

## Chapter Two

### Creating, Buying, Borrowing or Stealing a Design

I think many folks are attracted to building their own harps so they can customize them. Luckily, there are many aspects of harp design that can be altered and still result in a nice instrument. Harp building is kind of a loose profession in that regard. For their first harp, most folks feel a lot of trepidation. Selecting a proven design can go a long way to soothe the troubled mind of a first time harp builder.

There are several ways to go about selecting a harp design. The best is to actually get your hands on a nice sounding harp and study it. In many metropolitan areas, you can contact the local folk harp society. Many hold harp circles that offer a great opportunity to sample the models out there. There are a handful of stores here in the United States that sell lever harps. These stores and some instructors maintain a fleet of rental harps that may include one of the instruments you would like to see. If you are buying plans, you may also want to ask the vendor if there is someone in your area that plays one of his harps, or even better, has built one. Internet groups can provide useful information on designs - sometimes with heavily biased personal opinions.

Some folks opt to build a small, simple harp for their first project - advantages include less string tension, lower materials cost, and smaller investment of time required to complete the project. As a proponent of quick and dirty prototypes, I think there would be fewer failed attempts if builders were willing to be realistic and shoot a little lower - not kill themselves trying to reach perfection on their first instrument.

Here are some details and commentary on the three options:

#### *Borrowing or Stealing a Design*

Some would argue this is the cheapest and easiest way to go - simply select a harp that you really like and then copy it. Many aspects of a harp's design are readily apparent. String spacing, length and composition can be measured with a few simple tools. Proponents of this approach point out that a successful harp also drew many of its best attributes from past models that its builder borrowed from his predecessors.

I think a careful copy of another harp can get close in sound - but even when they are made by the same builder, there will be subtle differences. There are a number of crucial design aspects that are impossible or very difficult to measure

too – the thickness and tapering of the soundboard for example. If the board is veneered, its composition, the thickness of the veneer can be hard to divine.

At one point, I was bothered by the possibility that others would try to copy designs I had put a lot of work into. After building the same model 3 or 4 times, I realized that these and other subtle distinctions in construction and design can collectively make a significant difference in how the harp will perform. These are the distinctions that make it very difficult to successfully replicate another builder's work. Some builders vigorously resent plagiarism. I think they are fretting needlessly. I have found it flattering when I find someone thinks well enough of my design to copy it.

If you are going to copy a harp and *sell it* commercially, you really need to be careful – an offended harp builder may file a suit.

Often, professional builders are using tricky jigs, specialized equipment, or materials to make their harps – make sure you study and understand the joints; how/whether they reinforce specific parts and note the materials they use. I found out the hard way that nice fir ply wood from the hardware store is no substitute for the plywood most builders use to make thin swoopy necks. Plywood harp necks are usually built from piano pin block stock or die makers ply – for good reason.

### *Creating a design*

Creating a design from scratch is a significant challenge. Most designers start with a string band. Joseph Jourdain and others have developed computer programs that can help a builder explore possible string bands. Dan Cady's HyperHarp can even generate the coordinates for most of the harps strings and hardware. In order to convert a string band to a complete design, the builder needs to carefully think about the stresses in the harp, how strong the different parts need to be, and how these in turn affect the harp sound. If it is double or cross strung harp, you should try to talk to someone who has built one too.

It is important to plan ahead. I use a CAD program and spreadsheets to map out string spacing and locations, along with offsets for placing bridge pins, tuning pins, joinery, levers, eyelet locations and soundboard deflection. Jerry Brown sells a string spacing template along with a guide that would allow a layman to draw a harp design using the MusicMaker's guide, *Folk Harp Design and Construction*.

Finally, I have included the checklist I use to evaluate a new design in the appendix. You may find this useful in your design efforts.

### *Buying a Design:*

Here in the United States, you can buy plans and kits from outfits like Stoney End, MusicMakers, Cambria, or John Kovac. Some builders may also be willing to sell plans for their own designs. Robinson's harp shop is the oldest establishment and has been selling plans since '60's and 70's. Some harp builders are willing to sell plans for their harps. Some once offered plans or kits but no longer do so.

If you are going to buy a design, here are some questions you may want to ask:

- Are these just blue prints, or does it include some instruction on the building procedure?
- How detailed is the instruction manual - does it include diagrams and pictures? When was it last updated?
- What kind of support will be provided if I get stuck or need help?
- Do the plans include a materials list, or list of suppliers?
- Do they offer hardware kits for the design?
- Do they include full size templates for locating pins on the neck or eyelets on the soundboard?
- What kinds of skills and tools does the designer assume the builder will have?

When I began to offer plans for sale I found it could take hundreds of hours to produce clear, readable plans and a manual which clearly and concisely detailed the assembly process.

Most designers are willing to provide some free advice on minor design changes. But the time to ask about this is before you buy the plans. Builders should understand that many designers may be reluctant to continue that level of support after the harp builder has decided to make significant departures from the design he bought.

Once you have selected or created your design, it is time to begin the sound box.