



CLASSROOM CONSTRUCTION OF RELIEF MODELS

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The construction of relief models as a classroom activity is probably as old as the study of geography itself. Who can not remember dubbing in paper mache, modeling clay, plaster-of-paris or some other goop (and loving every minute of it) in their school classroom?

While the motivation for model making remains unchanged the materials and techniques for doing so have improved considerably. A professional technique for making terrain models in City Planning department is offered here. The advantage of the method is its accuracy and low cost. Youngsters with model airplane making skills (Junior High School or above) should be able to do the work with little difficulty.

The materials needed are:

- 1) Countour or topography map at a large scale (1" = 500' or 1" = 300').
- 2) Balsa wood strips (1" sq.)
- 3) Fiberglass screening.
- 4) Instant papier-maché.
- 5) White glue.
- 6) Pastel for shading hill slopes.
- 7) Spray can of green paint.
- 8) A firm board ( $\frac{3}{4}$ " or  $\frac{1}{2}$ " plywood) for mounting entire project.

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All materials are readily available at most hobby stores.

*Procedures for Construction of the Model*

First glue the contour map firmly onto the mounting board. After it has thoroughly dried, begin cutting balsa strips to pre-determined lengths. The length of the balsa strip depends on the scale of the contour map. By following the direction of the contour line and gluing the balsa strips in a vertical position periodically along the same contour, you will establish a constant height or elevation. As you repeat this with each 50' contour, the physical appearance of the peaks and valleys will begin to form. A vertical exaggeration of two to one proportion (plan scale of map to remain while the vertical distances are two times the plan scale) will give an optically, more true-to-life, appearance of the slopes.

After completing this step, the fiberglass screen is pushed down into the valleys and glued. It may be necessary to fold or cut the screen in "orange peel" fashion to fit into deep valleys. Work your way from valleys to peaks gluing at the ends of balsa strips. Staple the screen to ends of strips as well.

The next step is to cover the entire screen with papier maché. The maché is to be pushed into the openings of the screen. The application should be put on as smoothly as possible. Nevertheless, the mache can be sanded for an even finish. The mache must dry thoroughly before it is to be painted. The drying process may take a week. When completely dry, the surface can be

painted as time permits.

The finishing touch of shading slopes, or indicating streets with graphic tapes and perhaps titling, can add the final ingredient of a professional looking presentation model.

Fig. 1--Back side of completed hill area terrain model. Cardboard can be used to cover back and sides if desired.

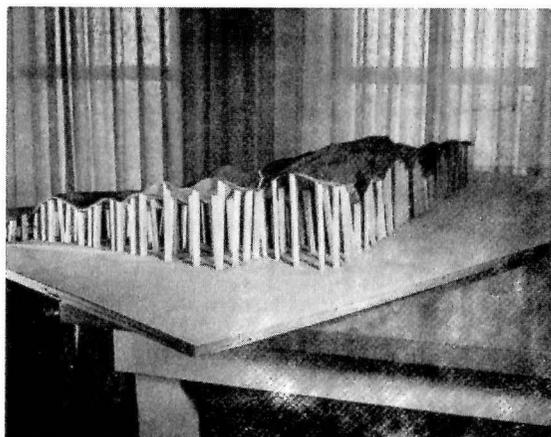
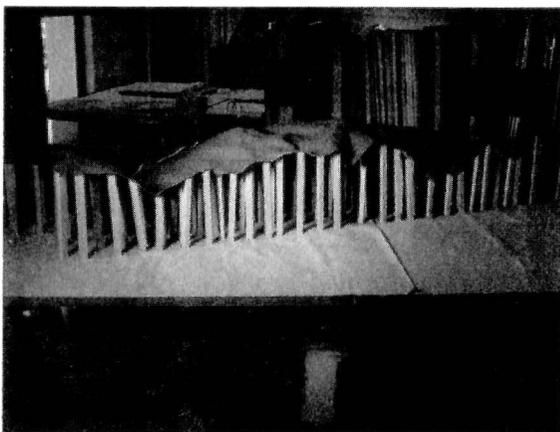


Fig. 2--Side view of hill area terrain model. Lowest point on model (to front) is the base board.