

15 STEPS YOU MUST TAKE WHEN MAKING A BOX -- skip these steps at your own peril.

PLANNING

- 1) Decide what the box will be **used for** -- Is it for storage, or shipping, or will it be displayed as a work of art? Something else? Perhaps it will be a gift box, or a toy? See a list of possible uses on pages 6 and 34.
- 2) Decide on the **style** of the box. See page 2 for a few basic styles.
- 3) Decide on the basic **construction materials** to be used -- including the adhesive and finishing materials.
- 4) Decide on the **size** of the finished box.
- 5) Decide on the basic **construction method**.
- 6) Decide on and assemble the **tools** you will need -- which of the following?
 - a marking tool -- so you can see where to score and cut
 - a scoring table and scoring tool
 - cutting tool(s)
 - a yardstick or tape measure
 - glue and/or tape
 - finishing materials
 - a drawing of a layout -- **don't start without a pattern -- except when using a "Boxmaker Originale" where a layout is not needed.**

- 7) Decide on the length and width of the sheet(s) of cardstock or corrugated cardboard you will use (they are called "**BLANKS**").

SETTING UP

- 8) Set up the **workspace**.
- 9) Cut the **blanks** to size -- see pages 4 & 5.

MAKING THE BOX

- 10) **Mark** the sheets to show the scoring pattern -- or write the scoring pattern on a separate piece of paper.
- 11) **Score** the sheets.
- 12) **Cut** the sheets in accordance with the design.
- 13) **Fold and glue** the box into the finished shape.
- 14) Apply the **finish** if there is to be one.

15) MAKE AND SAVE A TEMPLATE

It will save you all sorts of time and aggravation if you make and save a template for each box you make, marking it with the box size. Use that template when making future boxes. You can make the template out of the material you use for making the box.

For more durable templates -- use 1/16 to 1/8" thick hardboard or sheet plastic.

A BRIEF DISCUSSION OF THE 15 STEPS.

1) THE USE: It will probably be self obvious what the box will be used for. However, if you are making the box for someone else -- be sure to understand how they intend to use the box. For instance, If they are going to store valuable paperwork, you will probably want to use archival materials. If it is for shipping, you will want to be sure you know exactly what is to be shipped and how it is to be shipped so you can provide adequate protection.

If the material to be shipped is valuable and delicate, it may be best to pack a box-within-a-box, which is generally thought to be the safest packaging system.

2) THE STYLE: The style of the box will be determined by (a) the material to be shipped, (b) the size of the available cardstock and (c) the use of the box.

It is sometimes necessary to design around the available material size. In general, Regular Slotted Cartons (RSC boxes) are the most efficient, yielding the biggest volume for a given size sheet.

However, telescoping boxes made from trays are the best for storage where you will be opening the box for retrieving the contents from time to time. Telescoping boxes made from tray are also good for stacking -- particularly if the bottom and top of the box are the same depth -- because that guarantees a double wall throughout the box. See pages 4, 5 & 11.

3) THE MATERIAL: Your choice will generally be either paper, cardstock or corrugated cardboard. All come in various thicknesses. see page 29 & 38.

Material thickness

- We define **paper** as being .003" TO .006" thick (tissue paper is thinner).

- Paper from .006" to .012" thick is usually referred to as **cover stock or index stock** -- although it is often simply referred to as "cardstock".
- **Cardstock** is herewith defined as being paper with a thickness larger than 012". Most cardstock used to make folding boxes is between .0125" and .052" thick.
- **Corrugated cardboard** generally starts with a thickness of .045". The most common thickness for hand-folded boxes is about 5/32" thick. Thicker corrugated sheets are usually made by gluing multiple layers of corrugations and kraft paper together.
- **Glue gun or other adhesive**
- **Yardstick or other measuring tool:** This is needed for making layouts -- particularly to show where scores shall be made.
- **Vernier caliper:** This is needed for measuring the thickness of cardstock and corrugated cardboard. (see photo on page 29).
- **A metal straightedge:** for guiding cutting tools on straight lines
- **A pattern or layout** for the box being made. This is very important. If you start without a pattern, making a box becomes very difficult.
- A cutting mat

About 100 Billion pounds of corrugated cardboard is produced each year in the U.S. (source -- Statistical Abstract of the U.S.)

Cardstock and corrugated cardboard is a fairly cheap and plentiful material that has been underused as a construction material. Primarily, we think -- because it was hard to fold the material precisely. The techniques shown in this book tells how to overcome that difficulty.

The development of PVA water-based adhesives, both standard and pressure sensitive types, and double sided tapes are a boon to hand boxmaking -- because it was hard to join pieces together quickly before they arrived.

4) THE SIZE OF THE BOX: See the comment in #2 above. In general a box should be of such a size that the finished box and the contents weighs no more than 25 pounds.

See page 8 & 33

5) CONSTRUCTION METHODS:

See pages 3, 4 & 5

6) TOOLS NEEDED:

- **Scoring table:** A scoring table is needed for making boxes of cardstock. It is a flat surface with scoring slots into which the cardstock is forced to weaken the material in lines along which the material is to be folded. One small scoring table is available online (see page 5) but you will have to make your own scoring table for corrugated cardstock and large cardstock boxes. Fortunately, it is easy to make such a table. See page 30 & 31.
- **Scoring tool:** This is the tool that forces the cardstock into the slots on the scoring table. See page 29.
- **The square edge of a table:** This is all that is needed for crush-scoring corrugated cardstock -- see page 30 & 31.
- **Cutting tools:** (a) A tabletop paper cutter: either a guillotine type or a rotary cutter type, (b) a scoring table (c) A razor knife or (d) box cutter, (e) a serrated knife, (f) a good pair of scissors and (g) perhaps a hand-held rotary cutter.

7) PLANNING BLANK SIZES: See pages 4 & 5.

8) SETTING UP THE WORKSPACE: Many people will not be making boxes all the time, so it is worthwhile thinking about a system that can be stored easily and set up quickly when needed. You will need a place for the scoring table and tool storage. We use a 3' x 4' scoring table which we put up on easily storable portable sawhorses. A 3' x 4' table is probably the minimum size you need. See page 28 & 30

9) CUTTING BLANK SIZES: Everything starts with an accurate blank size. See page 4 & 5.

10) MARKING: This is a crucial step -- it must be done accurately before you start cutting.

11) SCORING: See page 26 to 29.

12) CUTTING: See #6 previously.

13) FOLD AND GLUE: Use a hot-melt glue gun or any gluing method.

14) APPLY A FINISH: This book does not cover all the finishing and embellishment details that can be applied to boxes. Many of the books listed on page 35 have information on finishing techniques.

15) MAKE AND SAVE A TEMPLATE: This is something that is easy to ignore -- **BUT IT IS VERY IMPORTANT TO MAKE AND SAVE A TEMPLATE FOR EVERY BOX YOU MAKE.** Be sure to clearly mark the size of the box on the template. The templates can be made out of the same material you used for the box.