Introduction

From earliest history man's close kinship with nature has guided him toward a sense of proportion in the shaping of his world. Just as mathematics began with the measurement of objects and space, design began with the arrangement of objects in harmonious relationship to each other and to the space they occupied. The linkage of mathematical systems and design can be traced to the earliest cultures, and science and art have frequently found a common denominator in the search for perfect form throughout history.

Wherever plans have been called for in the building of objects, the division of areas, or the decoration of flat surfaces grids have been involved. Dictionaries define the grid as "a network of uniformly placed horizontal and vertical lines for locating points by means of coordinates." Grids were used by Renaissance artists as a method of scaling their sketches and cartoons to fit the proportions of monolithic murals. Grids are basic to cartography and for centuries military plans have been plotted on the coordinates of grids. Classic architects used grids to plot perspective and scale their plans. From the time of Gutenberg typographers have used grids to design letters and complete the makeup of the printed page.

The factors that distinguish a designer's grid from ordinary makeup sheets are the grid's regard for proportion and its compatibility with the solution to the design problem. There are two ways that the designer can bring mechanical form into harmony with those aesthetic considerations that help to determine the quality of a design. One way is through the use of his own natural and intuitive sense of proportion, and the other is through the application of certain systematic principles of proportion developed by mathematicians, artist-designers, and architects throughout the course of design history.

Most designers prefer to rely on their intuitive sense of proportion in approaching the design problem, but a knowledge of the principles of proportion can be useful in determining the correct division of the space within a layout and assessing the quality of the resulting design. For that reason a brief review of some of the most commonly used rules of proportion will precede and form a background for
Hermann Zapf, one of the world's foremost designers of typefaces and books, had this to say about contemporary bookmaking in *Homage to the Book*: "The time is not far off when the manuscript will be put into a reading machine which, via a computer, produces the information necessary for book production on paper or magnetic tape. The computer will also be programmed to correct automatically ... check the logic of thoughts ... and even translate a complete work into a foreign language. The automated machine works to the programmed instructions fed into it, putting in running heads, chapter headings, footnotes, captions, and subtitles ... performing other typographic chores. In this electronic future, the responsibility of the book designer will be even heavier. No longer will he be an unnecessary cost factor; he will direct the whole orchestra in which any false note means additional cost and loss of time."

These are not mere idle thoughts, but a recognition of the growing need for book publishing to examine current economic pressure in terms of future technological possibilities. Much of the hardware for this revolution is already beyond the prototype stage and the software is in research and development. Hermann Zapf and Aaron Burns, who is president of the International Typeface Corporation, have
er book grid designed by
ury Thompson for a collec-
tory for Poe's stories by Edgar Allan Poe.
ied lines for the unique central
typography.

3:5. This is a reasonably pleasant proportion, but a somewhat better proportion exists in French pocket books that are narrower in relation to their height and more nearly approximate the golden rectangle. With all the limitations that pocket books impose on the designer there have been some notable exceptions to the poor typography of most of these books. Jan Tschichold set a style for Penguin Books in England that resulted in clear and lucid typography, and the French book designers, with a long tradition of designing novels in small formats, still treat this page size with considerable respect.

The contemporary book serves many and varied purposes that influence the structure of grids and the shape of their design. Textbooks and educational books serve an expanding knowledge explosion that demands new visual treatment and new forms in bookmaking. Books published in a series must often work with a common grid or a grid adapted to serve an overall style, while also providing for the

The design of the spreads for Poe's *The Black Cat* effectively combines symmetrical elements within an asymmetrical framework.