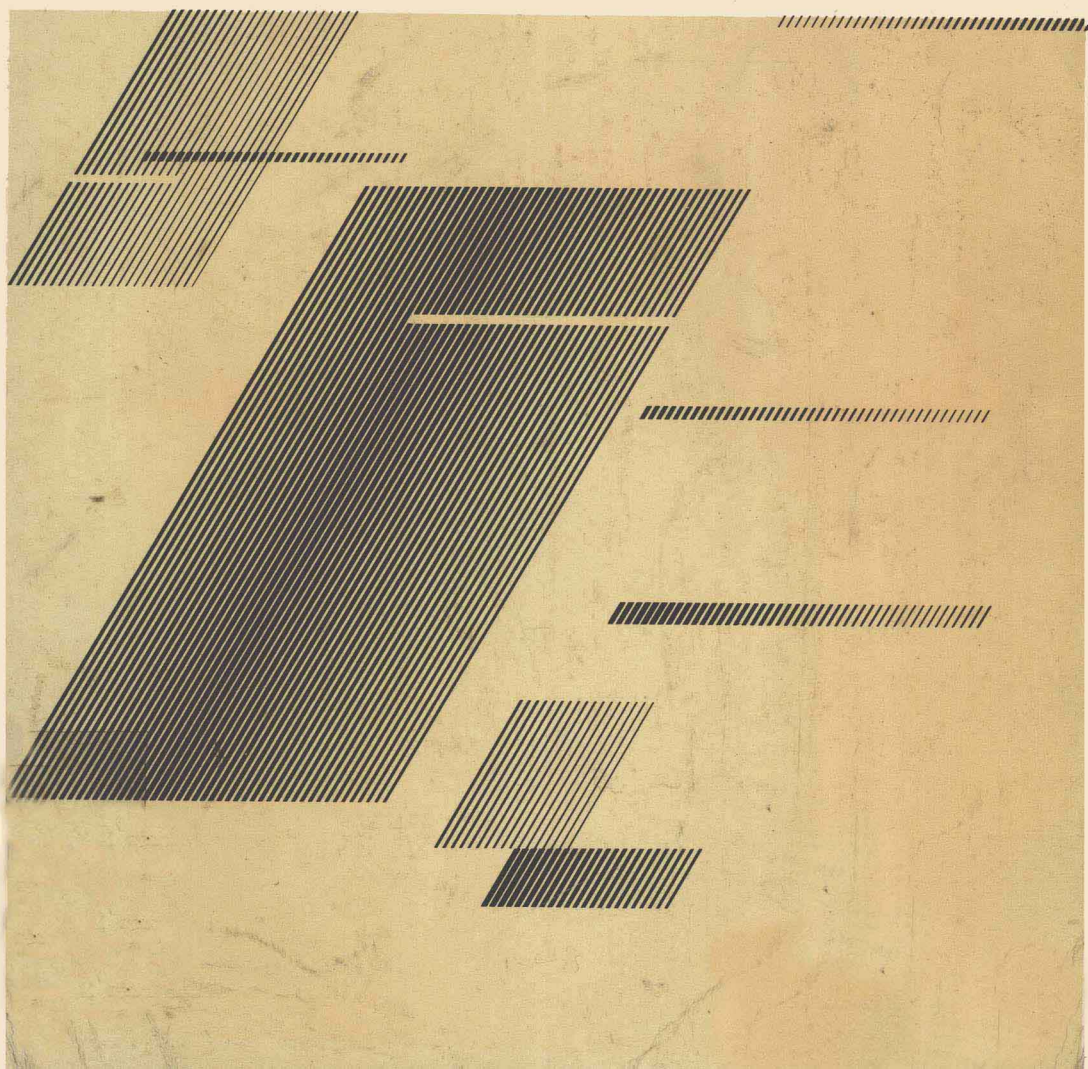


A Guide to Technical Communication

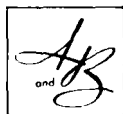


A Guide to Technical Communication

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Preface

Like the sciences and technologies that it serves, technical communication is forever growing, changing, and expanding. Concepts once held inviolate have been altered or discarded. Advances in such fields as word processing and computers have changed the work habits of the technical writer. New research in communication has visibly affected writing styles, usually for the better. It was principally in order to incorporate some of these innovations into the material found in standard technical writing handbooks that *A Guide to Technical Communication* was undertaken. Special emphasis, for example, has been placed on clarity, conciseness, and readability, three worthwhile concepts that have received more than a little attention from those who are critical of the way the English language is written and spoken today.

Technological innovations have provided writers with the tools to illustrate their own reports, not always with professional results, but at least with far better ones than most writers have traditionally been able to achieve. These devices are discussed in Chapter 8. In Chapter 9, another innovation, the computerized data bank, is discussed in relation to the needs of the library researcher. Audio-visual aids and their growing importance in oral communication are emphasized in Chapter 11.

These technological changes have been included principally to share with the reader a realistic view of technical communication as it is accomplished in today's offices, laboratories, and factories. Communications, of course, do not exist in a vacuum; they are but one aspect of a complex work situation. Therefore, wherever possible, I have sought to explain some of the pressures and conflicts so often encountered in technical reporting. Experienced technical communicators are already aware of many of these difficult work situations. The beginning writer who here gains an acquaintance with some of these situations should be better prepared to cope with them, if and when they arise.

Practicality was perhaps the principal criterion for determining what

should or should not be included in *A Guide*. It certainly was the overriding reason for including the sections on job-hunting materials and methods. I would be the first to admit that neither Part Five nor the two appendices rightly fall under a narrow definition of technical writing. Nevertheless, the process of obtaining work involves such necessary practical skills that in this case I believe the definition should be stretched a bit.

In basic structure the book is funnel-shaped, with the broad, general concepts of the opening chapters flowing into more specific, specialized types of writing at the end. Whether the instructor places emphasis on early or later chapters will probably depend somewhat on class composition. A class made up of technicians or engineers representing a wide variety of disciplines should probably concentrate on basic principles and treat the chapters on reports and forms as a general survey. For a more homogeneous class, however, emphasis probably should be placed on the study and writing of those reports commonly required by the students' profession.

The book's material was originally developed for a 30-hour course on technical writing, and the contents can be easily covered by assigning one chapter for each classroom hour, with ample time left over for laboratory writing, tests, and review. But this routine should be regarded only as a suggestion. There is, of course, no unalterable rule about how fast or slowly a book should be taught.

A great many talented people lent a hand in the preparation of this book, and I thank them all for their splendid efforts. Of the publisher's staff, I am especially indebted to Susan Fisher, Lorraine Perrotta, Richard Carle, Sally Lifland, Helyn Pultz, and George McCann. Daniel Dobbs and my son, Thomas Sherlock, also have my appreciation for their enthusiastic support of my efforts. I am especially grateful for all the perceptive criticisms and suggestions submitted by the tech-writing instructors to whom the manuscript was submitted. No suggestion was ignored, and most were incorporated in the final draft. The reviewers included Violet S. Thomas, University of Arizona; Virginia Book, University of Nebraska; L. W. Denton, Auburn University; Dorothy Dehr, American River College; Fred F. Feagin, George Wallace State College; Jon N. Loff, Allegany Community College; Mary L. Daniels, Seminole Community College; and Jack Merewether, Highland Park College.

J.S.

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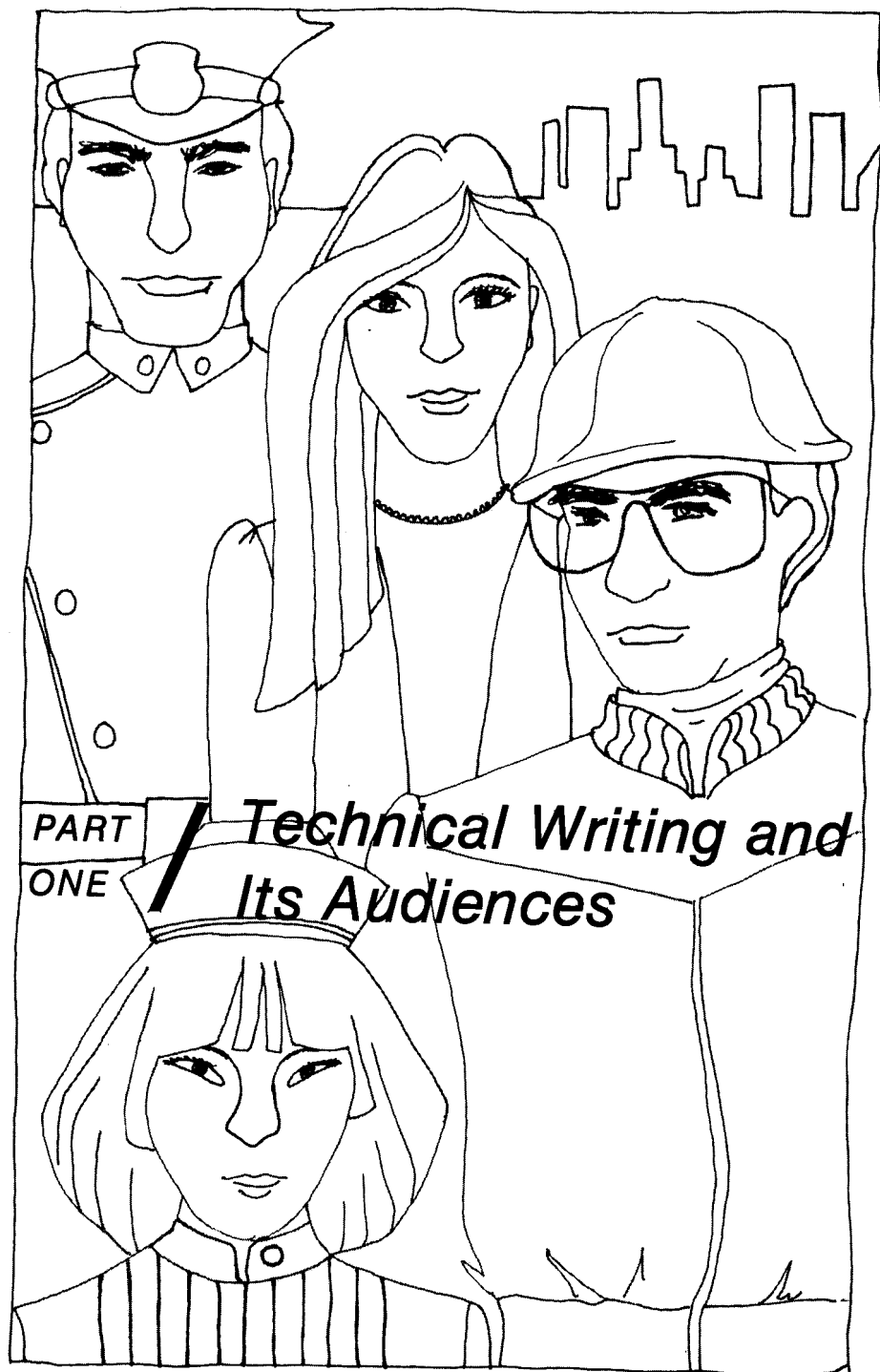
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1 / *Defining Technical Writing*

Sooner or later most technical writers learn the importance of defining unfamiliar terms. This book attempts to set a good example by first defining its overall subject. In a broad sense one might say that technical writing is a form of communication related to a field of human endeavor and employs a vocabulary understood by those active in that field. Usually the field is related to a branch of science. In a more restricted sense technical writing is often considered to be a functional mode of communication employed by the engineer or technician. To many people technical and scientific writing are the same.

As the terms are used here, however, the two types of writing are different. Scientific writing is written solely to inform—to satisfy the curiosity of the reader in matters pertaining to physics, chemistry, biology, and other scientific studies. An example of scientific writing is a space technology article in the science section of *Time*. Although technical writing usually deals with scientific subjects, its purpose is different; it tries to be functional—quite literally to be a tool used in performing a task. The manual showing the car owner how to change an oil filter is as much a tool as a wrench or screwdriver is. So, too, is the feasibility report issued to the administrator who uses it to make an executive decision.

SIMILARITIES TO OTHER WRITING FORMS

From earlier courses in English you may have learned that there are four basic forms of writing: *narration*, *exposition*, *description*, and *argumentation*. Technical writing, like other nonfiction writing, falls into these categories. In literary writing, *narration* refers to a chronological series of events serving as the basis for a story or anecdote. Generally its purpose is to amuse, to evoke an emotion, or to edify. Narration is also found in technical writing. However, the purpose is different; it is usually employed to

instruct. An example might be a process report telling how a technician performed a new or unusual technique, or it might be a set of instructions leading the reader step by step through a complicated activity. (Incidentally, not everybody regards instructions as narration; some think they should be classified as exposition, since they do explain.)

The technical writer uses *exposition*, the form of writing that defines or explains, when attempting to communicate with other technicians or with nontechnicians about new things or ideas. He or she may explain or clarify a term with a few, well-chosen words or with dozens of pages of examples and illustrations. Almost all reports contain at least a few expository sentences.

In technical writing *description* usually applies to a mechanism, process, or specific area. Specification writing often requires that the writer begin by describing the components of an unfamiliar tool or machine. A state-of-the-art report might include the description of a mechanism new to the industry. A report exploring the possibility of construction at a little-known site may require a description of that site.

Finally, *argumentation* is often found in reports ending with conclusions and recommendations. A form of writing of a more persuasive nature is the proposal, in which an individual company or organization is asked to purchase a service or product on the basis of evidence and reasoning. One might also include the trade journal advertisement as an example of argumentation, since copywriters try to persuade while relying on the expertise of the technician for data.

UNIQUE FEATURES OF TECHNICAL WRITING

Ask the average person to tell you how technical writing differs from writing found in a newspaper, and you'll probably be told emphatically that technical writing is much harder to understand. Pursue the questioning, and you'll find that it is the *specialized vocabulary* that puzzles and irritates most nontechnicians. Although some of this vocabulary is unnecessary (critics refer to it as jargon), most of it serves a legitimate purpose. It would be nearly impossible, for example, to find an accurate synonym for "integrated circuit" that could be understood by all readers lacking an electronics background.

In order to overcome the problems of communicating this specialized vocabulary, skilled technical writers make abundant use of *graphic aids* and *definitions*. Ironically, technical writing, which many readers consider to be the most difficult form of reading matter, frequently reverts to the use of illustrations for clarification—exactly as does the elementary school primer, the easiest form. On occasion, technical illustrators use cartoons in order to reach out to their audience. Understandably, since they use a

vocabulary unfamiliar to large segments of the population, technical writers often must define. Many technical reports include a glossary of terms near the beginning or end. Others devote an unusual amount of space within the paper to defining terms.

Whereas some literary writing is ambiguous when dealing with quantities, good technical communication possesses a high degree of *precision* and *accuracy*—and for good reason. The soundness of an executive decision or the success with which one can follow instructions often depends on knowing exactly how much or how many—not just an approximation.

Often stressed is the *objectivity* of technical writing, a quality that leads many readers reared on literary writing to find technical writing rather cold and impersonal. Except for reports calling for conclusions and recommendations, the usual technical report consists largely of facts—statements whose accuracy cannot rationally be challenged. Seldom involved are subjective terms, such as *beautiful*, *ugly*, *wonderful*, or *disappointing*, which reflect the writer's personal feelings. An example of an objective statement is the following:

New York City is located in the state of New York.

Who could logically challenge this statement? The following is an example of a subjective statement:

New York City is a wonderful place to visit.

Perhaps the writer believes this to be true, but some readers might challenge its validity.

Finally, most technical writing adheres to a *strict format* in keeping with its purpose and content. Although such formats do vary from company to company, most types of technical writing consist of the same recognizable parts. Convention dictates, for example, that a business letter should contain a letterhead (or the writer's address), date, inside address, body, complimentary close, and signature. In matters of indentation, spacing, and margins, however, the format may differ according to the individual style preferred by a company or writer. The same holds true for most formal reports; depending on its purpose, a report generally consists of certain well-defined basic parts. (These conventions are discussed in later chapters.)

THE VALUE OF TECHNICAL WRITING SKILLS

It has been estimated that of the approximately 11 million professional and technical workers working in the United States today, approximately 75 percent, or 8.2 million, write on a fairly regular basis. For most of these

workers, technical writing occupies a small but important part of their work week.

The importance of writing, however, cannot be measured solely by its quantity, either by frequency of the writing task or by the number of pages turned out regularly. If quantity were the deciding factor, most students would find themselves studying how to compose postcards and friendly letters. Of far greater importance is the ability to write occasional pieces of significance—for example, one or two really excellent résumés could, in a person's lifetime, result in higher paying, more satisfying jobs. Similarly, a successful proposal or an innovative justification report could result in an immediate raise and promotion for its author. Bad writing, on the other hand, can be disastrous. An ill-conceived plan, badly presented, may cost a company millions of dollars. A poorly written manual may be responsible for the injury or death of those who fail to understand the garbled instructions. You, as a technical writer, must understand that your writing may produce grave consequences for yourself, for your company, or for society as a whole.

In technical and engineering positions involving research and development, writing skills play an extremely important role. According to one survey, 49.9 percent of research work consists of technical reporting—24.5 percent of this is written reporting and 25.4 percent is oral reporting. In other surveys engineers have consistently named English one of their most valuable college studies.

Although at the outset of their careers technicians and engineers may find that writing opportunities are meager, undoubtedly they will be challenged by writing assignments as they advance up the corporate ladder. In fact, advancement quite often hinges on one's ability to communicate. In an article in the *Harvard Business Review*, Garda W. Bowman reported that the characteristics for which most companies reward promotions are, in order of increasing importance, "capacity for hard work," "getting things done with and through people," "good appearance," "self-confidence," "making sound decisions," "college education," and "ambition/drive." Considered to be the most important quality, however, is "ability to communicate." (See Figure 1-1.)

TECHNICAL WRITING AS A PROFESSION

No consideration of the practical value of technical writing would be complete without an examination of its career possibilities. Although few students studying the subject intend to become professional tech writers, many more unquestionably would consider it if they understood the career advantages.

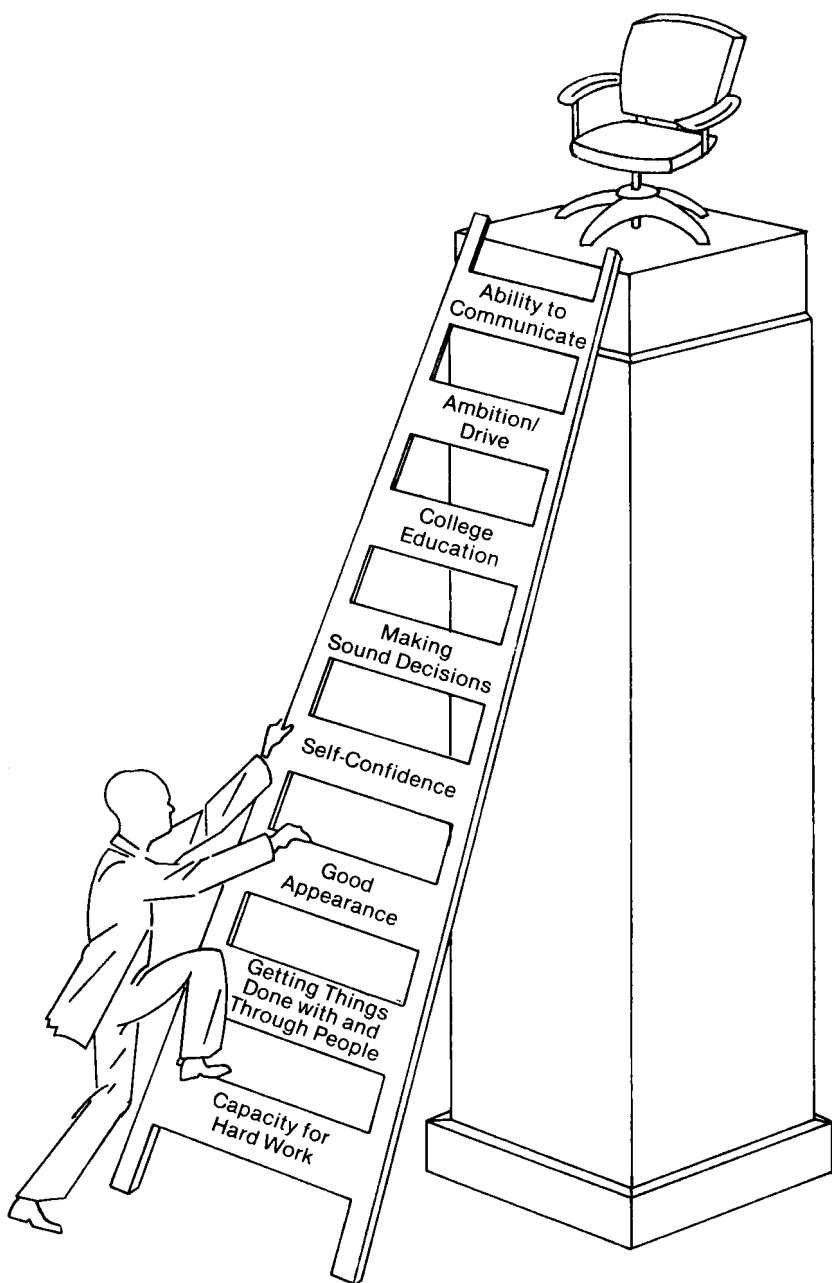


Figure 1-1. “Ability to communicate” is viewed by many to be the most important step to an executive promotion. Reprinted by permission of the *Harvard Business Review*. Adapted from an exhibit in “What Helps or Harms Promotability?” by Garda W. Bowman (January–February 1964). Copyright © 1964 by the President and Fellows of Harvard College; all rights reserved.