

LIMERICK LAP HARP

Kit



Musicmaker's Kits Inc.

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www.harpkit.com

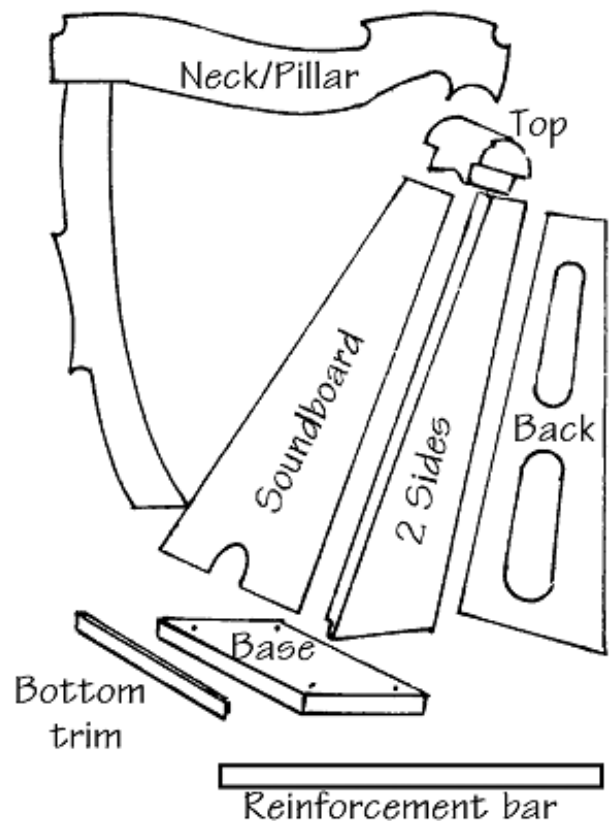
PARTS LIST:

1 Set of Assembly Instructions

- 1 Neck/Pillar piece
- 2 Sides
- 1 Base
- 1 Top
- 1 Back (lam. cherry/walnut)
- 1 Soundboard (lam. birch)
- 1 Reinforcement bar
- 2 Bottom trim pieces ($\frac{1}{4}$ x $\frac{3}{4}$ x about 14)

HARDWARE:

- 22 Standard zither tuning pins
- 4 Enlarged hole zither tuning pins
- 26 Threaded bridge pins
- Allen wrench $\frac{5}{64}$ "
- 23 Medium brass eyelets
- 3 Large brass eyelets
- $\frac{1}{2}$ oz. Tiny nails
- 5 Wood screws, $1\frac{5}{8}$ "
- 2 Wood screws, 3"
- 2 Drill bits $\frac{1}{8}$ " and #24
- 1 L-shaped tuning wrench
- 1 Set of strings, low-C tuning (Nylon or Wire)
- 1 Scrap piece
- Spacing Guide



If you have any questions about the assembly process – please visit our online Builder’s Forum at www.harppkit.com/forum

BEFORE YOU BEGIN

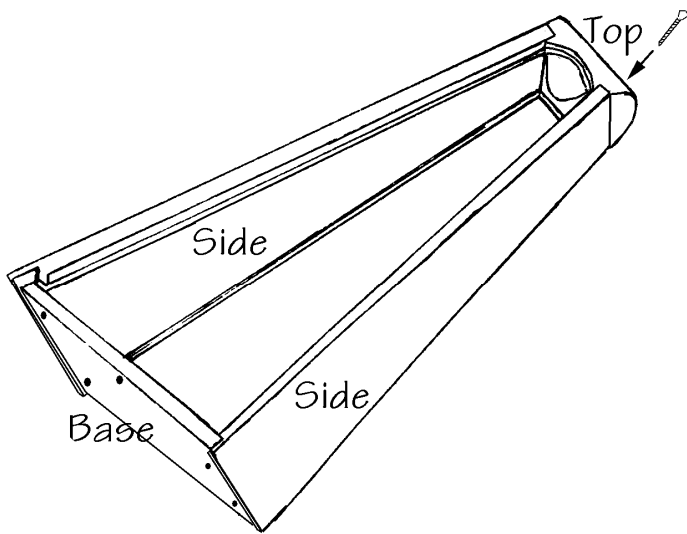
Please take the time to check over the parts of our kit now, to make sure everything is there. If you discover a problem, call us right away so we can rectify it quickly without causing you much delay in your project. We also suggest skimming through the entire directions before beginning, just to get an overview of the project. You may decide that you need to gather more tools or purchase a few optional decorations or accessories to enhance the finished instrument. Now is a good time to decide so you can avoid delays when you reach those steps of construction.

DO NOT ASSEMBLE THIS PROJECT WITH SUPERGLUE OR HOT MELT GLUE!

Find a good woodworking glue such as Elmer's Carpenter's Wood Glue or Titebond. Be sure to put enough glue on the joint to wet the entire surfaces to be joined. A good sign of proper gluing is that a little excess will squeeze out around the joint when clamping pressure is applied. Too little glue may cause the parts to separate later, whereas too much glue makes things messy. We always keep a damp rag handy for quick cleanup, as necessary. It is especially helpful to keep your fingers clean while gluing, because gluey fingerprints have the embarrassing tendency to appear on the finished product in places you never expected. Most woodworking adhesives "set" sufficiently after 30 minutes of clamping to allow you to proceed. Check your dispenser for recommended drying times.

ASSEMBLY INSTRUCTIONS:

____ **1.** You will use the two **SIDES**, the **TOP** and the **BASE** for assembling the main frame of the soundchamber. Notice that the two **SIDES** are right and left, and you'll want to arrange the pieces so that they will fit the **TOP** and **BASE** pieces properly. Set it up without glue first to make sure everything fits well (we even like to screw the frame pieces together dry in order to check the fit of the **NECK/PILLAR** piece before proceeding with glue). See Step 16 if the parts need some adjustment.



NOTE: The **TOP** piece has an arch sanded in the front side, just for looks. Make sure that faces forward on the harp frame.

When satisfied with the fit, use a 1/8" drill bit to bore pilot holes through the **TOP** piece into the **SIDES** at the positions of the two holes pre-drilled into the **TOP**. Use 3" screws to fasten the **TOP** to the **SIDES**.

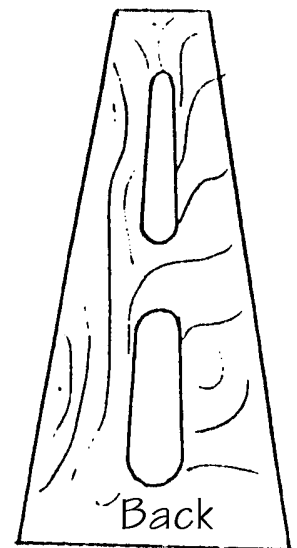
HINT: Be careful when drilling the pilot holes. We want the screws to be closer to the inside of the harp than the outside, but you may need to drill the pilot holes at a slight angle in order to get the screws to enter the sides firmly without cracking the surface of the wood.

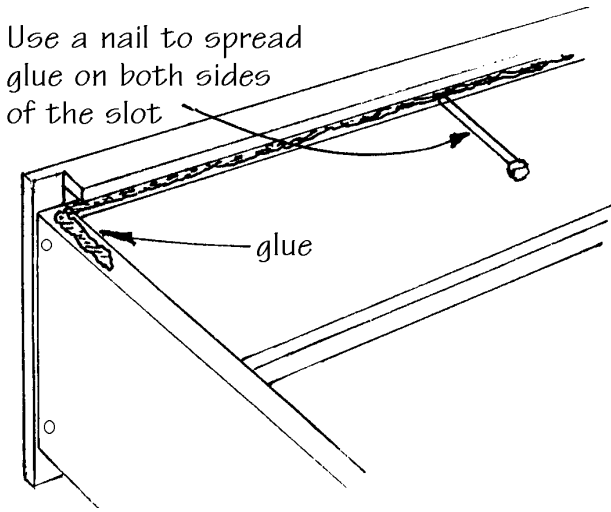
NOTE: The **BASE** has five holes already drilled through, and they are countersunk on the outside, so when you put the **BASE** on, the countersunk side should be facing outward.

The **BASE** piece is meant to fit between the slots in the sides. This will allow you to slide the **BACK** and the **SOUNDBOARD** up into place from the bottom. Use four 1-5/8" screws to fasten the **BASE** to the **SIDES**.

When satisfied with the fit of all four parts, re-assemble them all with glue and screws. Allow about 30 minutes drying time.

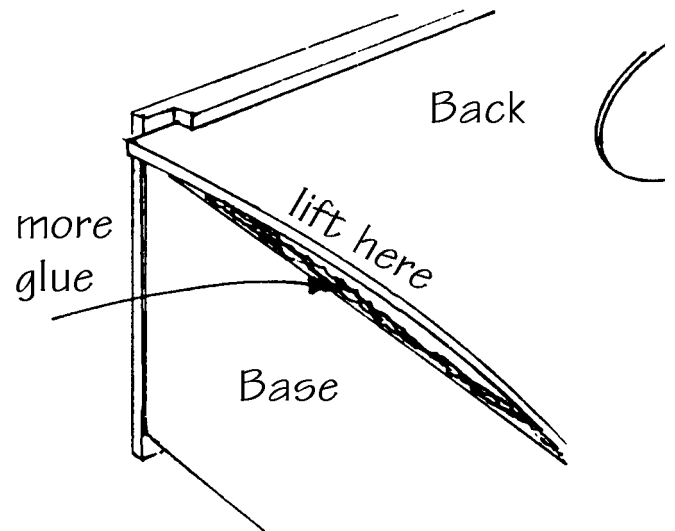
____ **2.** Select which face of the **BACK** that you want to show outward on the harp and test-fit the **BACK** by sliding it into place in the **SIDES**, from the bottom up. It should overlap the **BASE** slightly, but you can trim off the excess later.



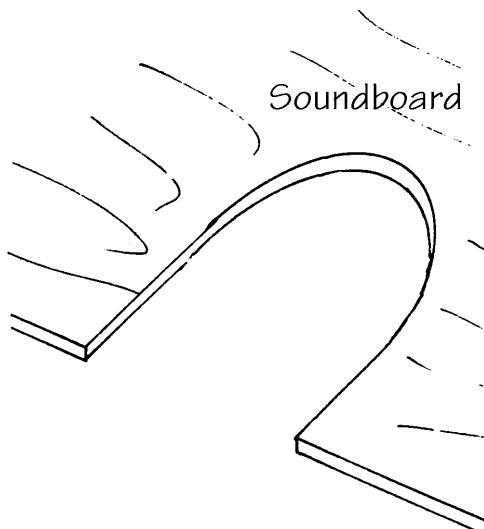


When satisfied with the fit, remove the **BACK** and squeeze a bead of glue into the slots of the frame. You will save yourself some mess by squirting the glue into the slots so it does not run down the **SIDES** of the frame. Put a little glue near the corners of the **BASE** also, as shown. Then slide the **BACK** into place again.

Now you can lift the bottom lip of the **BACK** and squirt some glue along the edge of the **BASE**. Use weights, clamps, or the small nails provided to secure the **BACK** to the **BASE** until the glue dries (the nails will be covered over later).

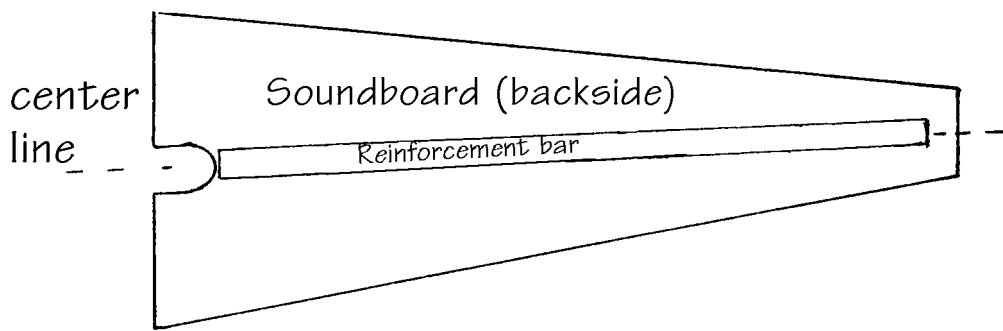


NOTE: Pound the nails in fully so that there is a slight dimple in the wood. This will keep them from interfering with the **BOTTOM TRIM** strip to be installed later.

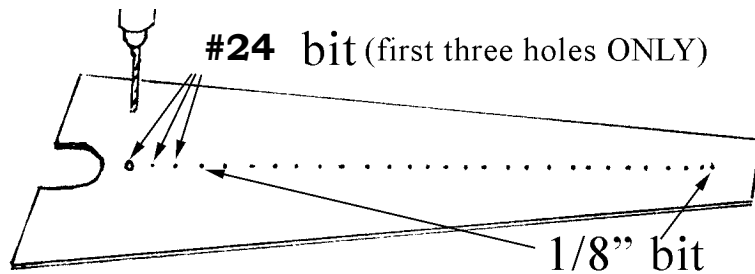


3. Lay the **SOUNDBOARD** on your work table with the better side facing down (the side with the punch marks), and mark a center line from the top to the notch at the bottom. Center the **REINFORCEMENT BAR** on the back of the **SOUNDBOARD**, starting at the notch.

Draw a pencil line around it to mark the proper position, and then take the time to lightly sand the **REINFORCEMENT BAR** to remove any rough edges.



When satisfied, glue the **REINFORCEMENT BAR** to the inside of the **SOUNDBOARD**, using some clamps or weights to hold the parts together firmly until dry (about 30 minutes).



___ **4.** Drill the top 23 holes with the 1/8" (smallest) drill bit provided, all the way through the **SOUNDBOARD** and the **REINFORCEMENT BAR**. These holes are drilled straight down, not at an angle.

Drill the bottom three holes with the #24 drill bit to fit larger eyelets.

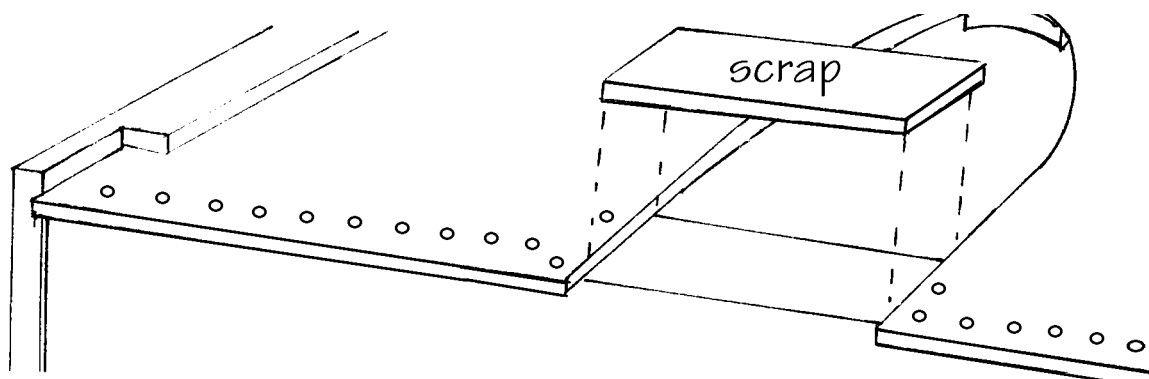
___ **5.** It is best to sand the front of the **SOUNDBOARD** before installing it. Sand with the grain, using a fine grade sandpaper (320 - 400 grit), or use an electric orbital sander to remove any roughness, being careful not to sand through the top veneer of wood.

NOTE: We suggest that you sign your name and the date on the back of the soundboard so that you will be able to see it through the access holes in the **BACK**.

___ **6.** Test fit the **SOUNDBOARD** to the harp frame. You may have a little difficulty slipping the edges of the **SOUNDBOARD** into the slots of the **SIDES**. Reach through the access holes in the **BACK** to help align the parts. You may also need to taper the edges of the **SOUNDBOARD** a little to get them to fit the slots. Use coarse paper (80 - 100 grit) to sand the backside of these edges until they fit - it is important to be able to slide this panel easily into place quickly once the glue is applied.

___ **7.** When satisfied with the fit, squirt glue into the slots of both sides and the top, as well as putting some near the corners of the base. **DON'T SKIMP ON GLUE HERE --YOU DON'T WANT THE FRONT TO GET PULLED OUT BY THE STRING TENSION!** Use a nail to spread it into the slots, working as quickly as you can. Then slide the **SOUNDBOARD** into place just as you did the **BACK** panel.

Lift the bottom lip of the **SOUNDBOARD** and squirt some glue under that as well. Then use several of the small nails provided to secure the **SOUNDBOARD** to the **BASE**. It's a good idea to add a couple of extra nails near the notch, as shown, because there is a lot of tension and stress at this point.



___ **8.** Use the scrap piece of soundboard material to fill the gap at the bottom of the harp. Just glue and nail it to the **BASE**, as shown.

___ **9.** Now you can cover the ugly nails at both front and back of the soundchamber, using the **BOTTOM TRIM** piece provided. You will need to carefully trim it to proper length (we use a disk-sander for careful trimming), as well as sand the upper edges to match the angle of the notches into which they are to fit.

Leave any excess width to be trimmed off after they are glued in place.

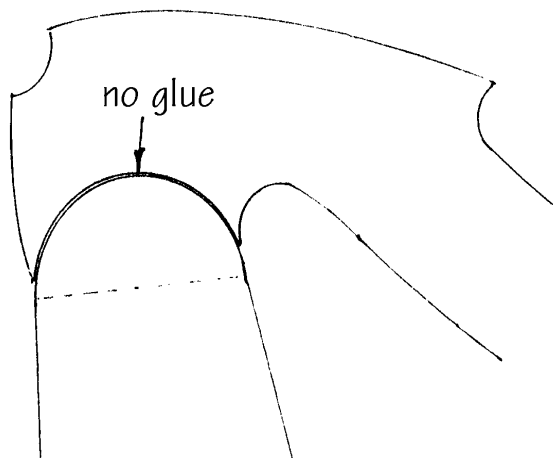
When satisfied with the fit, glue these **TRIM** pieces into place, holding them with clamps or tape until dry.

___ **10.** Voila! The gluing is all done. Now comes the majority of the sanding. The two most troublesome spots are at the bottom, where you need to trim off any extra wood that hangs down below the **BASE**, and at the **TOP**, where you'll want to trim off any extra wood that hangs out over the **SIDES**.

We use electric sanders for these tasks. A belt sander with coarse paper works best for removing wood, and an orbital sander with medium paper is best for smoothing the surfaces. If elbow grease is your only option, wrap coarse (80 - 100 grit) sandpaper around a wood block (scrap of 2 X 4) for wood removal. Then switch to medium (150 - 180 grit) paper for removing the scratches left by the coarse paper.

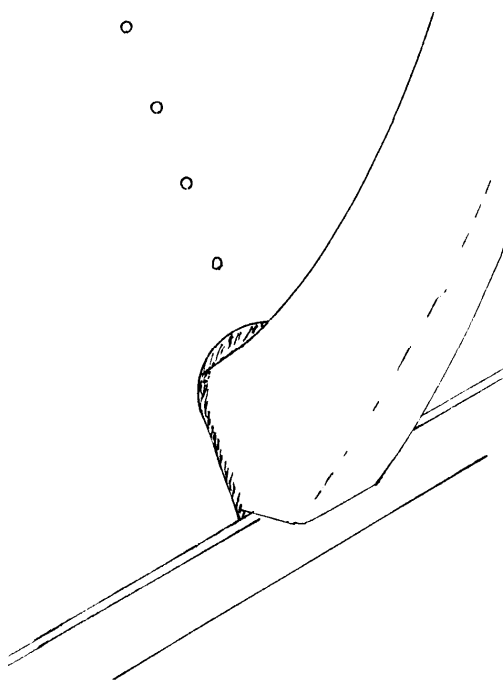
___ **11.** Now you can spend a quiet evening with final sanding. We recommend rounding over all sharp edges and corners so they feel smooth to the touch. Look also for any machine marks left by our saws, planers and routers. Medium sandpaper, worked with the grain of the wood, will do the job nicely in time.

NOTE: Watch closely for any glue residue (runs, drips, smudges) that may be visible on the outside of the instrument. They are hard to see now, but will show up like bugs on your windshield when you apply finish to the wood. Use sandpaper, sharp chisel, scraper, or knife to remove all traces of visible glue. Nothing identifies an amateur more clearly than glue smudges on a finished product.



___12. Test fit the **PILLAR/NECK** to the soundchamber. **THIS PART WILL NOT BE GLUED TO THE HARP.** We designed this instrument so that the strings literally hold the harp together. If, at some time in the future, you wish to disassemble the harp for repair or refinishing, all you will need to do is remove the strings and one screw -- the entire **NECK/PILLAR** assembly will come off again.

The top "knuckle joint" is meant to hold the **NECK** firmly while allowing a small amount of movement as the harp responds to the tension of the strings.



The bottom of the **PILLAR** should fit part way into the notch of the **SOUNDBOARD**, but it will hang out over the front of the **BASE** by a half inch or so. This joint will be held by one screw, just to prevent the **PILLAR** from sliding out of position.

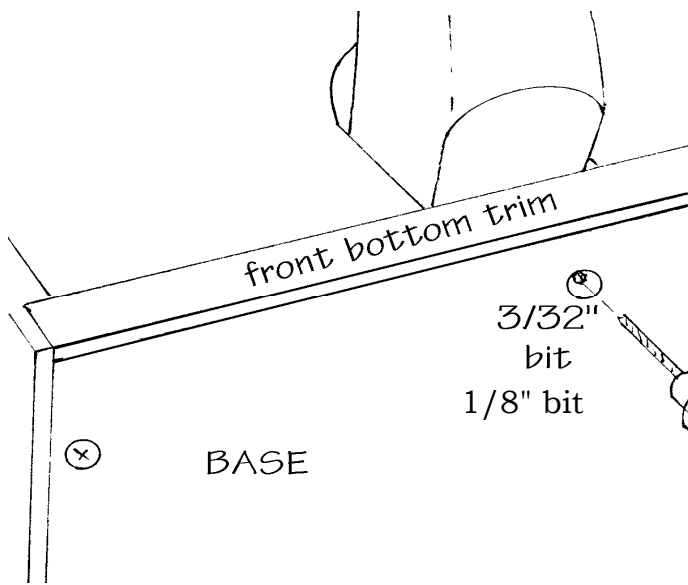
We try to maintain an even amount of open space around the notch, so the **SOUNDBOARD** does not touch the **PILLAR**. Contact here may dampen the sound of the lower strings.

We glued the **NECK/PILLAR** together to fit one of the kits from the same batch of parts as your kit, so it should fit quite well. A slight (1/8") gap at the top or bottom is OK, as the string tension will draw them together, but a larger gap may require some preparation work before proceeding.

If you have a large gap at the top of the soundchamber, where the rounded "knuckle joint" is located, then you'll need to remove some wood from the bottom of the **PILLAR**. This is not difficult if you have a disk sander, but you must be careful to maintain the same angle and tilt that is already there. The **PILLAR** does not stand vertically, but is purposely canted to one side so the strings remain centered. Hopefully, you'll not have to monkey with this joint.

If there is a large gap at the bottom of the **PILLAR**, a simple solution would be to fill the space with a scrap of wood. Left over pieces from the access holes in the **BACK** might work perfectly for this.

____ **13.** Lay the harp body on its back (put down a towel down to protect the wood), with the base facing you. Hold the **PILLAR/NECK** in position so it is centered in the notch, not touching the **SOUNDBOARD**.



You'll want to drill a 1/8" pilot hole up into the bottom of the **PILLAR** through this hole. Insert a 1-5/8" screw into that hole and tighten. Now your harp is assembled! The strings will draw the joints more firmly together.

NOTE: Do not use any glue here.

____ **14.** This is a good time to decorate your harp before the final finish is applied. Decorative inlay, hand painting, drawing or wood burning, etc. can add a special creative and personal touch. Note that you can remove the **NECK/PILLAR** from the **SOUNDCHAMBER** for sanding, decorating, and finishing.

____ **15.** Dust the harp with a clean rag before applying the finish.

____ **16.** Apply the finish of your choice. It will be easier to apply the finish if you remove the **NECK/PILLAR** assembly from the harp body. Here are a few guidelines for selecting a good protective coating:

STAIN -- STAINS are coloring agents and should only be used if you dislike the natural color of the wood. We usually do not apply stains to our projects, especially when they are made with naturally beautiful hardwoods such as cherry or walnut. These woods look very nice with just a clear finish. But, if you want to color the wood differently, your staining should be accomplished before applying a surface finish such as oil, varnish, or lacquer.

OIL -- An oil finish will give your wood a low luster appearance, bringing out the natural color of the grain, but it tends to soak into the wood and appear dry and "thirsty" after awhile. The principal advantage of an oil finish is that it can be applied and wiped dry immediately, so you can proceed to installing hardware (and strings) right away. The disadvantages of oil are that it usually does not give much surface protection or sheen, although there are some brands that include waxes and/or varnishes to give more surface build-up and luster.

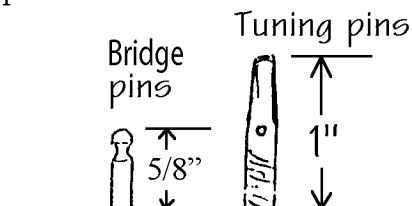
VARNISH -- Any regular varnish will work fine on this project, but we recommend our wipe-on gel urethane called MUSICMAKER'S INSTRUMENT FINISH. The advantages of this finish are its simple application, durability, and deep, soft luster.

LACQUER -- Many professional instrument makers still use lacquer for their finish. The most readily available lacquer is called Deft Clear Wood Finish. It is best to purchase a can of liquid to brush on as a sealer coat first, and then use an aerosol can of the same product to spray on the final coats. The advantage of this finish is its quick drying time, but the disadvantage is the strong odor of the toxic lacquer fumes. **CAUTION:** Lacquer finish will not work over Heat Transfer decorations -- it dissolves the toner.

INSTALLING HARDWARE

CAUTION: It is smart to make yourself a couple protective pads out of scrap wood that you can place around the area where you are pounding with a hammer. One slip of the tool can cause significant damage to the finished surface of your beautiful instrument. Or, if you have a drill press available, you can “press” the pins into place (with the machine turned off) without using a hammer at all.

____17. Attaching the hardware is easier to do if the **PILLAR/NECK** piece is separated from the body of the harp. Place a towel on your work table (under the **NECK**) to protect the wood while you pound.



Lubricate the threaded **BRIDGE PINS** by scraping the threads across some candle wax. Pound (or press) them into the lower row of holes drilled into the neck, until the head of the pin is about 5/8" above the wood. Use the 5/8" **SPACING GUIDE** to double-check the pin height, using the 5/64" Allen wrench to adjust them if necessary.

NOTE: Our **THREADED BRIDGE PINS** are adjustable in depth, allowing you to change the space between the harp string and the wood surface of the neck, using a 5/64" Allen wrench. This will be important later when you want to install sharpening levers.

____18. **DO NOT LUBRICATE THE THREADS OF THE TUNING PINS!** Please find the four **TUNING PINS** that have the small holes enlarged for the thickest strings. These pins should be located nearest the end of the **NECK** where the longest strings will be attached. Pound (or press) the **TUNING PINS** into the upper row of the holes into the neck. Be sure the threaded end goes into the wood. Insert them so they stand about 1" above the wood, as shown above.

NOTE: If you pound a tuning pin in too deeply, you can raise it back up by turning it counter-clockwise with the tuning wrench.

holes in soundboard



eyelets



____19. Find the brass **EYELETS** and push them into the holes in the front of the **SOUNDBOARD**. These act as string guides. Note that there are three large size (5/32") for the thickest bottom strings. The rest are 1/8" diameter for the other 23 string holes.

STRINGING

____20. Stringing a harp is somewhat of an art. We recommend that you read through these last pages of directions completely before beginning, so you know what to expect. It is not uncommon for people to call us in a panic because their harp either: a) won't stay in tune; or b) keeps breaking its strings. Careful installation will do much to eliminate these problems. We string this model harp regularly and tune it up to concert pitch right away with rarely a broken string, but it takes a little patience and concentration.

The strings are numbered from 1 (for the smallest) to 26 (for the longest), and they are color-coded to help guide you as you play. "C" strings are all red, and "F" strings are blue.

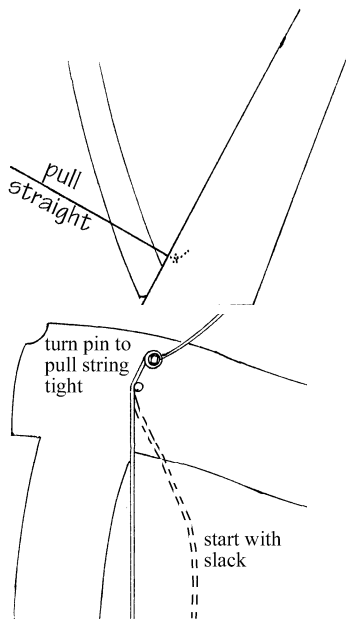
**IF STRINGING WITH WIRE
SKIP TO PAGE 15**

Gather the following tools for this operation:

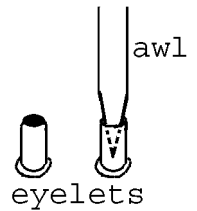
- Set of harp strings with plastic beads
- Scissors
- Tube of Superglue or Krazy glue
- Tuning wrench

NOTE: If the color on the strings happens to fade, you can restore it with permanent marker.

____ **21.** Start at the bass (longest) end of the harp with #26 (red). Push the end of the string through the lowest hole in the **SOUNDBOARD** from back to front.



____ **22.** If it is a tight fit through the eyelet, you may need to flare the end of the eyelet as shown (right). Work the eyelet carefully over any bulky spots. These lowest 9 strings are already knotted for you, so just pull the string through completely until the knot is tight against the inside of the **SOUNDBOARD**.

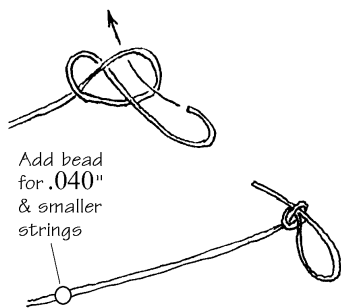


NOTE: PULL STRAIGHT THROUGH THE HOLE, NOT AT AN ANGLE, SO AS TO AVOID SCRATCHING THE NYLON AGAINST THE BRASS EYELET.

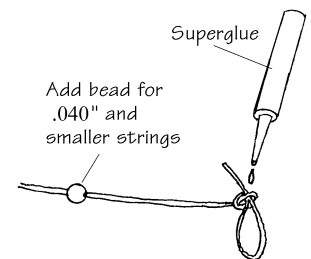
Thread the other end of the string through the last **TUNING PIN** at the point of the **NECK**. Pull it through the **PIN** until there is some slack below the pin. Turn the **PIN** clockwise with the tuning wrench. As the string begins to tighten, place it in the groove of the **BRIDGE PIN**.

HINT: Do not accumulate a lot of windings of string around the **TUNING PINS**, especially in the bass. They become bulky and cumbersome. If you find yourself with that problem, turn the **TUNING PIN** backwards to unwind the string then pull more slack through the hole before tightening again. Your goal is to have the string come off the **TUNING PIN** at about the same height as the groove in the **BRIDGE PIN**.

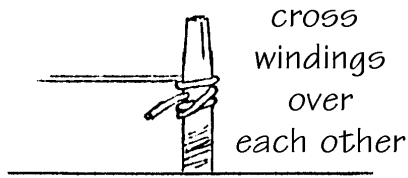
____ **23.** When you come to the .050" and higher strings, tie a knot in the end to hold the string inside the soundboard. Start with a simple overhand knot, but before tightening it, push the loose end part way back into the knot, just to add one more thickness of string to the knot, as shown.



we like to put a tiny drop of Superglue on top of each knot to bind the nylon to itself a little. This will save you much tuning frustration later on.

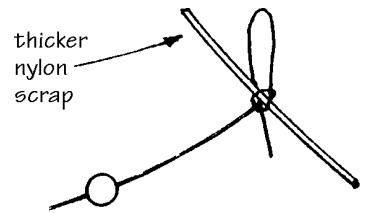


____ **24.** For the rest of the strings (sizes .040" and higher), thread a small plastic bead onto each string before tying the knot. The bead will prevent the knotted string from pulling through the hole in the **SOUNDBOARD**.



ANOTHER HINT: We also like to anchor the tops of these lighter strings securely to the tuning pins, as follows: Make one or two windings of string around the tuning pin, then cross the next winding over the others so the string is holding itself tightly around the **PIN**. Otherwise you could experience string slippage and breakage at the tuning pins, especially in the upper half of the instrument.

CAUTION: Nylon strings are somewhat fragile, especially in the upper octaves. Try to avoid scratching them as you install them. Most string breakage occurs at the tuning pin, when the string is pulled forcefully around the sharp corner of the small hole in the metal. You can minimize the problem by installing the string carefully and by anchoring (crossing) the windings before applying too much tension to the strings, so the nylon does not begin to slip back through the hole under tension and become weakened.



____ **25.** When you come to the lightest strings (.025" diameter), you will need to add a short piece of heavier string into the knot in order to make the knot bulky enough to keep from pulling through the hole in the plastic bead. Just use some scraps of excess nylon from the bottom strings.

When all the strings are installed, tighten them to pitch and allow the instrument to adjust itself to the tension.

TUNING

The strings should all be tuned to the natural C major scale (white keys on the piano). All the red strings will be C notes and the blue ones F notes. Middle C is string number 19 from the top, or the eighth string from the bottom.

Many people are not certain if they are tuning their harp strings to the correct octave. Tuning the strings an octave too low will result in flabby harp strings that don't provide much volume. Tuning the strings too high will cause strings to break. To make sure you are tuning your harp strings to the correct octave, you can double-check the pitch on our website with our "online tuner".

www.harokit.com/freetuner

NOTE: It will take several tunings before the harp will stay in tune. Be patient! It should get better each day.

CONGRATULATIONS! We hope you have enjoyed building this harp and that you enjoy many years of musical pleasure from playing it. We stock a good number of teaching materials and accessories for your instrument to help you get started. Just call us for more information or for placing an order.

ACCESSORIES FOR YOUR HARP

LIMBAG	Padded gig Bag for Limerick harp
BONES C or W	Knee Bones to help hold the harp on your lap
CA-30	Chromatic electronic Tuner
TUNERCORD	External pickup & cord for tuner

See Website or Catalog for Current Pricing

SHARPING LEVERS

Sharping levers are used on folk harps to facilitate key changes. Installing a lever at a string allows you to raise the pitch of that string one-half step by lifting the handle. Thus an F-string can be raised to F# by a simple flick of the lever. Similarly, a B-string may be tuned to Bb so that the lever will raise it to B-natural and release it back to B-flat, as needed.

Most folk harp players set the key signature (sharps or flats) on the harp before starting each piece of music. For the key of G, you would engage the levers on all the F strings to produce the F# notes needed for that key (making sure all other notes on the harp are natural). If the following piece were then to be played in the key of F, you would then release the levers on all the F strings to produce F-natural, and also release all the B-string levers to produce Bb.

You may install a lever at every string on the harp, or, if you think you won't use all of them, it would be more cost-effective to select which keys you think you are most likely to use, and then install only the levers necessary for those keys.

KEY OF E:	requires F# and C# and G# and D#
KEY OF A:	requires F# and C# and G#
KEY OF D:	requires F# and C#
KEY OF G:	requires F#
KEY OF C:	requires no sharps or flats
KEY OF F:	requires Bb
KEY OF Bb:	requires Bb and Eb
KEY OF Eb:	requires Bb and Eb and Ab

Please see our website for current Sharping Lever pricing and availability:

LIMERICK LAP HARP -C TUNING

(C3 to G6) code: **limstrg**

FULL SET OF 26 OPTIONAL STRINGS

STRING	NOTE	GAUGE	CODE	COLOR	VIBRATING LENGTH	LOVELAND LEVER SIZE
1	G6	.025	NYL025	clear	3-3/4"	00
2	F6	.025	NYL025	blue	4-3/8	00
3	E6	.025	NYL025	clear	4-7/8	00
4	D6	.025	NYL025	clear	5-1/2	00
5	C6	.032	NYL032	red	6-1/8	00
6	B5	.032	NYL032	clear	6-3/4	00
7	A5	.032	NYL032	clear	7-3/8	00
8	G5	.032	NYL032	clear	8	0
9	F5	.036	NYL036	blue	8-5/8	0
10	E5	.036	NYL036	clear	9-1/4	0
11	D5	.036	NYL036	clear	10	6a
12	C5	.040	NYL040	red	10-3/4	6a
13	B4	.040	NYL040	clear	11-1/2	6a
14	A4	.040	NYL040	clear	12-1/4	6a
15	G4	.050	NYL050	clear	13-1/8	6a
16	F4	.050	NYL050	blue	14	6a
17	E4	.050	NYL050	clear	15	9
18	D4	.040/.010	NYNY18D4	clear	16	9
19	Mid C4	.040/.010	NYNY19C4	red	17-1/4	9
20	B3	.040/.010	NYNY20B3	clear	18-1/2	9
21	A3	.045/.010	NYNY21A3	clear	19-3/4	9
22	G3	.050/.010	NYNY22G3	clear	21	12
23	F3	.050/.013	NYNY23F3	blue	22-1/4	12
24	E3	.050/.015	NYNY24E3	clear	23-1/2	12
25	D3	.055/.015	NYNY25D3	clear	24-3/4	14
26	C3	.055/.020	NYNY26C3	red	26	14

(Set includes one spare clear string of each monofilament nylon size)

NOTE: 15 beads enclosed for the upper strings

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LIMERICK LAP HARP

INSTALLATION INSTRUCTIONS FOR WIRE STRINGS

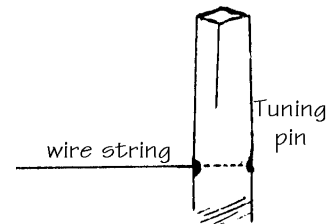
NOTE: Wire strings do not come with pre-colored C and F strings. Just install all the strings first, in proper order, and then use "opaque paint markers" from an arts & crafts store (like Michael's) to color the C strings red and the F strings blue. These paint pens give the most vivid color we have found for wire strings. Keep the pens with the harp in case you need to touch-up the color in the future.

_____ **1.** Begin at the bottom of the harp with the longest string (.032" diameter). Thread a plastic bead onto the string first. Then poke the end through the **SOUNDBOARD** from the inside.

_____ **2.** Pull the wire all the way until the ball end is snug against the inside of the **SOUNDBOARD**. Then hold it taut up to the first **TUNING PIN** and clip off the excess length, about 3 inches beyond the pin.

_____ **3.** Hide the end of the wire in the hole in the **TUNING PIN** (so it barely shows on the other side) and begin turning the pin with your tuning wrench. Turn clockwise to wind the slack wire onto the pin. You should have enough slack to make about 3 full turns around the pin, but take care not to over-tighten it.

NOTE: This technique of hiding the end of wire inside the tuning pin prevents the hazards of pricking your clothing on the sharp points. It may take a little finesse but it will be worth the effort, as it is difficult to trim the wires very closely with a wire cutter.



_____ **4.** Proceed with the remaining strings, keeping them in order.

_____ **5.** Mark all F strings with a blue permanent marking pen, running the pen up and down the length of the strings from all sides. Do the same with a red pen for all the C strings, referring to the tuning chart to make certain you are coloring the correct strings.

_____ **6.** Tune the strings according to the tuning chart. It will require several tunings, as the **SOUNDBOARD** will respond to the added tension with each try. But it will settle down after a few days and begin to stay in tune nicely.

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LIMERICK LAP HARP -C TUNING

(C3 to G6) **WIRE** STRINGS code: **limstrgwr**

FULL SET OF 26 STRINGS

STRING	NOTE	GAUGE	CODE	COLOR	VIBRATING LENGTH	LOVELAND LEVER SIZE
1	G6	.010	BALL010	clear	3-3/4"	00
2	F6	.010	BALL010	blue	4-3/8	00
3	E6	.010	BALL010	clear	4-7/8	00
4	D6	.012	BALL012	clear	5-1/2	00
5	C6	.012	BALL012	red	6-1/8	00
6	B5	.012	BALL012	clear	6-3/4	00
7	A5	.014	BALL014	clear	7-3/8	00
8	G5	.014	BALL014	clear	8	0
9	F5	.016	BALL016	blue	8-5/8	0
10	E5	.016	BALL016	clear	9-1/4	0
11	D5	.018	BALL018	clear	10	0
12	C5	.018	BALL018	red	10-3/4	0
13	B4	.020	BALL020	clear	11-1/2	2
14	A4	.020	BALL020	clear	12-1/4	2
15	G4	.023	BALL023	clear	13-1/8	2
16	F4	.023	BALL023	blue	14	4
17	E4	.023	BALL023	clear	15	4
18	D4	.023	BALL023	clear	16	4
19	Mid C4	.025	BALL025	red	17-1/4	4
20	B3	.025	BALL025	clear	18-1/2	4
21	A3	.025	BALL025	clear	19-3/4	4
22	G3	.025	BALL025	clear	21	5
23	F3	.032	BALL032	blue	22-1/4	5
24	E3	.032	BALL032	clear	23-1/2	5
25	D3	.032	BALL032	clear	24-3/4	5
26	C3	.032	BALL032	red	26	5

(Set includes one spare string of each plain wire size)

NOTE: 26 beads (8mm size, clear plastic) enclosed for all strings

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