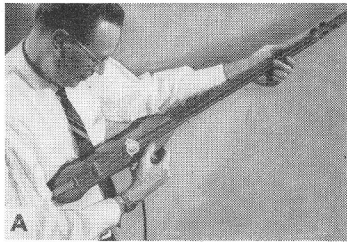


FUN with a 2x4 Electric Bass



Free of the weight and bulk of its big brothers, this electric bass is easily held in the arms. Body fits in crook of right arm, eliminates need for neckstrap. Strings are plucked gently wherever finger position is most comfortable.

By ROY L. CLOUGH, JR.

THE deep, rhythmic beat of a full-sized string bass can enrich your musical entertainment at home if you make the unique two-string electrical "splinter" in Fig. 1.

Cut from a knot-free section of an ordinary 2 x 4 and two hardwood strips, it produces heavy, vibrant tones throughout a two-octave range below middle C, with the aid of a guitar-type or similar amplifier. You'll need a little practice to get the hang of it, but that will come easy if you have ever studied music enough to play a little ditty on the piano or other stringed instrument. You simply play the alternate low notes appearing in base clef lines on piano music.

You can build this surprising substitute for a bull fiddle with about \$12 worth of materials—much of which may now be in your scrap box—ready for use with the amplifier. If none is available, try reproducing the music through a radio equipped with a record player jack or through a small tape recorder. Special musical amplifiers like that in Fig. 1 are very fine but also very expensive.

Join Wood Parts First. Begin by band-sawing the pine body and maple neck to approximate shape as in Fig. 2A and B. Start the 3-in. body notch for the neck with a jigsaw or hacksaw, then carefully chisel out the remaining wood to a 3/4-in. depth. Make top and side cutouts for the pickup and jack, using a 5/8-in. drill, chisel and knife. Drill screw and peg holes in the neck.

Sand both parts to final shape, slightly rounding all body edges and bottom of the neck. Now fit neck into body notch, start



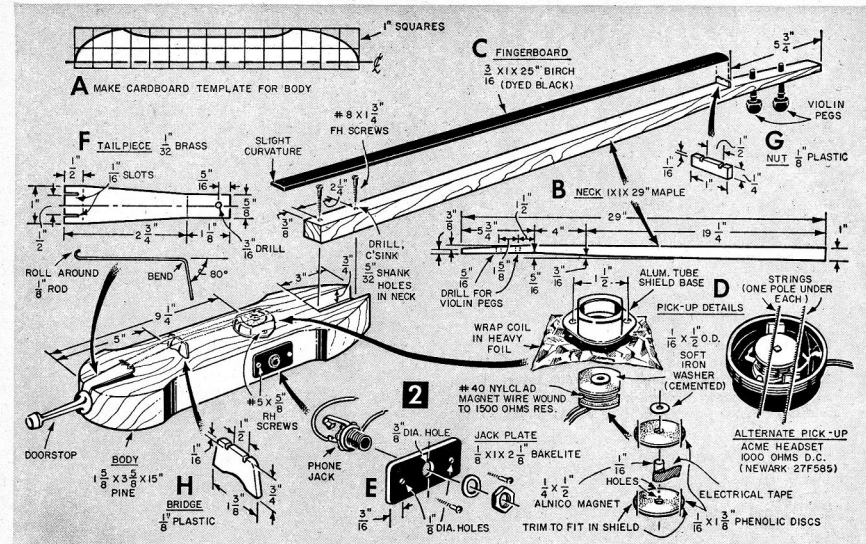
Solid beat of the two-stringed 2 x 4 bass gives a real lift to home or party jam sessions whether playing a melodious "La Paloma" or frenzied "When the Saints Go Marching In." Far from being a toy, it has tonal quality closely approaching that of a ponderous four-string bass viol.

pilot holes with a nail or small drill and join parts together with glue and screws. Wipe off excess glue. When dry, treat the assembly with red mahogany stain and follow with a sealer which will dry to a satin finish.

Cut the fingerboard (Fig. 2C) out of 3/16-in. hardwood, dye it "ebony" with India ink and rub to a satin finish with a brass rod. Glue the board to flat top of neck as in Fig. 2C so that about 1 3/4-in. of board extends beyond end of neck.

Pickup Assembly. This is the only critical part of the construction. If you would like to bypass the work and save cost at the expense of some compactness, you can satisfactorily use an Acme 1,000-ohm d-c headset (see Materials List). After removing ear-piece and disc, install as in Fig. 2D alternate. No jack is needed if you replace leads with shielded mike cable and wrap case in foil.

Your pickup shown in Fig. 2D, used a 1/2-in. high by 1/4-in. dia. alnico magnet. Practically any 1/4-in. round or square magnet will do,



but you'll need an ohmmeter and coil winder to make it.

Cement the magnet ends into two phenolic discs as in Fig. 2D to form a core and wrap a layer of electrical tape around the magnet. Thread a short length of # 20 shielded grid

wire through one of the disc holes and solder it to the end of a spool of #40 Nylclad heavy magnet wire. Wrap the wire around the magnet until 1,500 ohms d-c resistance is indicated on an ohmmeter. Run another short piece of the hookup wire through other disc hole and solder to end of magnet wire.

Cement a soft iron washer to top side of pickup as in Fig. 2D for a pole piece. Cut disc sides as required for pickup to fit in its aluminum shield. Wrap aluminum foil around entire pickup and place it in the shield. Insert wires through body cutout from top and screw shield to body over top cutout next to the fingerboard. The foil will be grounded to the coil's outer lead and the shielded braid of the microphone cable.

Shorten leads through side cutout in body so they are just long enough to solder to the 2-conductor phone jack. Install jack on a Bakelite plate as in Fig. 2E and fasten latter in place over side cutout with screws. If you use Acme headset, you can bypass the jack, by replacing wire leads with shielded microphone cable.

Cut the tailpiece from 1/32-in. brass and bend to shape as in Fig. 2F. Place in position over end of body and fasten to body with doorstop as in Fig. 2A. Shape the nut (Fig. 2G) and bridge (Fig. 2H) from 1/8-in. plastic and cement nut in place at peg end of fingerboard. Install violin pegs in their neck holes and attach Lektro-Magnetic guitar bass strings to tailpiece and pegs, each winding around outside edge of its peg.

MATERIALS LIST—2 x 4 ELECTRIC BASS

No. Req.	Size and Description
1 pc.	1 5/8 x 3 3/8 x 15' knot-free pine (body)
1 pc.	1 x 1 x 29' maple (neck)
1 pc.	1/4 x 1 x 25' birch or other hardwood (fingerboard)
1 pc.	1/2" dia. x 1/2" high alnico button magnet (pickup) (radio parts store, hobby shop)
1	2-conductor phone jack (Newark 39F744—23¢)
2	standard 1/2" 2-conductor phone plugs (Newark 39F746—41¢ each)
1	aluminum adapter base for 5-prong tube shield with 1/4" centered mounting holes, 1/2" high cap (pickup holder)
6-8'	shielded microphone cable
1/2 lb	spool #40 Nylclad heavy magnet wire (Newark)
2	4' length #20 shielded grid wire
1 pc.	6 x 6" heavy aluminum foil (pickup shielding)
1 pc.	1/2 x 1 1/4 x 1 1/2" Plexiglas or Lucite translucent white plastic (bridge, nut)
1 pc.	1/2 x 1 x 2 1/8" Bakelite, phenolic or plastic (jack plate)
1 pc.	1/4 x 1 3/8" dia. phenolic or Plexiglas discs (pickup)
2	1/2 x 1 x 4" sheet brass (tailpiece)
1	iron-wound Lektro-Magnetic guitar strings (1 low E, 1 A) (music store)
2	tapered violin pegs (music store)
1	1,000-ohm d-c Acme headset (alternate pickup replacing magnet wire, phenolic discs—Newark 27F585—\$1.26)
Misc.	rubber-tipped metal doorstop, 1/16 x 1/4" O.D. soft iron washer, 4 #5 x 5/8" chrome-plated rh (roundhead) screws, 2 #8 x 1 3/4" fh steel screws, 1/4 pt. red mahogany or maroon wood stain, 1/2 pt. UGL or Fabulon floor sealer, wood putty, glue, India ink, household cement, Scotch #33 plastic-backed electrical tape.
Notes:	Newark nos. available at Newark Electronics Corp., 223 W. Madison St., Chicago 6, Ill. For hardwood and plastics try hobby shop or order through Albert Constantine and Son, Inc., 2050 Eastchester Rd., New York 61, N. Y.