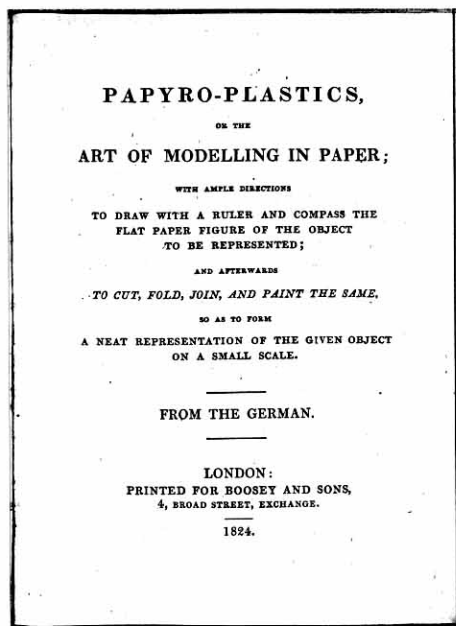


# Card Model Design: Part One Radial and Parallel-Line Developments and the Creation of the Model "Little Boy"

## History

Although most modelers now build commercially printed kits, the first literature on card modeling presumed that the reader was interested in building "one-off" or "scratchbuilt" models. Heinrich Rockstroh's German-language primer (1802) and Daniel Boileau's loose translation into English (1824) are as much practical treatises in three-dimensional geometry as they are "how-to" guides for the would-be paper modeler. (See title page below.) In fact, these books predate all but the most rudimentary published paper model kits. They show that the desire to design is as much at the heart of our craft as is the wish to build.



The doing is the art, the result is the artifact.

These articles are about the math and logic of designing paper models. They are written with the manual draftsman in mind, yet all of the methods outlined are equally applicable for work on the computer. I will attempt to point out specific digital solutions to the problems where applicable.

## Overview

I will take you through the development of the CardFormation model "Little Boy." I begin by defining some terms, present some essential stretchout formulas, talk briefly about the aesthetic decisions involved in crafting a pattern, and then work through the major forms step-by-step. After that I will give you the raw information for the "Fat Man" nuclear device so that you may put into practice all that you've learned by creating your own kit. At the end of the article you will find a short list of books that will give more detailed information on engineering drawing and stretchout techniques.

## Materials

You will need some paper, a compass, a protractor, a straightedge, and a sharp pencil. (I use a mechanical pencil with 7 mm graphite.) A pocket calculator is also handy. If you are an experienced paper modeler, you already know much of the following. Further, please bear with me if some of the explanations appear *too* basic: I am simply trying to be thorough.

## Definitions

*Three-view drawings* are the building blocks of a card model design. They are illustrations that give the viewer three clear views of an object from the front, the top, and the right sides. More views may be given if they are needed to clarify information, but this is the standard American format. (In Europe the left side is commonly given instead of the right.)

