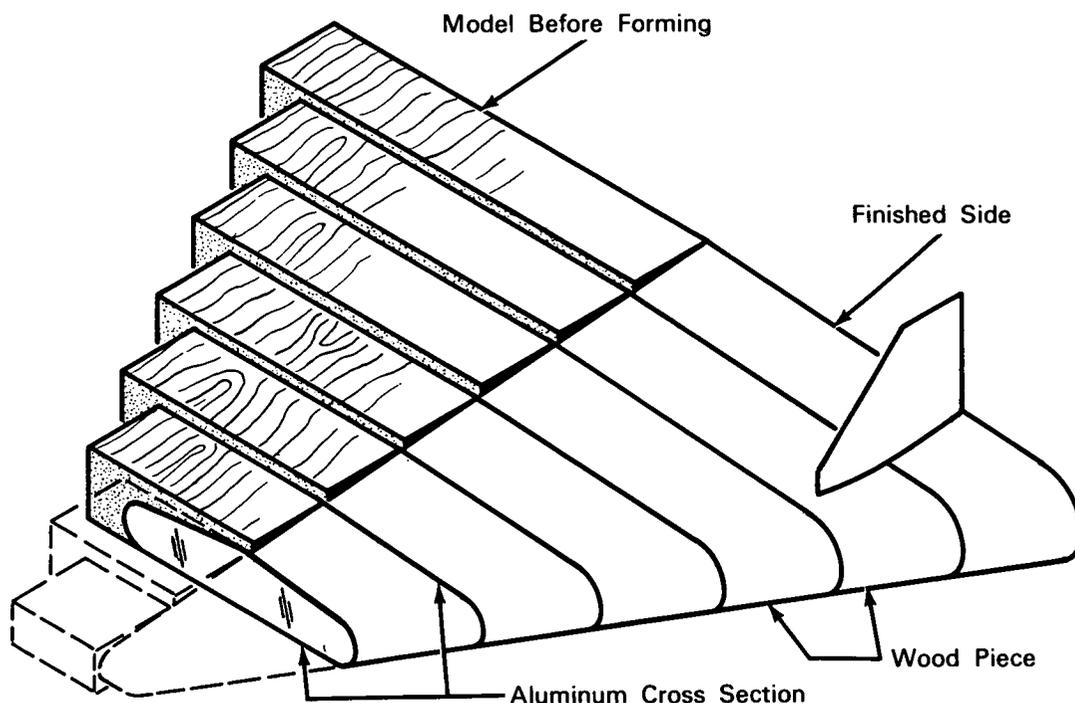


# NASA TECH BRIEF



This NASA Tech Brief is issued by the Technology Utilization Division to acquaint industry with the technical content of an innovation derived from the NASA space program.

## Built-In Templates Speed Up Process for Making Accurate Models



**The problem:** Reducing the time required to make an accurate, true-to-scale model needed for research testing or industrial needs. Testing of aircraft, ships, or rockets often requires quick construction of an accurate model in order to complete an experiment or cross-check research findings.

**The solution:** A method of "built-in" templates enabling rough shaping of the model to be done much faster. The aluminum templates, by acting as visible guides, also speed finishing the model.

**How it's done:** From accurate scale drawings of the model desired, a series of cross sections at selected points are made. Photographic negatives of the cross sections are prepared to the desired scale and printed on thin sheets of aluminum.

These aluminum cross-section images are cut out and mounted in accurate alignment, and mahogany blocks of the proper dimensions placed between the cross sections. Grain of the wood should run with the longitudinal axis of the model. Now the model maker

(continued overleaf)

can work down the wood using the aluminum as a built-in template. Both roughing down and finishing can be accomplished with a saving in time. Accuracy is good if the metal plates are not damaged.

**Note :**

This process is particularly suited to laboratory or manufacturing requirements for a single model or a few models. A wood model made in this way can be used as a master for casting metal or plastic models,

a test model in a wind tunnel, or a master model for duplicating a design on metalworking machines.

**Patent status:** NASA encourages commercial use of this innovation. No patent action is contemplated.

Source: Model Making Branch  
Langley Research Center (Langley-23)