

DO-IT-YOURSELF LUTE CASE

With possible applications towards cases for other instruments

The aluminum lute case was inspired by my need for stronger, lighter instrument cases, and ones that would hold 2 and 3 instruments. This writer engages in extensive travel, carrying 4 and more instruments, and after experiencing damages too many times to expensive cases of traditional materials decided on aluminum. Aluminum is lightweight and resists piercing by sharp objects (a favorite form of torture to musical instruments by the airlines). It also can withstand a luggage crew's big foot in the middle of it without damages inflicted to the contents. Also, when a luggage handler lifts the cases and finds them so light, he truly believes the contents are actually delicate (anything that is delicate must be light weight, right?). The average luggage crew person treats heavy cases roughly no matter how many warning signs are pasted on them.

If only a single case is needed for around-the-city lute carrying, there are some very nice fiber glass cases available from makers in England at quite reasonable prices. These are very light weight, having thin materials and not very thick padding. I would not want to trust one to an airline luggage "pit," for a foot accompanied by a person's weight in the middle of the top of one of these would spell doom to the instrument inside (though one could strap wooden reinforcing to the outside of the top for an air trip), and the padding is so thin that there is neither much shock absorbing quality nor insulation. For air travel, it is wise to have enough insulation so that the instrument(s) cool off slowly and warm up slowly (do not ever open an instrument case immediately upon landing if the instrument has been in the luggage "pit" – wait at least an hour or two to allow gradual warming up of the instrument). While luggage "pits" are pressurized, they do get very cold.

For lots less money than the fiberglass case, a Do-It-Yourselfer can make a rather nice light-weight case for normal usage from chip board (a paper product that is used for making inexpensive guitar, ukelele cases, etc.). Chip board molds very easily with dampening and holds its new shape after drying. The same method of pattern making can be used for the chip board case as is described for the aluminum case below. Seams can be secured with fabric and white glue, and the entire outside covered with Keratol (that's what is used to cover commercially made cases) for a handsome appearance.

However, if you intend much travel on public transportation, experience warns that, so far, aluminum has been the most successful. (A fiberglass case of equal strength is heavier). If two instruments are normally carried, one double case is not only more economical to make (costing a bit less than one single lute-shaped case), but only takes one hand to carry rather than two and has room also to strap-in accessories and a few clothes.

Travel cases for gambas, vihuelas, and Renaissance and Baroque guitars can also be made from aluminum very easily since their shapes are simple. Double cases for these instruments are even easier to fit on the inside than for lutes, though this writer can use her cases fitted out for lutes to carry combinations of lutes, vihuelas or guitars and can even put 3 instruments into one of the cases.

To make the aluminum case, unless you work sheet-metal and have a shop, you'll have to look up a sheet-metal man (try the Yellow Pages if you don't know where to begin). Take this article with you. The aluminum stock used on the cases in the article is one-sixteenth inch thick. The double case is less expensive since there is less work involved and less welding can be used. It will probably cost \$90 to

\$100. Welding of aluminum is very costly, so the more riveting, the less cost (the joins can be made water tight on the inside before lining with silicone rubber sealer). On the single case in this article, one sees all the joins are welded. This is a very small alto lute case. It would be easier to rivet more joins on a normal tenor size case.

HINGES – continuous aluminum hinge sold by the foot in hardware stores (piano style hinge).

LATCHES – for the double case I prefer aluminum footlocker latches found in most hardware stores (see photos). These latches can be secured from opening accidentally with lanyard hooks or small locks. For the single cases, I prefer normal instrument case and luggage latches (plated brass) which come with and without built in locks. I acquired these latches from a Luggage Findings wholesaler when I found the price for the style I wished, outrageously expensive from luggage repair shops (which very few even had in stock, anyway). Unfortunately, the normal individual can't purchase these wholesale and the minimum quantity is a bit more than most people need. Since I could buy three dozen for not much more than the price of three at the luggage repair shops, I did. (See photos of single lute cases).

HANDLES – luggage handles are readily available at hardware stores. The sheet metal worker will ask you to supply handles to him. Sometimes a shop will already have the hinge, but not the latches and handles.

THE SINGLE CASE – be prepared with your pattern before you go to the sheet metal shop. Making your own pattern will save you at least \$100 in labor costs. If you make your shell from chip board, the same pattern will work.

Case Top

1. Place lute face down on large, stiff paper and outline.
2. Increase outline by one inch all the way around to allow for one inch of padding. Less if thinner padding wished.
3. Be sure to allow for angle of head in over-all length of this pattern and allow for more than one inch increase along neck sides. *Figure 1.*
4. Cut this pattern out, fold in half and make sure halves match exactly. *Figure 2.*
5. Measure with flexible tape measure the outside distance from *a* to *b* in *Figure 2.*

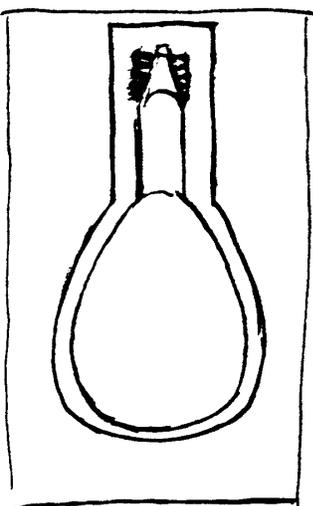


Figure 1

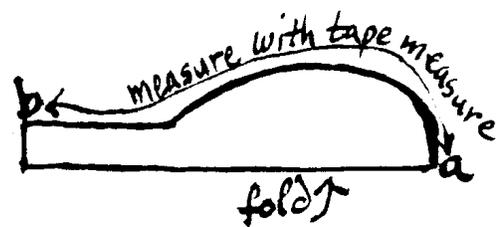


Figure 2

Case Sides

6. Measure on a straight line the distance from a to b on to the paper. We refer now to these points as a' and b' . Place neck end of folded top pattern at point b' on paper. Point a of the top pattern will be some distance away from the point a' that you drew on the paper. Draw a vertical line from point a' as high as top pattern's widest point. Draw straight line from case top pattern to meet point c' . Outline rest of top pattern, measuring height of lute peg box, and angle, allowing padding room. Add one inch more padding space from b' to y and from a' to x . Join points y and x *Figure 3*.

7. This side pattern is for one side only and is used in the reverse for the other side of the case. The sides of the case can be cut in one piece, or in two pieces and joined with a seam at the end. The case in the photos is of one piece. The material for the sides should be cut larger than the pattern to allow for riveting and welding joins and for a folded over edge on top opening for strength (see photos).

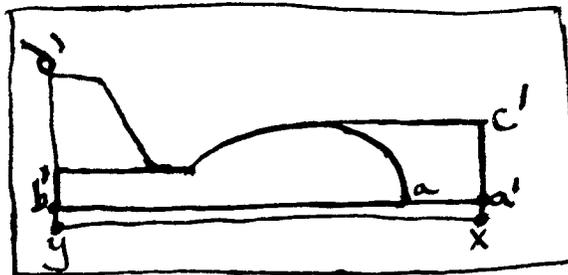


Figure 3

The Bottom

8. A bottom pattern can be made from the top pattern, extending the neck portion for enough length to extend all the way around to point y . *Figures 4 and 5*.

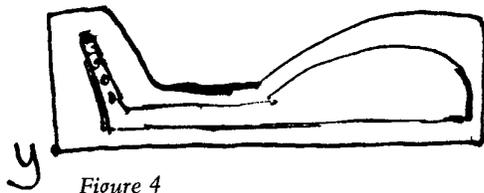


Figure 4

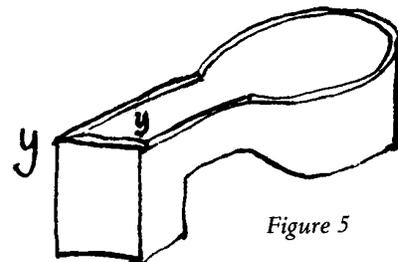


Figure 5

The Top

9. Draw a line on the top pattern across the widest point. *Figure 6*. The top will be made into two pieces and hinged at this point. The top material should be cut one inch larger all the way around than the pattern size. Cut the material at the line. The small portion shall be welded or riveted to the case. The opening portion is attached with aluminum hinge, but the extra one inch all the way around should first be formed to make a "lip" to extend over the outside of the case proper. *Figure 7*. When attaching the latches, some sheet aluminum shims must be used beneath the lower portion of the latch to bring the two halves flush. The handle is attached with rivets and a supporting piece of sheet aluminum should be added on the inside of the case.

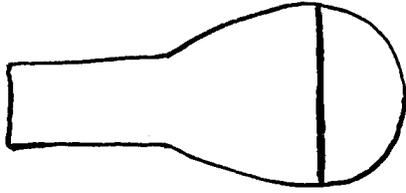


Figure 6

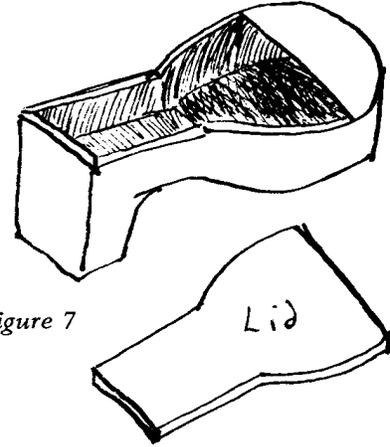


Figure 7

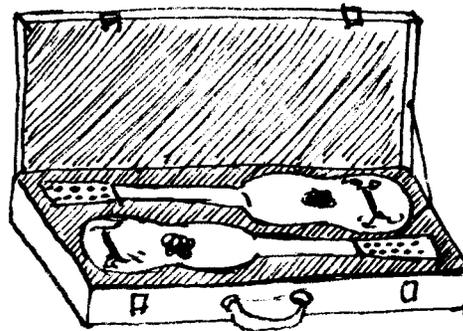
Padding

10. One inch Polyfoam works the best. Cut all pieces to fit inside the case. Your original case pattern will again help you here. Do not glue the padding inside the case yet, but make sure the pieces fit properly. Cut top padding one inch smaller all the way around than the lid so that it fits down inside the padded case to hold instrument securely. Do not forget to pad under the fixed portion of the top also. When all pieces fit correctly, cut fabric of your choice to fit each padding piece. Spray adhesives (as are used to fix carpeting to floors) can be used to attach fabric covered sections of padding to inside of case, or use contact cement. The only successful way to install lining is by covering each piece of padding as you go. A finishing piece of leather around the top aluminum edge of the case makes a tighter closing and pads the metal surface to avoid hitting the lute on it.

THE DOUBLE CASE – making a pattern is not necessary. Just having a rough sketch with dimensions is all that is necessary. Again, it will be helpful for the sheet metal man to see this article for the pictures, making the details of building easier and less time consuming.

Arrange your instruments in the positions you would like them to be in the case. (Lutes need to be strapped to case sides – see photos – though gambas and guitars can be fitted with padding – *Figure 8*). Measure the outside dimensions, width, length, height, and add one inch all the way around to accommodate padding (don't forget space between instruments for padding, also).

Figure 8



The top should be two inches deep with a one inch crimp around the edges for strength.

The top edge of the case proper should be crimped inwards on quarter inch, that lip being three quarters of an inch high with a crimped fold over inwards of one half inch for strength on sides and front (see photo). The back edge of case and top are attached with continuous aluminum hinge. If the case is very large, reinforcing strips of aluminum should go inside the top along with a reinforcing piece under handle attachment, as well as reinforcing pieces inside the case at latch attachment points.

I round the edges (see photos). Those spots need welding, as do corner joins on crimped lips, but all else can be rivet joins. A length of aluminum chain to hold top open in upright position should also be added (photo).

Interior

Mark inside the case for leather strap attachment for holding lutes and accessories. Sand aluminum surface to roughen. Attach straps with contact cement.

Padding

Expanded Styrene (NOT Styrofoam) available from plastic manufacturing outlets can be purchased in large sheets in one inch thicknesses. Cut rectangular pieces to fit top, bottom and sides. Make holes for leather straps. Cut fabric to fit each piece, cutting openings for straps, also.

WARNING: Contact cement dissolves expanded styrene, so better not use it. The spray adhesives (The kind that attaches carpeting to floors is strong enough) do not dissolve styrene, however, and make attaching to case sides very easy. Double-stick plastic film tapes also work, but the spray adhesive holds more securely.

This writer uses all lightest weight materials possible. Fabric was selected by weight also. There are some very light weight fabrics with appealing naps on the market (used for ladies' house robes) which come in brilliant as well as pastel colors. Interiors are limited only by your imagination. With a little of this imagination you can fit your cases to handle various combinations of instruments.

For fitting gamba and guitar case interiors, polyfoam may be preferred for form fitting. For the larger double lute cases, the weight difference between polyfoam and expanded styrene is quite considerable, styrene being much lighter.

————— Donna Curry

