

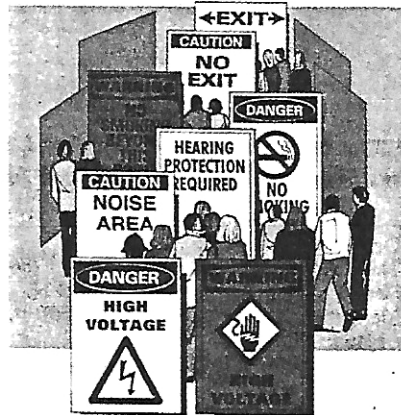
Wogalter, M. S. (1994). The sign maze.

[Book review: *The sign maze: Approaches to the development of signs, labels, markings, and instruction manuals*, by T. F., Bresnahan, D. C. Lhotka, & H. Winchell. Includes comment from authors.] *Professional Safety*, 39, pp. 45 & 55.

## The SIGN MAZE

Approaches to the Development of Signs, Labels, Markings and Instruction Manuals

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## BOOK REVIEWS

### THE SIGN MAZE

#### Approaches to the Development of Signs, Labels, Markings and Instruction Manuals

by Thomas F. Bresnahan, Donald C. Lhotka and Harry Winchell; American Society of Safety Engineers, 1800 E. Oakton St., Des Plaines, IL 60018-2187; phone (708) 692-4121, ext. 18; 1993, softbound, 70 pp., member price \$11.95, nonmember price \$21.00 (order #4346).

THE SIGN MAZE IS A GUIDEBOOK for individuals who produce signs and labels. The book reviews some decisions that must be made when using signs in hazard prevention programs.

The authors begin the first chapter by asserting that warnings are not the best way to control hazards and decrease injuries. First, attempts should be made to remove or design out the hazard. If hazard removal is not pos-

sible or practical, the second best method is to guard against the hazard to prevent contact with it. Warnings are a third (not as good, yet sometimes necessary) method of controlling hazards.

The book details the history of sign standards development in the U.S., culminating with the recently published 1991 ANSI Z535 Standards. The authors describe the components of signs, advising of some difficulties

that may arise when using the standards. For example, ANSI Z535 provides ways of communicating different degrees of potential personal injury, yet it does not provide such information for different levels of property damage. Also, some rules for warnings about environmental hazards differ from those for product-label warnings. The authors believe the rules should be more consistent.

The book's foremost weakness is that there is not enough here. For example, although the authors suggest that a sign's message should be clear and concise, and that warnings should be tested to verify their effectiveness, readers are not told how to accomplish these goals. Instead, they are informed that this testing should be done by human factors engineers or other qualified individuals—without mention of how to contact them.

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Too often, warning designers assume language used in a sign or label will be universally understood, when, in fact, only a few highly-trained individuals understand the message. Testing will indicate whether the sign is understandable to the targeted population. Given that testing is a critical aspect of sign development, it should have received more emphasis in *The Sign Maze*. (At least, readers should have been directed to literature on testing—more than 100 articles have appeared in *Proceedings of the Human Factors and Ergonomics Society*.)

The authors point out that sign messages should be concise, in part, to allow larger-sized letters, which allows the sign to be read at a safe distance from the hazard. However, no mention is made of visual angle (a measure based on height and distance of objects such as alphanumeric characters), which can serve as an objective guidepost on necessary size. Also, little is said regarding the compromise between brevity and completeness. A brief message may be inadequate to describe some hazards, while a complete message may be so long that few people read it. Cost of compliance, social influence, hazard

perception and familiarity, all known to influence overall warning effectiveness, also receive only brief (or no) mention.

An implicit basis of the book is pro-standardization. The authors argue that signs should be stereotyped to enable quick recognition that a warning (and thus a hazard) is present, and that consistent signs would consequently trigger reflexive avoidance reactions. Effects of standardization are less clear than the authors suggest, however. For example, people may become too familiar (habituated) with a constant sign format and style, and consequently, may not pay attention to warning signs.

*The Sign Maze* will benefit persons who produce signs. It cogently describes some key decisions required when trying to fulfill ANSI guidelines. For a concise, broad introduction to the area and useful insight on current sign standards, the book is an excellent source. However, because it does not address several key issues, the book does not answer all questions a sign developer may pose. Therefore, it cannot serve as a sole reference work on the topic.

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### Response to Wogalter Review

The authors wish to thank Dr. Wogalter for his thoughtful review of *The Sign Maze*. We do, however, have one major disagreement: The book's strength is that it does not cover everything in detail about signs. If we succeed in raising a reader's interest in the subject, he/she will be pointed in the right direction.

Also, the book does go beyond standards and standardization. It is, as the reviewer suggests, a "guidebook" for someone to produce (or buy) signs/labels. We applaud the tenacity of anyone who absorbs the Miller/Lehto books (three volumes) on signs or the 10 years of *Proceedings of the Human Factors and Ergonomics Society* (which deal almost exclusively with research, rather than application).

*The Sign Maze* is not intended to be the "sole reference work on the topic." It simply attempts to guide an individual through the "maze" of information generated over the years and to be able to make intelligent decisions on producing and/or buying signs/labels.

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