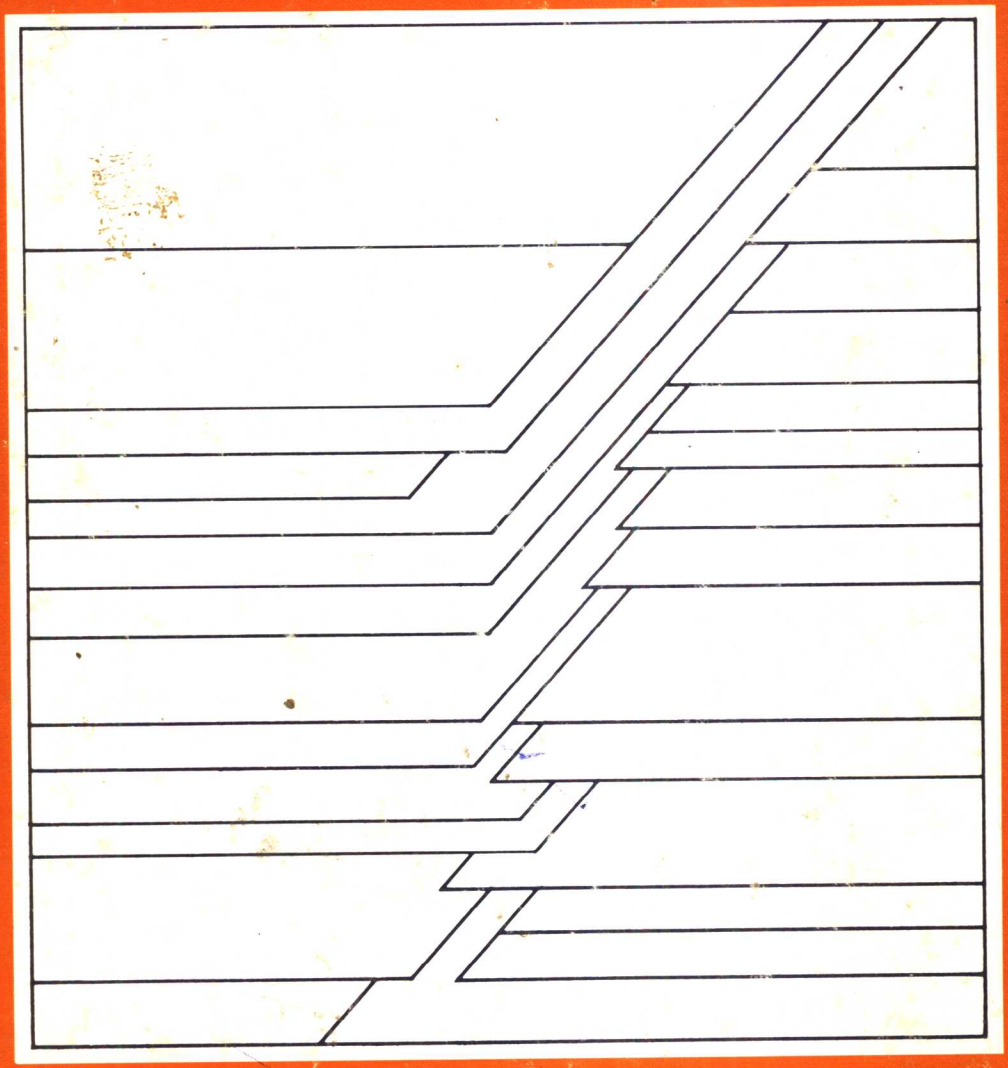
GORDON H. MILLS • JOHN A. WALTER

Technical Writing

Fourth Edition



Technical Writing

Fourth Edition

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Preface to the Fourth Edition

It is both a pleasure and an obligation to begin by remarking that in its successive editions the content of this book has more and more come to represent the experience, research, and generous counsel of many people. Although quite unanticipated, this support for our own efforts is something we have valued deeply. We are grateful for an opportunity to express publicly our awareness of the considerable degree to which, over the years, the character of the book has been formed by the cumulative advice and assistance provided by our co-workers. We can make such a statement about the sources of the content of the book without pretending to derive from these sources any claims concerning the quality of the book. Because all the help offered to the book had to be funneled through us, the book's faults—whatever they may be—are our faults. We should, therefore, say something about our objectives in this edition and about the problems encountered.

We had seven easily stated objectives: to provide fresh illustrative materials, to expand the number of fields included among the illustrative materials, to condense the text wherever that was possible without loss of clarity, to rewrite for enhancement of clarity wherever we could, to eliminate "sexist" language, to enlarge any sections that experience seemed to show were too hasty, and to reorganize the text in any way that, again, experience seemed to require. With reference to each one of these objectives, we have made extensive changes.

In the selection of illustrative materials, two special problems developed. One was whether certain "dated" materials should be discarded or should be retained because of their intrinsic interest. An outstanding example is the General Electric report on pages 191–212. (Comments we have received about the value of this report have led us to retain it.) A second problem had to do with the suitability of certain very simple pieces of writing. As a principle, we have tried to illustrate each sort of writing problem by presenting both a very simple example and one that is more complex. Sometimes opinions have differed as to the appropriateness of the simple example. We hope we have chosen acceptably.

A different but somewhat related problem was the determination of how many kinds of "reports" to consider. For example, should a discussion of feasibility reports be included? There seemed to us to be strong arguments on both sides concerning the problem represented by this instance. Without reviewing these arguments, we will simply say that we have listened carefully to advice and have chosen as thoughtfully as we could.

Only the passing of time has revealed to us how sexist the language of previous editions has been. We had not meant it that way; we are much in sympathy with the motives underlying feminist objection to an unvarying use of masculine pronouns. But we must confess that this problem proved a perplexing one. We tried hard, but the English language as written and spoken at this time does not yield easily to the necessary changes. A note on this problem appears on page 35.

The most stubborn problem of all has unquestionably been that of the overall organization of the text. Ever since the first edition was published, we have occasionally received thoughtful, detailed suggestions, in writing, for redesigning the organization of the text; and, in fact, we have in this edition accepted one such proposal, enlarging the "handbook" material and moving it to the Appendixes. We are sincerely grateful for all these suggestions, and if we could find a consensus among them concerning the fundamental organization of the book we would most certainly consider it. The changes that have been urged, however, tend to be in disagreement. They cancel each other out; we are left with a null reading. Nevertheless, we do not take lightly the suggestions we have been given. The important message they bear is that the organization of such a book as this is best determined by circumstances. Among the determining circumstances are, clearly, such salient elements as the kinds of students being taught, the instructor's background and personal orientation, the length of the school term, and the availability of supplementary aids. But, of course, the chapters of almost any textbook can be arranged at will, simply by appropriate ordering of the sequence of assignments. We urge that assignments always be adapted to individual class needs in this way. On the other hand, we do feel that the organization of the text as it stands is basically sound. We feel this to be true not only because of our own experience with it but also because of the degree to which the organization of this book has served a variety of needs in the field since it was first published.

Finally, we want to express our gratitude to the following people for their kind assistance with this edition. Although many of our obligations are expressed in the text, we want to acknowledge our special gratitude to Herman Estrin of the New Jersey Institute of

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Technology, John S. Harris of Brigham Young University, Thomas E. Pearsall of the University of Minnesota at St. Paul, James F. Jones of Austin, Texas, Donald H. Cunningham of Morehead State University, and all our friends and colleagues in the Association of Teachers of Technical Writing and in the Society for Technical Communication, especially those in the latter organization who generously responded to our request for fresh and up-to-date illustrations of the kinds of technical writing being done today. We wish, also, to express our appreciation to Vandolyn Savage and Richard W. Blood for their help with our discussion of library research. Frederick T. Van Veen of Teradyne, Inc., was particularly helpful with problems relating to the use of symbols and abbreviations, and Frank R. Smith of McDonnell Douglas Corporation has helped us through many informal discussions for more than two decades. And, of course, we remain grateful to all those who have helped us with the editions that preceded this one. Nor can we ignore the friendly and expert help—and prodding—we had from Harriett Prentiss, Susan Katz, and Lester Sheinis of Holt, Rinehart and Winston, not to mention those engaged to provide us with detailed and constructive criticism: Cortland P. Auser, Bronx Community College; Lynn W. Denton, Auburn University; Mary M. Engesser, Oregon State University; Margot A. Haberhern, Florida Institute of Technology; Jon N. Loff, Allegany Community College, Ronald B. Newman, University of Miami; Charles C. Smith, New Jersey Institute of Technology.

Most of all, we would like to thank Vody Mills. Acting as a kind of coordinator, she served both of us with great managerial skill, setting schedules, correlating our individual efforts, undertaking a variety of necessary tasks, and in general overseeing the putting together of the contributions from each of us. Without her skillful and cheerful assistance, we would never have been able to complete this fourth edition when we did—if ever at all. We are more grateful than words can possibly express.

Austin, Texas **G.M.**
November 1977 **J.W.**

Preface to the First Edition

This book had its inception in our need for a logical bridge between the professional writing of scientists and engineers and the content of a course for students of technical writing. Certain widespread practices had developed in such courses, as we knew both from personal experience and from such published studies as A. M. Fountain's *A Study of Courses in Technical Writing* (1938), the American Society for Engineering Education's report on *Instruction in English in Engineering Colleges* (1940), and M. L. Rider's *Journal of Engineering Education* article, "Some Practices in Teaching Advanced Composition for Engineers" (1950). We felt that many of these practices were unquestionably proving their value, but about others we weren't sure, and there seemed to be no clearly established basis upon which to decide about them. The difficulty was partly that the limits of the subject were uncertain; apparently nobody had ever seriously explored the concept of technical writing with the purpose of trying to say precisely what technical writing is. There were, of course, numerous systems of classification of articles and reports; but, unfortunately, these systems were dissimilar at many points and were often more puzzling than helpful in relation to our question of what materials and instruction were most needed by our students.

In an effort to find practical solutions to the problems just noted, as well as to others not mentioned, we undertook three investigations. We began by seeking examples of reports and articles, and expressions of opinion about important problems; altogether we incurred an indebtedness to over three hundred industrial and research organizations in making our survey. We also worked out, in writing, a theory of what technical writing is (later published as Circular No. 22 of The University of Texas, Bureau of Engineering Research, under the title, *The Theory of Technical Writing*). Thirdly, we studied the content and organization of college courses in the subject. The content of this book rests primarily upon these investigations, together with numerous other studies of a more limited scope. Perhaps it is proper to say here that these investigations did not constitute our introduction to the subject, since we had both had considerable experience in the field, in the capacity of teachers and editors. On the other hand, we did try hard to avoid letting the

particularities of our personal experience affect the conclusions we drew from these systematic studies. We realize, of course, that the nature of our own experience, both academic and nonacademic, has no doubt been reflected in our text; and if in spite of the good counsel and abundant materials furnished to us we have fallen into error, the fault is entirely our own. We do believe, however, that our methods have been sound; we hope that our book is sound too.

Perhaps we should add, about ourselves, that our collaboration has extended to all parts of the text. Almost every page of it represents a joint effort.

A few comments on the text itself need to be made here. As we said, the organization of the book was determined by a study of the needs and practices of courses in technical writing, as well as by the internal logic of the subject matter. One problem, however, resisted solution: we could not find any clear grounds on which to decide when to introduce certain elements of our subject that would not themselves usually be the basis of writing assignments. Section Three (Transitions, Introductions, and Conclusions) and Section Five (Report Layout) are chiefly involved, although the same difficulty exists with Chapter 3 (Style in Technical Writing). We have no pat answers as to how these elements should be introduced into a course. On the contrary, we believe that a suitable decision can be made only by the instructor.

We should also like to remark that we are aware we have sometimes been blunt in criticizing quoted materials. We hope all readers of the book will understand that these materials were not prepared especially for our use. They are, instead, routine products, and many of them were doubtless written under great pressure. We have been critical in order to help students learn, not because of any fancied superiority to the writers whose work we criticize.

We regret that a complete list of those organizations and persons who have helped us is too long to present here. We are deeply grateful to all of them, and we have acknowledged our specific indebtedness to many in the text. A few have requested anonymity. Our greatest single debt is to John Galt, Manager, Phenolic Products Plant, Chemical Materials Department, General Electric Company, Pittsfield, Massachusetts. Mr. Galt permitted us to quote the extremely interesting manuscripts in Appendix B. We should like to mention also The Civil Aeronautics Administration, Technical Development and Evaluation Center; and the Research Laboratories Division, General Motors Corporation. Dr. W. E. Kuhn, Manager of the Technical and Research Division, The Texas Company, deserves special thanks for repeated favors.

Austin, Texas **G.M.**
January 1954 **J.W.**

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SECTION 1

PRELIMINARY CONSIDERATIONS

Some topics are more obviously preliminary to a study of technical writing than others. Most obvious of all is the question of what the term "technical writing" means. In Chapter 1, therefore, technical writing is defined, its major subdivisions are designated, and some evidence is examined as to its role in science and engineering.

Closely related to the need for defining and subdividing the subject of technical writing is that of identifying what might be called its basic concepts. That is, can the practice of technical writing be reduced to a few general propositions? Probably not; on the other hand, five concepts about technical writing are so fundamental that recognition of them does help give perspective and meaning to later study of the many different aspects of the subject. These five fundamental concepts are presented in Chapter 2, which is limited to one short page of text.

The third chapter in this section is concerned with style. Of course the style of any piece of writing is an integral part of that writing and should not be thought of as preliminary to it. Nevertheless, style also reflects responses to a broad array of questions that present themselves the instant the writer picks up a pen. One of these questions, for example, is whether to seek a style permitting what is usually called self-expression, as opposed to concentrating

attention on the needs of the reader. The importance in technical writing of a number of such issues draws the subject of style into the area of preliminary consideration. Style is also given repeated attention in subsequent sections of this book, as occasion requires.

The fourth and last chapter in Section One is a review of the logic of organization, in the form of outlining and abstracting. This subject of the elements of organization is preliminary to a study of technical writing only in the practical sense that it is common to almost any study of writing and that in some degree it will already be familiar to any reader of this book.

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