

**Virginia Arts of the Book Center  
Charlottesville, Virginia**

## **Window-Format Carousel Books**

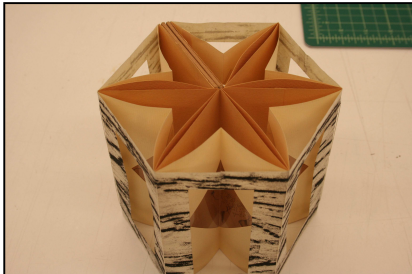
**Workshop taught by Barbara Payne  
July 24, 12:00 noon – 5:00 p.m.**

### **Making a Window-format, Continuous-fold Carousel book**

Carousel books (or star books) are multi-layered constructions that fold flat like a bound book but can open either full length or into a circle to create a set of “scenes.” The structure became popular in the 1920s and 1930s for children’s books and was revived by book artists in the 1980s. The popularity was also affected by renewed interest in pop-up books since the 1990s.

Carousel books are designed as a set of segments, with the most popular being five-segment and six-segment formats.

When seen from the top, a carousel book opened into a circle looks like a star:



Carousel book opened into a circle and viewed from the top, showing the basic structure

(book made at Penland School of Crafts, Summer 2010)

Each segment presents a “scene” or image” that is created by cutting out parts of the front and middle panels to create three-dimensional images.

Carousel book opened into a circle, showing the 3D effect of the segments

(book made by Barbara Payne, 2006)



The book can be constructed in several different ways. The workshop is designed for the *continuous accordion structure*.

## Constructing a six-segment carousel book using continuous accordions

**Note:** These instructions are for the construction only and do not cover the subsequent design to create the 3D scenes in each segment. The scenes are created by cutting out parts of the front panel and middle panel of each segment. The back panel is not cut. Items (graphic images; decorative papers; flat objects) may be glued to any of the three panels to create desired effects.

An accordion-style carousel book is made of a back strip, a middle strip, and a front strip. The back strip forms the base of the book; the front strip forms the “window” through which the scene is seen, and the middle strip adds depth between the front and back strips.

*Diagram of a 6-segment carousel book opened into a circle, viewed from the top*

This carousel book has six segments made up of six equilateral triangles (all three sides are the same size); when opened into a circle, each segment covers  $60^\circ$  ( $360^\circ \div 6 = 60^\circ$  each).

- In the example used in the workshop, each side of these triangles will be 5” wide.
- The height of the book can be whatever you choose in order to create the effect you want for your segments. In the workshop example, it will be 5”.

A carousel book is created by making three folded strips that will be nested and glued or stitched together to create the finished book. The basic steps are

1. Create the back, front, and middle carousel strips
2. Design and create the “scene” in each segment by adding cutouts and adding decorative items
3. Assemble the carousel strips and glue or stitch them together
4. Cut and cover book covers; glue the strips’ end tabs to the book covers
5. Add closures to hold the book open in circle (if you intend to display it as a circle).  
*Note: The closures need to be worked into the plans for covering the book covers.*
6. Consider final additions to finish the book

### 1. Making the three carousel strips

**Note about paper used for the workshop example:** All the measures for the workshop example are based on using Canson Mi Teintes paper, which is 19”x 25” and is grain short. (Grain short means that the paper grain runs down the long length of the paper; therefore, strips must be cut across the short dimension of the paper so that folds will be with the grain.) Because the cuts must be made across the short side, the longest strip possible is 19” wide.

It has a front (nebbly) and a back (smooth) side. Pencil marks should be made on the back side whenever possible.

## **A. Making the back carousel strip**

*Calculate measurements for the back strip.* The finished back strip is a long strip of paper folded into an accordion. It will have 12 panels (to make the six segments), plus a tab at *each* end.

For the workshop example, the back strip is 70" wide, including a 5" tab at *each* end. The height of the strip is 5". It will be made from five shorter pieces.

*Cut the pieces for the back strip.* Cut five pieces:

- Four of the pieces will each be 16" wide; each one will have three 5"-wide panels plus a 1" tab on the right end as you face the piece.
- The fifth piece will be 10" wide and will have two 5" panels (it will not have a tab).

### *Back strip pieces and the full back strip*

*Fold the pieces.* Measure and mark off the three 5" panels and the 1" tab across the top and bottom of the paper strip of each of the 16" pieces; put the tab on the right side of the piece. For the 10" piece, measure and mark off the 5" panels across the top and bottom. Fold each piece into an accordion, using a bone folder to score, crease, and smooth each fold.

*Glue / attach the sections.* Glue (or attach with two-sided tape) the five pieces together to create the full, 70"-wide back carousel strip. The finished strip will have 12 5-inch panels plus a 5" tab on *each* end.

## **B. Making the front carousel strip**

*Calculating measurements for the front carousel strip.* The front strip is half the width of the back strip and will be folded into 12 panels plus tabs at *each* end.

For our workshop example, the finished front strip will be 35" wide, including the 2-1/2" tab at *each* end. The height of the strip is 5". It will be created by gluing together two shorter pieces.

*Cut the pieces for the front carousel strip.* Cut two pieces:

- one is 18-1/2" wide and will have seven 2-1/2" panels plus a 1" tab on the right end as you face the strip
- the other is 17-1/2" wide and will have seven 2-1/2" panels (it will not have a tab).

### *Front strip pieces and full back strip*

*Fold the pieces.* Measure off the seven 2-1/2” panels—and the 1” tab on the 18-1/2” piece—across the top and bottom of the strip; the tab is on the right end of the 18-1/2” piece. Fold each piece into an accordion, using a bonefolder to score, fold, and smooth each fold.

*Glue / attach the sections.* Glue (or attach with two-sided tape) the two folded pieces together to create the full 35” front strip, including a 2-1/2” tab on *each* end.

### **C. Making the middle carousel strip**

*Calculate measurements for the middle strip.* The middle strip must be less wide than the back strip and wider than the front strip. The finished middle strip will be folded into 12 panels plus tabs at *each* end.

For the workshop example, the finished strip for the middle panel will be 49” wide, including 3-1/2” tabs at *each* end. The height is 5”. It will be glued together from three shorter pieces.

*Cut the pieces for the middle carousel strip.* Cut three pieces:

- two pieces will each be 18-1/2” wide, each with five 3-1/2” panels plus a 1” tab on the right end as you face the strip.
- one piece will be 14” wide, with four 3-1/2” panels (there will be no tab)

### *Middle strip pieces and full middle carousel strip*

*Fold the pieces.* Measure and mark off the 3-1/2” panels and the 1” tab across the top and bottom of each 18-1/2” piece. The tab should be on the right end of the piece. Measure and mark off the 3-1/2 panels across the top and bottom of the 14” piece. Fold each piece into an accordion, using a bonefolder to score, fold, and smooth each fold.

*Glue / attach the sections.* Glue (or attach with two-sided tape) the three folded sections together to create the full 49” middle strip.

## **2. Create the “scenes” in each segment**

Plan, design, and create the cutouts for the front and middle strips. Glue (affix) design/decorative items onto the back panels and/or the other panels.

## **3. Assemble the three finished strips into the book structure**

Assemble the three strips and glue or stitch them together at the fore-edge of each fold.

If stitching them, create a jig or template for punching sewing holes in the stacked fore-edges; punch the holes with an awl. Usually two holes are adequate; the spacing should be whatever is pleasing for the height of the book. Use waxed binding thread to sew the three strips together at the fore-edge, tying off the thread on the inside (hidden from view).

Glue the end tabs of the three panels together. (If desired, this step can be done when gluing the accordion structure to the covers.)

## **4. Cut and cover book covers (front and back)**

Make the covers approximately 1/8” wider and taller than the assembled carousel structure (now glued or sewn together).

Cover the cover boards with cover cloth or decorative paper, cutting the cover paper 1” larger on each side than the folded carousel.

For example,

if the folded structure is 5” wide X 5” high

each cover paper should be 7” wide X 7” high

*Note 1:* Before gluing cover paper to covers or gluing the accordion to the covers, make any adjustments necessary to accommodate closures that will be used.

*Note 2:* Two-sided tape can be used instead of glue for the following steps; if so, no drying time is needed.

Glue the paper to the cover board, folding and mitering the corners; put under weights and dry (15-20 minutes for PVA glue; up to an hour for PVA-methyl cellulose mixture).

Glue the end tabs of the three strips together, if they were not glued when the folded strips were glued or sewn together.

Glue the end tabs to the covers.

Glue lining paper to the inside covers.

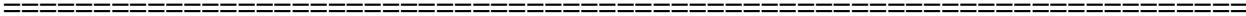
Add any titles or decorations to the front cover.

**5. Add closures, if any**

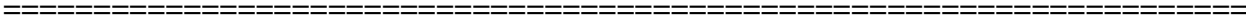
Most closures that involve ties will need to be integrated into the gluing process. Closures that are affixed to the outside of finished covers can be done as a final step.

**6. Consider final additions**

Add your bookmaker’s mark or your name, the date, and any other desired publication information to the inside back cover, either directly onto the lining paper or on a label glued to the inside cover.



**Paper used for workshop example.** The basic paper used for the workshop will be Mi Teintes by Canson. It is 60% rag, 98-lb, pulp-dyed paper with a rough texture (one side is smoother than the other) and is acid free and meets archival standards. It is widely available in local art supply stores and online.



Handout prepared by Addeane Caellegh (asc8f@virginia.edu) and Barbara Payne for the Book Making Group at the Virginia Arts of the Book Center, July 2010.

<p><b>Virginia Arts of the Book Center</b>  977 Second Street SE, Charlottesville, VA 22902</p> <p>The Virginia Arts of the Book Center, a program of the Virginia Foundation for the Humanities, is devoted to the art and craft of printing, print making, and book arts. The VABC operates a working studio and print shop open to members and the community.</p> <p>Public hours: Saturdays, 1:00-5:00 p.m.; Block Night (block cutting), Weds 5:30-7:00 p.m.</p> <p>Annual dues are \$120 per year, \$65 for six months.</p> <p>For more information about the VABC and its programs and classes, see <a href="http://www.virginiabookarts.org">www.virginiabookarts.org</a>.</p>
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