REPORTING TECHNICAL INFORMATION

Kenneth W. Houp / Thomas E. Pearsall

Fourth Edition

Reporting Technical Information

FOURTH EDITION

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Preface

Shortly before our revision for this fourth edition ended, we came into possession of a memorandum that delighted us. It was from Robert A. Lauer, the training officer for the Saint Paul Companies, a large insurance firm. The memorandum was directed to company department heads and outlined the objectives for a proposed report-writing class to be offered to company employees. The objectives were drawn from comments made by the department heads themselves and were as follows:

Report Writing Trainees should be able to

1. Identify the target audience(s) of each of their reports by functional area and job level.
2. Write a one-sentence statement detailing the purpose of the report, that is, what the information is to be used for.
3. List the significant findings of the report in descending order of importance to the target audience.
4. Construct a framework (outline) for a report that is appropriate to both the target audience and stated purpose.
5. Compose (from the outline) a report that is
   A. Informative and concise
   B. Logically organized
   C. Free of departmental jargon (foreign to target audience)
   D. Free of mechanical errors
   E. Readable
   F. An accurate depiction, where appropriate, of statistical data

We were delighted for several reasons, not the least being that Mr. Lauer's memorandum shows that some business people—an increasing number, we find—appreciate effective writing and know how to obtain it. For another reason, this message from the business world closely mirrors our own objectives for the users of this book—that they should be able to analyze an audience correctly; to find and organize material appropriate to audience, purpose, and situation; to design a functional report or letter that answers the purposes of both writer and readers; and to write that report or letter correctly, clearly, and persuasively.

Finally, Mr. Lauer's memorandum supports writing courses where this text, or others like it, is used—courses that in an objective, rational, structured way teach students how to do the writing that all professionals need to do once they are on the job.

What will you find in this book?

Part One is basic and introductory. It covers library research, information gathering, audience analysis, the use of the rhetorical modes, and achieving clear style.

Part Two includes instruction on the elements of a well-organized professional report, including graphics and prose elements such as abstracts, introductions, conclusions, tables of contents, and headings. It concludes with a chapter on planning, writing, and revising the professional report.

Part Three covers advanced and extended applications of the basic principles. Here you are shown how to write correspondence, proposals, progress reports, feasibility reports, and the like.

Part Four is a handbook for ready reference when questions of grammatical usage, punctuation, and mechanics arise.

In the appendixes you will find an extended student report, guides to library research and computerized information retrieval systems, metric information, and a bibliography of books that can help you to learn more about report writing.

What changes have we made for this fourth edition?

- A new chapter, "The Professional Report," is based upon our belief that no really well-defined categories called "formal reports" and "informal reports" exist. Rather, there is a continuum from simple memorandums to complex reports. Formal report elements such as abstracts and tables of contents should be used to satisfy functional needs created by increasing complexity and not to satisfy some traditional notion of formality.
- Our chapter on correspondence has a greatly expanded section on resumes and employment letters. We provide a list of resources helpful to the job seeker and a modern resume modeled on the

one used at the Harvard University Graduate School of Business Administration. We have also added a section on memorandums to this chapter.

- In our oral reports chapter we have added a new section on the use of visual aids in speaking.
- In our mechanical elements chapter we have revised the section on documentation to make it compatible with the guidelines set in the University of Chicago Press *Manual of Style.*
- Our exercises have been modified to call for even more realistic writing and also to get students writing earlier in the course. We also suggest (with suitable cross-reference to the correspondence chapter) that many early reports could be written as memorandums.
- We have added a section on using computerized information retrieval systems to our library chapter.
- We have widened both the number and scope of our examples drawing upon the natural and social sciences, engineering, and numerous other technical and professional fields.

Many of these changes and numerous other smaller ones reflect the growth of technical writing classes. More students from more disciplines than ever before fill increasing sections of technical writing. Two of the major journals that now inform the technical writing teacher—*The Journal of Technical Writing and Communication* and *The Technical Writing Teacher*—did not even exist when the first edition of this text was published in 1968. Articles on technical writing are published much more frequently than in the past in such journals as *College Composition and Communication* and *College English. Technical Communication* continues to publish useful articles. As a result, we now have more and better sources than ever before to draw upon when we revise our text. We are grateful for these important sources of ideas and information and happy to acknowledge them. We also happily acknowledge the help of all the following:

John Muller, Air Force Institute of Technology; Frances Blosser Maguire, Tarrant County Junior College; and W. Keats Sparrow, East Carolina University, who read our book and made many constructive comments.

Those who used earlier editions of *Reporting Technical Information* and provided suggestions and insights for improving this fourth edition, including Eleanor Bergholz, Strayer College, Virginia Murray, University of Houston, Beth Waggenspack, Central Ohio Technical College, Alben C. Johnson, California State Polytechnic University at Pomona, Ted Valvoda, Lakeland Community College, Douglas

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Donald J. Barrett, Chief Reference Librarian, United States Air Force Academy, who once again has revised Appendix B, "Technical Reference Guides."

And our wives, Lois and Anne, who know all too well the time-consuming effect of our touchstone phrase, "All writing is subject to infinite improvement."

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Contents

PART 1

Process of Technical Reporting

We have designed Part 1 to serve as an introduction to technical report writing for the student. Part 1 is particularly suited to the scientific, engineering, or technical student who must occasionally write reports. But the student who thinks of becoming a full-time technical writer will also find it valuable.

In Part 1 we lay a foundation that will enable a student to write simple technical reports. We cover three stages of report preparation: investigating, planning, and organizing. In addition, chapters on audience analysis, rhetorical methods, and style are included.

CHAPTER 1

An Overall View of Technical Reporting

This first chapter is purely introductory. It is intended to give you the broadest possible view of report writing. Beginning with Chapter 2 we will go into details. But for the details to be most meaningful, they have to be seen against the background given here.

Some Matters of Definition

What does the term "report writing" mean to you? Does the term "technical reporting" convey any clearer notion? In this book these terms are often used interchangeably. Therefore we are compelled at the outset to provide you with a working definition, which we will then expand and refine in later chapters.

This need for definition always arises when a novel and sometimes complex term is introduced. Suppose you were to learn from a bulletin board announcement that a lecture is to be given tomorrow evening on "operations research." If you didn't know the meaning of the term, would you attend the lecture anyway? Probably not.

> *Operations Research:* analysis, usually mathematical, to determine the effectiveness of a process, operation, or the like, to increase efficiency.

This definition, brief as it is, might very well enable you to make up your mind.

Now let us turn specifically to the title and subject matter of this book: *Reporting Technical Information.*

reporting: providing an account or description of what has been learned by experience, observation, or investigation.

technical: peculiar to or characteristic of a particular art, science, trade, or profession.

information: a body of knowledge gained from experience, observation, or investigation.

The reporting of technical information is thus seen to involve three elements at one or more stages of the process:

1. A problem or subject matter that is not popular knowledge but, rather, is specialized in that it belongs to art, science, medicine, engineering, or the like.
2. Study, observation, analysis, experimentation, and measurement to obtain accurate and precise information about the problem or subject matter.
3. Organizing and presenting the information thus gained so that it will be clear and meaningful to the person or persons for whom it is intended.

Next, but still by way of introduction, we want to elaborate upon this opening definition or set of definitions. We believe that we can best do this by treating the problem under these seven headings:

Various Writing Styles
Where Technical Writers Work
A Day with Two Writers
Who Reads Technical Reports
Goals of Technical Writers
What Makes a Good Report
Reports Compared with Writing in General

Various Writing Styles

Example	*Commentary*
. . . the very nice plant my mother had on her table in the front hall.	Everyday, homey diction; much depends on the reader's imagination.
. . . a properly potted and displayed specimen of the family Begoniacae.	Abstract, general, formal; open to interpretation.
. . . in a shaft of yellow sunlight, a white-flowering begonia in a red clay pot.	Pictorial, vivid, sensory; "shows" rather than "tells about."
. . . a twelve-inch begonia propagated from a three-inch cutting; age, 42 days.	Specific, "technical"; factually informative.

As a writer, whether part-time or full-time, you may have to use all of these "languages," for your job will be to convey the important truth to your intended readers. By playing the right tune with these languages in different combinations, and by adding other writing skills in generous measure, you can produce leaflets, brochures, and sales literature; reports to stockholders; a great variety of letters; and articles for magazines and journals.

When you write as a technician, scientist, or engineer or for technicians, scientists, or engineers, however, you will usually have to follow the closing begonia example in both diction and point of view. The diction is highly specific, so the meaning is clear and unequivocal. By relying on this factual language, you can produce operating manuals, inspection and test reports, specifications, progress reports, and similar materials, some listed in the table of contents of this book.

We do not pretend that all technical writing is exactly alike. It is not. The substance being communicated, the writer's immediate intentions, and the interests and capacity of the chosen audience should and undoubtedly will influence the prose. At the risk of oversimplification, however, we suggest that many varieties of technical writing reveal these attributes:

1. The writing is characterized by a no-nonsense approach to the subject it treats. It is single-minded and earnest. Interesting points are seldom introduced for their interest value alone; they must also be pertinent.
2. The purpose of the article or paper is usually spelled out in the opening paragraph or two. All included information bears upon the accomplishment of the stated purpose. For example, a technical paper on smoke detectors may set forth only one major objective: to determine the relative effectiveness of photoelectric and ionization chamber types in detecting smoldering fires, flaming fires, and high temperatures. Other major topics would be reserved for other papers.
3. The vocabulary tends to be specialized. Some of the terms may not appear in small dictionaries for general use. Often the specialized terms are not defined within the text, on the assumption that members of the profession the writer is addressing (e.g., forestry, optics, nursing) will be familiar with them.
4. The sentences are tightly packed with information, for the intended readers are highly motivated and will not tire when faced with an array of facts.
5. When appropriate to the material, numbers and dimensions are numerous. These are usually in Arabic form and are exact rather than rounded out to the nearest whole number.
6. Signs, symbols, and formulas may pepper the prose. The terms may be listed and defined in accompanying glossaries (mini-dictionaries).