held on the player's knees, the modern technique, or violin position, yields greater agility. The tone of the instrument will improve with age and use.

• Craft Prints in enlarged size for building musical instruments are available at 50¢ each. Order by print number, enclosing remittance (no C.O.D.'s or stamps) from Craft Print Dept., SCIENCE AND MECHANICS, 450 East Ohio Street, Chicago 11, Illinois.

