This book contains hundreds of principles for better scientific and technical writing. This book is complete ... it presents every principle that I know of and use. It's full of examples. It's practical ... based on my extensive experience, not just on theories and rules. It's well organized, concise, and clear ... thus it's easy and quick to read, and to refer to. And it practices what it preaches ... it is itself an example of better writing. (Note — Abbreviated Contents is below. Full Contents is on the inside back cover and facing page.)

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BASICS ...
THIS BOOK IS DESIGNED TO BE USER FRIENDLY

Clear, Fast Understanding
- Complete, accurate information.
- Clear, consistent organization, with many headings and subheadings.
- Bullet lists, rather than long sentences and paragraphs.
- Numerous examples illustrate every principle.
- Bold italic type used to emphasize key points.

Instant Reference
- Short Contents on outside front cover.
- Complete Contents on inside back cover and facing page.
- Complete Index at end of book.
- Summary information on outside back cover.
- Main headings start on new page.
- Headings in large, bold italic type.
- Page numbers in large, bold italic type, on outside top corner of each page.
- Cross-references give page numbers, as well as section headings.

Easy Reading
- Simple, clear, concise language.
- Simple, short words, sentences, and paragraphs.
- Personal tone and active tense.
- Ragged-right lines, without hyphenation, make for easier, faster reading.
- Clean type style, of easily readable size.

Easy Use
- Flexible covers.
- Light in weight. Can easily be carried in a briefcase.
TO YOU, THE USER OF THIS BOOK

DEDICATION
I dedicate this book with love and gratitude to my Mother, Thelma Bolsky, who passed on, on November 11, 1984, Veterans Day. She was a real veteran who loved God and all of God's creation. Her whole life was devoted to loving and helping people. I pray and know that she still does so.

I also dedicate this book with love and gratitude to my Father, David Bolsky, a fine person who passed on many years ago.

"The Lord bless you and keep you. 
May God's face shine upon you and be gracious to you. 
May God look upon you kindly and give you peace."  
(Blessing of Saint Francis of Assisi)

WHO THIS BOOK IS FOR
This book will be useful in college and industry courses on writing.

This book will be useful to management, technical, and professional people, as a comprehensive reference handbook. These people, to whom writing is important, but who usually devote a small part of their time to writing, may wish to skim over this book ... then to study in detail sections that interest them ... and finally, to refer to this book as needed.

Technicians, secretaries, clerical people, and others do some writing. These people may also want to skim over this book, study in detail sections that interest them, and refer to this book as needed.

Those who devote most of their time to writing, may want to read all of this book.

This book has many ideas that can be useful to people in their personal writing, to help make letters, notes, etc., clear and specific.

TERMINOLOGY USED IN THIS BOOK
Users, Not Just Readers
Your document, or whatever it is that you are writing, will be used by people, not read for entertainment. That's why I use the term users in this book, rather than "readers."

These users are your customers — whether they are associates in the office next door, or consumers in the marketplace. Whoever they are, how well you do on the job depends on your pleasing them. So ... stay close to your customers. Make sure that you know who they are, what they need and want, and how you can best give it to them.

Documents
The principles in this book apply to any kind of informative material, both technical and non-technical — articles, books, booklets, documents, handbooks, letters, manuals, memos, papers, plans, proposals, reports, resumes, and speeches. For the sake of consistency, I use the term documents in this book.

Better Examples Shown First
This book contains many examples. One reviewer suggested that examples might have more impact if the poorer way was shown first, and then the better way. However, I show the better way first. I believe that the way a person sees first, is the way that they are likely to remember the best.
ABOUT THE WRITING STYLE OF THIS BOOK

My writing style differs from the sentence-and-paragraph style that is usually taught in school, and that is used in most writing. That style is fine for "literature" type material — fiction ... and non-fiction articles, books, etc., intended to entertain or to inform lightly, rather than to inform in detail or to instruct.

My style is heading-list-and-example based. That is —

- **Headings** — instead of several paragraphs or even pages without headings, I use many headings and subheadings, so as to organize the material as much as possible.
- **Lists** — instead of presenting information in sentences and paragraphs, I use bulleted lists as much as possible.
- **Examples** — instead of writing at length about the ideas that I wish to convey, I write about them as briefly as possible and then I illustrate them as much as possible.

I believe that heading-list-and-example style is more effective for informing users in detail, and for instructing them. This style —

- Lends itself to better organization.
- Is more clear and precise.
- Requires fewer words.
- Takes less time to read and refer to.

Of course, many people are used to, and may prefer the sentence-and-paragraph style, and there are good books on that style. One reviewer of this book felt that that style might be easier to read, perhaps especially for beginners. I disagree. However, I'm sure that there's a place for both styles. (See Pleasantness on page 16.)

The writing style that I both present and use in this book is similar to that which I used in my three books on computers Prentice-Hall, the publisher, has received favorable comments on the writing style of these books, as well as on the content, and I have also. In case you are interested in these books, they are The C Programmer's Handbook, The V7 User's Handbook, and The UNIX® System User's Handbook (UNIX is a trademark of AT&T).

Typical of the comments received about these books by Prentice-Hall, and by myself about these books and about other material that I have written at AT&T, are the following (I present these comments just to show that users like this style) — "It is everything a handbook should be. Short, clear, easy to use, to the point, and complete." ... "Excellent reference material. Very well organized, very well structured. Well put together. Well thought out." "It is the closest thing to a real handbook that I have ever seen."
THIS BOOK CONTAINS PRINCIPLES, NOT FORMAL RULES

One of the reviewers of the draft of this book said, "Parts of the book contradict advice given. For instance, on page 15, titles are not parallel (violating advice given on page 87)." It's true. The paragraph title "First And Foremost" on page 15, isn't parallel with the following titles in that section — "Integrity," "Warmth," "Organization," etc. However, I feel that the point that I make in the "First And Foremost" paragraph should be emphasized with that heading, and that making the emphasis is more important than is making the titles parallel.

That reviewer, and others, may disagree with me. They may feel that making the titles parallel is more important. But I do have what I consider to be a good reason for not being parallel.

The reason that I bring this up, is to ask you to regard the material in this book as principles for good writing, not as formal rules. Don't feel that you must follow every principle, exactly as it's given. Adapt the principles to your writing style, and to what the users of your document need and want.

COMPUTER TOOLS FOR WRITING

If you do your writing on a computer ... or if you have access to a computer and you have the skill and the time, or if you have a typist to enter your document into a computer ... then you may want to find out about computer programs that aid writers. There are spelling and thesaurus programs. There are also programs to check grammar, punctuation, word and sentence length, writing style, etc. One program that does much of this is the UNIX System WRITER'S WORKBENCH Program, developed by AT&T.

SUGGESTIONS FOR USING THIS BOOK

You can use this book as a text for study on your own ... as a text in a course on writing ... and/or as a reference book. I'll list each section of the book here, and briefly tell you what it's about.

However, before listing the sections, I'll first discuss the aids to using this book.
• Brief Contents on the outside front cover.
• Complete Contents starting on the inside back cover and facing page.
• Index starting on page 187.
• Basics section on the outside back cover, with a very brief summary of basic principles for better writing.

Note — Read through the following three sections, if you want to.

TO YOU THE USER — Contains introductory information.

BETTER WRITING — Also introductory in nature. Briefly discusses what better writing is about and why you may want to bother to write better.

WRITING — Discusses the steps in writing — Clarifying ... Developing ... Preparing ... etc. You may be especially interested in the Starting section, which has dozens of ideas for countering "writer's block" ... when you don't feel like writing.

Note — The rest of this book contains reference type information. You can read through these sections, or just skim through them so as to become familiar with them, and later refer to the information and the examples as needed.

DESIGN — PRINCIPLES — Discusses what I consider to be the basic principles for better writing — Accuracy ... Clarity ... Completeness ... etc.
DESIGN — BASIC ASPECTS — Discusses the types of basic support information that many documents need — Cross-References ... Footnotes ... Format ... etc.

DESIGN — BASIC SECTIONS — Discusses the types of basic sections that many documents need — Covers ... Contents ... Index ... etc. It’s arranged in the order that these sections would normally appear in a document.

DESIGN — BASIC AIDS — Discusses the types of aids to understanding that many documents need — Examples ... Illustrations ... Lists ... etc.

DESIGN — PHYSICAL — Discusses the Importance Of The Physical Design Of A Document ... Color ... Computer Vs. Paper Documents ... etc. It’s a subject that isn’t often covered in books on writing, but that I feel is important to know about, as it opens up different options to you.

PRODUCTION — Discusses Typing ... Proofreading ... Printing ... and Distribution of a document. Perhaps you can leave these matters to others. Even so, I think it’s important for someone who writes a lot to know about these matters.

FAIRNESS — Discusses, in detail, how to avoid sexism in writing. It’s summarized and adapted from a Prentice-Hall guide for authors.

GRAMMAR — Discusses and illustrates basics such as Modifiers ... Dangling Modifiers ... Misplaced Modifiers ... etc. This and the following two sections are summarized and adapted from U. S. Government publications.

PUNCTUATION — Discusses the mechanics of Acronyms ... Apostrophes ... Brackets ... etc.

ACTION VERBS / ABSTRACT NOUNS — Lists action verbs, and the corresponding abstract nouns which writers often use instead of the action verbs. The action verbs are easier to understand.

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Karen Olson, who helped and encouraged me at the time of my Mother’s passing on, and who is helping so many people in her work with the homeless.

John Wait, my editor at Prentice-Hall.

My Search For God Study Group.

You, the user of this book. This book represents my philosophy of communicating by the written word. Thank you for reading this book and thus giving me the opportunity to share this philosophy with you. I hope that you find it of value.
PERSONS AND ORGANIZATIONS QUOTED

Also, I want to acknowledge the following persons and organizations, whom I have quoted in this book. The page numbers on which the quotes appear, are shown in the Index starting on page 187:

- American Press Institute
- Carolyn Boccella Bagin
- Business Week Magazine
- Winston Churchill
- Document Design Center
- Jo Van Doren
- Robert D. Eagleson
- FORTUNE Magazine
- Joseph M. Fox
- Harold S. Geneen
- Laura Grace Hunter
- John F. Kennedy
- Henry Wadsworth Longfellow
- W. Somerset Maugham
- George Orwell
- Blaise Pascal
- Norman Vincent Peale
- Prentice-Hall College Division
- Will Rogers
- David A. Schell
- James R. Squire
- Mark Twain
- U. S. Government Printing Office
- The Wall Street Journal
- C. A. Warren
- Westinghouse Electric Corporation
- Jan V. White
- Frank Lloyd Wright

BETTER WRITING

WHY WRITE AT ALL?

Often we are tempted just to tell something to people, rather than taking time to put it in writing. But there may be good reasons to put it in writing, even though it takes time and effort to do so.

This section discusses reasons for writing, when you have the choice of writing or of just talking to the persons involved. Often, of course, you don’t have such a choice, as when you have to communicate formally to persons higher in your organization than you are, or to customers.

- Reputation — Better writing is important to do your job more successfully, and to enhance your reputation as an expert on the topic and as a good communicator. It is thus a stepping stone to higher level positions. Written material, whether it be a short memo or a long document, is very visible. Several, perhaps many people read what you write. If you write poorly, it reflects poorly, not just on your writing ability, but on you. And if you write in an outstanding way, then this reflects well on you in every way.

- Schedules — It may be difficult to get everyone together who needs to know the information. A document may help avoid having to call a meeting. Or, by preparing people with the information, a document may cut down the number of meetings that need to be held, and their length.

- Accuracy And Self-instruction — You are likely to spend more time clarifying and organizing your thoughts, getting more information, checking on details, etc. If you write a document, than if you just tell the information to people. This extra effort will increase your knowledge of the topic and also the knowlege of the users of your document.
Extra Information — You can attach extra information that may be useful, as well as provide references, in a document.

Record — Both you and the recipients of your document will have a record of the information. Moreover, you will all have the same record, whereas if you just tell information to people, each person will have a different interpretation of it.

Official Record Of Transmission — A document is a must to officially transmit information, policies, directions, decisions, etc.

WHAT IS BETTER WRITING?
Correct grammar is important. But most people already know grammar reasonably well. Certainly we all make mistakes. Even the experts. And since different schools of grammar have different rules, it’s impossible to please everyone. I don’t recall reading any document that I felt was unacceptable from the grammatical standpoint. Do you? On the other hand, much of what I read, I consider unacceptable from the standpoint of the aspects listed below. The most important aspects of better writing, in my opinion, are —

First And Foremost — No matter how technical and impersonal your document may appear to be, its purpose isn’t to describe objects. Its purpose is to help people ... the people who will use your document, and the people who will use the product or service that those who use your document are working on.

You aren’t working with words, but with information and ideas. If you believe that you are working with words, then you will think that the more and the fancier the words, the better ... thus lowering the value of your writing. And this is what many writers do think, and do. But the words aren’t the goal. They are only the means. The goal is to help people by communicating information and ideas to them.

Integrity — Every word that you write may be perfectly true. But if you ignore, gloss over, or cover up unpleasant details, then what you have written isn’t honest. Give the truth, the whole truth, and nothing but the truth.
"The truth is more important than the facts."
(Frank Lloyd Wright)

Warmth — Users want to know, What does this mean to me? Why is this important to me? How will this affect me? What do I need to do about this?
• Organization — Your writing reflects your thinking. If your writing is disorganized, it likely means that your thinking about the topic is disorganized. By taking time to organize what you write about a topic, you are really investing your time in organizing your thinking about it. Equally important, you should make the organization highly visible, with many headings and subheadings. "The University of California recently established a special faculty committee ... to study the prevalence of substandard writing among undergraduates. ... Its most conclusive finding was that difficulties in organization and structure predominate in poor writing; proficiency in the techniques of grammatical usage seemed a corollary of general ability to organize material logically. ... In short, good writers tend to be those concerned with organization, with the problems involved in forming relationships. The poor writers are those concerned primarily with mechanics. Moreover, poor writers, unlike the good, are totally unable to recognize good writing in others. One wonders whether those of us who have concentrated on spelling, punctuation, and vocabulary in our classes — that is to say, concentrated on writing rather than composition — have contributed to this disability in any way." (James R. Squire, "Tension on the Rope — English 1961")

• Simplicity — Use the simplest language possible. Never mind that you may be writing for PhDs. They need and want simple writing just as much as anyone else does.

• Conciseness — Here I refer, not to cutting out a word here and there, but to combining or eliminating duplicate and overlapping sections. This is another aspect of organization ... of clarifying and simplifying your thoughts.

• Clarity — Only after you have organized your writing, should you start clarifying and simplifying the paragraphs, sentences, and words.

• Pleasantness — One reviewer felt that sentence-and-paragraph style may be more pleasant to read. But I feel that heading-list-and-example style is clearer and quicker to read and to understand ... and thus, more pleasant. Perhaps most documents should consist of material in both types of styles.

BETTER WRITING IS IMPORTANT

"The minute a thing is long and complicated it confuses. Whoever wrote the Ten Commandments made 'em short. They may not always be kept, but they can be understood."
(Will Rogers. Weekly Article, March 17, 1935. Will Rogers Memorial, P. O. Box 157, Claremore, Oklahoma 74018)

In 1979, FORTUNE magazine talked to many successful corporate executives about what business schools should teach. Interviewers asked, "What kind of academic program best prepares business school students to succeed in their careers?" Executive after executive said, in frustration — **Teach them to write better.**

The importance of well organized, clear, and simple writing is infinitely more important today than it was years ago. The fate of many people, and even of the nation and of civilization itself depends on the operators of enormously complex systems in medicine, aviation, nuclear power, and the military.

Users often have difficulty understanding a document because of its style (or lack thereof), rather than because of its content. This causes problems. The work takes longer. Misunderstandings occur. Perplexed users turn to co-workers for help, wasting everyone's time. As a last resort, users guess at what they should do, causing error, waste, and delay. Frustrated users may feel inadequate and lose confidence in themselves and their work.

One survey of document users found that they had the following complaints —
• Information spread over several documents.
• Hard to find information.
• Unneeded, incomplete, unclear, inaccurate, out-of-date information.
• Unrealistic, unclear, or nonexistent examples.
• Jargon.
• Poor or nonexistent Contents and Indexes.
• Confusing section numbering systems.
• Documents hard to order, and delivery took too long.
BETTER WRITING PAYS

A report by Robert D. Eagleson, the Australian government's Special Adviser on Plain English Matters, offers examples of the economic as well as the social benefits of plain English. The following is from his report, as presented in Simply Stated, February 1986 (Document Design Center, American Institutes for Research, 1055 Thomas Jefferson Street, NW, Washington, DC 20007). Figures are in U.S. dollar equivalents, although Eagleson gave many of the numbers in British pounds.

Note — This book is about writing in general, not about forms design. However, forms design is a form of writing. So I believe that these examples of savings that are possible, are applicable to any form of writing. The fifth example on the next page is about regular written material.

In Great Britain

• Fifty thousand airplane passengers fill out a form every year for the Customs and Excise Department to claim lost baggage. The form had an error rate of 55%. Redesigning the form reduced the error rate to 3%, saving staff 3,700 hours in processing. It cost the Department about $3,500 to rewrite the form but saved about $45,500 a year in processing costs.

• For the Department of Defense, civilians fill out 750,000 claims forms every year for traveling expenses. By rewriting the form, the Department cut the error rate by 50%, reduced the time needed to fill out the form by 10%, and cut the time to process it by 15%. This new form only cost about $16,500 to produce but saved 80,000 staff-hours or about $552,000 a year.

• The Property Service Agency improved the design of a contract work order and saved about $221,000 a year in typists' time.

• In 1984, the Department of Health and Social Security introduced plain English application forms for legal aid. The Department spent about $34,500 to develop and test the forms but saved about $2,069,000 in staff time for the year.

• In 1983, the UK Home Office produced a new application form for naturalization that takes people 15 minutes less to complete than the old one and, thus, saves the public 20,000 hours a year.

• The Passport Office reduced the time it takes to fill out the application form for one of its visas from 40 to 20 minutes on the average — significant because English is the second language of most of its users.

• The UK Land Registry introduced a new B10A enquiry about bankruptcy and showed an 80% decrease in the number of written questions and a 90% decrease in the number of complaints.

• The Office of Fair Trading produced a single form in straightforward language that replaced four forms that were previously required.

In the United States

• When the Federal Communications Commission (FCC) issued its regulations for citizen-band radio that were written in legalese, the agency needed five full-time staff members to answer the public's questions. After FCC rewrote the regulations in plain English, the questions stopped and the five staff members were assigned to other areas.

• Citibank revised its forms so that both its staff and its customers understand them. This reduced the time spent training staff by 50% and improved the accuracy of the information that staff gave to customers.
THE HIDDEN ISSUES IN BETTER WRITING

Like everything else, better writing has a price.

- It takes more time and effort to write a well organized, concise, and clear five-page document, than it does to dash off the same information in twenty muddled pages. "I have made this letter longer than usual because I lack the time to make it shorter." (Blaise Pascal)

- After you have spent the time and effort to write a clear five-page document, users may think — "Well, that's fine, but of course this topic isn't too deep." Whereas if you dash off twenty muddled pages, users may think — "Wow! This person is brilliant to be able to write about such a difficult topic."

If one is fortunate enough to have managers who want ... allow time for ... recognize ... appreciate ... and reward better writing, there's no problem.

WHAT IT TAKES TO WRITE BETTER DOCUMENTS

- **Talent** — I believe that this book can help you to write better documents than you are presently writing. But as for really good ones, there's no substitute for talent. Just as it takes talent to be a top manager, a top musician, a top artist, a top scientist, etc. However, study can help you to do better, even though you may not have the talent to become a top expert.

- **Supportive Management** — I discuss this in THE HIDDEN ISSUES IN BETTER WRITING, on the preceding page. Your management must really want better writing, and better work in general ... not just pay lip service to it.

- **Good Role Models** — In the section on PREPARING on page 26, I suggest that you build up a collection of good documents that you feel are especially well written and well designed, that you can get ideas from. And, of course, if there are good writers around who are willing to spend some time reviewing your material, they can be extremely helpful to you, not just for what you are writing now, but for your writing and working skills in general.

- **Experience** — Just as there's no substitute for talent, so there's no substitute for experience. The more you do something, and do your best to do it better, the better you get at it.
• **Hard Work** — Recently I read a memo describing a block-type technique of writing. I thought that the technique was useful. But the following statement was, in my opinion, not very useful — "Less time is spent on writing. Because most blocks contain no more than a few sentences, the author has only to fill out the outline to come up with a completed document." This made it sound as if the outlining and the writing have been reduced to a mere routine, requiring little time, thought, or hard work. Which is nonsense. If you want to do a good job at anything, it requires much time, thought, and hard work.

---

**WRITING**

**CLARIFYING**

• **Define Your Purpose** — Talk to your manager, and to potential users of what you are writing and to their managers. Discuss orientation, content, level of detail, format, physical form, schedule, approvals. Perhaps also hold a design review at which you present your plans for the document, and at which interested persons can offer their opinions. Be sure to clarify just what users need and want. Do this clarification periodically.

Remember that job titles (e.g., computer programmer, engineer, manager) tell you little about the people who will use your document. First of all, job titles may vary widely in different companies, or even in different departments of the same company. And second, people with the same job title may have very different educations, experience levels, abilities, interests, etc. Talk to many potential users to get a feel for who they are and what they need and want.

• **Respect Users** — Involve users as much as possible in your work. You may think that you know what they need. But they know what they want. Discuss the purpose with them until both they and you are clear as to what is needed and wanted.
• Clarify If Your Purpose Is To —
  • Document information for the record.
  • Report on what was done, or what was found.
  • Discuss the background and philosophy of the subject, so that others can decide what to do.
  • Inform people in a general way about the subject, just for their information.
  • Recommend what should be done.
  • Instruct people on (what, when, where, why, how) they should do something.
  • Persuade (advertise) people to buy, or do, or use something.
  • Order people as to (what, when, where, why, how) they should do something.

DEVELOPING
• Research — "Take what is best from the past, and build on that." Some or even much of what you need to write, may already have been written. Spend time researching material that you can adapt, or even incorporate into what you are writing.
  • Don't feel that you must do everything anew, reinventing the wheel. That may be called for in a school environment, where the goal is to test your knowledge and ability. But in a business environment, the goal is to do the job as effectively as possible.
  • Don't take the "Not Invented Here" attitude ... that if something wasn't done or written by you or by someone in your department, it couldn't be very good. Of course, if you use someone else's work, get permission if needed, and acknowledge their work.

• Talk With Experts — People may be more up-to-date than are documents. They can tell you on which points you should focus, and they can refer you to other people and to specific parts of documents that you need to read. And, of course, you can ask questions of people.

• Talk With Users — Talk with potential users, of all levels of experience and ability.
  • Experienced and capable users can provide you with detailed information and handy "tricks" that they have learned. On the other hand, they may know the material so well that they gloss over or downplay the importance of some information that may be important to less experienced or less capable users.
  • Less experienced or less capable users may call your attention to information needed by them.
  • New users may call your attention to the information and procedures that they need.

• Observe — Watch and talk with potential users. Make it clear to them that your purpose is to analyze their needs, not to evaluate them personally.

• Participate — Perform the task yourself, under actual conditions. "You soon discover, in a fire control director on top of a rolling destroyer or in the tight quarters of a submarine, how you would design equipment [or documents] differently ... if you had had this field experience earlier." (C. A. Warren)
PREPARING

- **Write Concurrently With The Project** — Don’t think of writing as a necessary but boring postscript to a project. Think of it as a challenging part of the project, to be done concurrently with the project.

- **Seek To Be Creative** — Don’t feel that writing a document is dull and uncreative. Of course, it isn’t the same as writing a science fiction fantasy, at least hopefully it’s not, for the sake of the people who will have to use your document! But writing a well organized, concise, and clear document can be ... in fact, should be ... highly creative.

- **But Don’t Be Creative In An Artificial and Harmful Way** — The author of one brochure was "creative" by using ten or more different colors, making nearly every page a different size, and using other such gimmicks. Aside from its costing a fortune to print, users complained that the brochure just wasn’t well written. Here the author was creative in the sense of designing a document that was probably unique in its form and thus pleased the author, but that didn’t please users by meeting their needs.

- **Build Up A Collection of Good Documents** — Start a collection of documents, booklets, foldout cards, etc. that you feel are especially well written and well designed. Then, when you need to write something, look through your collection for ideas. Spread out on a table all of the appropriate material. Consider —
  - What type of information should your document have?
  - What level of detail?
  - What organization?
  - What format?
  - What physical form?

- **Find Out What Services and Facilities Are Available** — Familiarize yourself with the services of Editing, Word Processing, Drafting, Art, and Printing. Do this before you start writing, so that you will know what facilities are available and what help you can get.

- **Give Reminders** — At all stages in writing, you will be working with people — subject matter experts, managers, editors, typists, artists, printers, etc. Always remember that — **Nothing is likely to happen on schedule without well-timed, diplomatic reminders**. To them, you are just one of many "customers" ... but to you, you are The Customer. So don’t wait until a due date to contact them. Talk to them before the due date, and ask —
  - If they know what to do.
  - If they have any questions.
  - If they have, understand, and can follow your instructions and schedule.
  - (But don’t rush them when there is no rush. It isn’t fair to them. And it isn’t fair to yourself either, because when you really do have a rush job, they may not pay attention.)
STARTING

"Writer's block" is a common phenomenon. This section offers suggestions on how to overcome it.

• Clarify What You Are Supposed To Be Doing — A frequent cause of difficulty in getting started, or in continuing with what you are doing, is not being very clear about what you are supposed to be doing. Talk with your manager, with associates, and with potential users. Then write a Purpose Statement, and check it with them.

• Think Of Who, What, When, Where, Why, How — Write out and answer these questions about your document.

• Speak Up If You Aren’t Getting Needed Support — If the people who are supposed to be providing you with information or other support aren’t doing so, or are doing so in a halfhearted manner, talk with your manager.

• Face The Fear Of Criticism — Perhaps you are afraid that your manager won’t like what you are writing. Show him or her what you have written, and get feedback.

• Brainstorm — Do this yourself or with others. Write down all the ideas that you can think of, about what to put in the document and how to say it. Observe this rule — No evaluation (especially, no criticism) allowed during the brainstorming session.

• Discuss Your Project With Associates — This is an excellent way to clarify your thinking. Even if they know nothing about your project, sympathetic listeners can serve as a "sounding board" for your ideas. You are likely to get new ideas, especially if they ask questions about what you are doing. And, of course, if they do know about the project, they may provide useful ideas, information, and leads to other people or to documents.

• Keep A List Of Points To Cover — As you start to write, or before, ideas will come to you about what points to cover and what to say. Jot down these points on 3x5 cards, 8½x11 sheets, or in a notebook. Keep adding to, and organizing your list of points and your list of what to say. Gradually you’ll see how to organize the material ... what points need to be added, deleted, or combined ... and how to say it.

Don’t Feel That You Must Outline Before You Start — You can, of course, start with an outline. But you don’t have to. If you want, you can start with an outline of just a small part of the document. Or you can just start writing, with no outline at all.

• Warm Up — Sharpen your pencils. Make a phone call. Clean up your desk. Etc. But don’t do this for too long. Get to work!

• Start At Any Point In The Document — You don’t have to start at the beginning and continue to the end. You can start at any point that you feel like.

• Organize The Document Into Small Sections — Then think of only one at a time. Forget the rest.

• Look At Past Documents On The Subject That You Are Writing About — Look at examples of already written documents, by yourself or others, of the type of document that you are writing now.

• Look At Your Own Past Documents That You Like, On Any Subject — This will boost your confidence, and may give you ideas.

• Read Something, On Any Subject, By An Author Whom You Admire — You may be inspired by it.

• Read Over The Parts Of Your Document That You Have Already Written

• Write In A Simpler Way — Consider if you are trying to write in an official, complex way, either to impress users or because you think that is the way you are supposed to write. Try to write in a simpler way, as if you were speaking to users.

• Set Aside A Daily Time Period — Force yourself not to do anything else during this period, except work on your document. Even if you don’t write a single word, don’t do anything else — no phone calls, no putting your desk in order, no "To Do" lists, etc. It’s write, or nothing.

• Set A Quote For The Day And Then Stop — Set a quota of how many pages you will write for the day. Then stop and do something else.
• **Don't Force Yourself To Stick To One Document All Day Long** — If you can, try to have a few things going, so that when you get tired of one, you can switch to another. At the least, you can switch to different parts of the same document.

• **Lay It Aside** — If you can't get started on, or can't finish, a section, lay it aside for an hour or a day or a week.

• **Alternate Between Writing, Editing, Doing Research, Etc.** — You can write, then edit what you have written, do research, outline, etc.

• **Try Different Environments** — You might be able to write better in the company or a public library, in an unused conference room, or in the company cafeteria when it isn't in use. Or find someone else's empty office that you can use, where it is quieter or noisier (whichever you prefer). Or try writing in your car, or in a park, or in a diner or a restaurant.

• **Try Different Writing Tools** — Try writing with a different pen (fountain pen, ballpoint pen... different colors and point sizes); or pencil... a different typewriter... etc. Try marker pens instead of a regular pen. Write on a chalkboard. Try dictation. Use different paper.

• **Try Different Computers, Etc.** — Try a different computer, a different computer terminal, or a different computer editing program. Or no computer at all.

• **Try "Invisible" Writing** — Turn off the computer screen while composing.

• **Write Something Small** — You don't have to write whole sections, or even paragraphs at a time. You can write sentences or even just phrases.

• **Write Something Familiar And Easy**

• **Make A Start On The Next Section Before The End Of The Day** — At the end of the day you are likely to be warmed up from that day's work, so it may be easier to start the next section. Thus you won't have to start on it "cold" the next day.

• **Look At Your Document (The Parts You Have Written, Or Your Notes For It) Just Before You Go To Sleep** — This may help to get your subconscious working on it while you sleep.

• **Reward Yourself** — Promise yourself a reward after you have done some work — a walk, a chat with a friend, listening to some music, a snack, etc.

• **Work Early Or Late** — Write early in the morning, at home or at work before anyone else gets in. Or write late in the evening or at night. Or on weekends.

• **Seek The Creative Moment** — If you're doing some routine work and get the urge to write, drop what you're doing and write. Keep a pad (or 3x5 cards) and pencil with you, and by your bedside, so that you can jot down ideas as they come to you.

• **Tape Pages On The Wall, Etc.** — Tape your outline, and other pages that you've written, on the wall, a bulletin board, etc.

• **Write Ideas On A Chalkboard**

• **Change What's On Your Desk** — Clean it entirely. Or put some personal pictures, scenic pictures, etc. on it. Or mementos. Or flowers. Or books. Etc.

• **Write In A Different Way** — Write fast, without trying to edit as you write. Or do the opposite. Try talking it out as you write (to yourself or to someone else).

• **Change The Temperature** — Raise or lower the temperature. Or get a fan. Put on or take off a sweater. Open or close the window.

• **Change The Lighting** — Get better lighting (a desk lamp). Or turn off the overhead lights. Or have some overhead bulbs taken out.

• **Move Your Desk** — Or get a different desk.

• **Use A Stand-Up Desk** — Ernest Hemingway and Thomas Wolfe are said to have done their writing standing up.

• **Write While Lying Down** — Write while lying on the floor or in bed. Mark Twain is said to have done his writing while lying in bed. Winston Churchill conducted much of his business as Prime Minister of England from his bed.

• **Adjust Your Chair** — Or get a different chair.
- **Put Your Feet Up** — Write at a table, with a hassock or chair on the other side of it so you can put up your feet.
- **Turn Off The Telephone**
- **Play A Radio, Or A Cassette Recorder** — Isaac Asimov is said to work with a radio blaring.
- **Use A White Noise Machine** — This produces sounds to mask distracting noise.
- **Line The Room With Cork For Silence** — Marcel Proust is said to have done this.
- **Splash Cold Water On Your Face**
- **Eat Something**
- **Take A Few Slow, Deep Breaths**
- **Exercise** — Stretch. Move your head forward and backward, and then sideways a few times. Rotate your arms. Walk around the building, or go outside for a walk.
- **Meditate** — Sit or lie quietly on the floor for a few minutes. Think of a relaxing scene.
- **Write In A Noisy Place** — Jane Austin is said to have done her writing in the middle of the family hubbub.

**Note** — Some reviewers thought that the following items were a bit "heavy," beyond the bounds of this book. But I wanted to make this section as complete as possible. So I’ve left these items in. They may help some people.

- **Get Medical Help** — If you consistently have a problem in getting started and continuing with your work, you may have a medical problem — low thyroid, allergies, etc.
- **Get Environmental Help** — There may be something in the environment that is affecting you — gas leak, allergy to some nearby equipment, poor air supply, pollution from inside or outside the building, etc.
- **Look At Your Living Habits** — Are you getting enough sleep? Are you eating a good diet? Are you overworking? Do you have a serious family or personal problem for which you may need help? Etc.
- **Consider If You Are In The Right Job** — Maybe you just aren’t cut out for this sort of work.

**EDITING**

- **Sleep On It** — After you have your first rough draft, put it away for a day or two. You can then come back to it with a fresh viewpoint. If what you are writing is long and will take many days, do this periodically.
- **Edit And Re-Edit** — Also ask others, especially some people who will have to use what you write, to edit the material, or at least to comment on it.
- **Read your writing aloud, especially the key parts. Do this alone, and/or with someone else.**
- **Write or type drafts double or triple space to allow room for changes.**
- **When your draft becomes unreadable because of too many changes, get it retyped. A word processor makes this easier, because only the changes need to be entered.**
- **If you find it hard to cut out material, then after you have cut it out, file it in an Archives File. So you won’t feel that it’s lost forever. This isn’t just a psychological trick. You may indeed decide to put it back in the current document, or in a future document.**
- **Organize** — Eventually, perhaps after you have finished writing, you should organize your material. Check it for the following —
  - **Does it focus on your objectives, and not wander off into side issues?**
  - **Is every important point included?**
  - **Are main points emphasized?**
  - **Are subpoints placed under the correct main points?**
  - **Is the sequence logical?**
TESTING

- Don't Work Alone In A Vacuum — Don't spend much time writing and heavily editing a "masterpiece" before you show it to anyone ... only then to find that it isn't what they need or want. Issue a first, rough draft soon. Send it to your manager, to some experts on the topic, and to some key potential users. Then talk with them, to ensure that you are proceeding correctly. Do this periodically.

- Mark It As A Draft — Write DRAFT on the front page (or on every page) of drafts, so people won't think that it's a final copy.

- Put On Your Name — Write your name/room/phone on the front page of drafts.

- Put On The Date — Date each draft on the first page, or on every page if you or others may take the pages apart.

- Have A Master Copy — With each successive draft, write all changes from everyone's copies (the changes that you choose to accept) on a master copy. Then discard the old drafts, so as to avoid confusion. Or file the old drafts in a corner of your bookcase, where they won't be mixed up with current drafts.

- Ask For Comments In Red — Ask people to use a red (or some other color that contrasts with the print) marker pen for comments. Maybe tape one to each review copy.

- Send Photocopies — When a good draft is ready, send photocopies to some or all potential users, so that they can use it at once, and also so that they can give you feedback as to its accuracy, completeness, clarity, etc.

- Talk To People About Your Document —
  - Don't just ask them if the meaning is clear to them. They may assume that they know what you mean. But they may be wrong. Ask them to tell you, in their own words, what they think it means. For procedures, ask them to actually carry out the procedures while you observe them.
  - Don't just do this with a couple of your friends, who probably are familiar with the topic and with the way you write. Do this with a representative sampling of the people who will be using your document, both experienced and inexperienced.

- Field Test Your Document — If your document is part of a system that will be undergoing field test, then test the document as part of the field test.

- Study Use Of Your Document — Consider doing a study such as the following. This was done for the user manual for a computer text editor system. The project manager hired several typists from a temporary employment agency, gave them the user manual and a computer terminal dialed into the system, and asked them to study the manual and learn how to use the system. The manager or an associate sat by each typist all the time and took notes, but didn't help them in any way. The typists were also asked to give a running commentary on what they were thinking and doing, as they studied the manual and used the system.

  The manager said that much useful information was obtained in this way that probably couldn't have been obtained in any other way. The manager also said that regular employees of the company wouldn't have wanted someone to watch over their shoulder, or even if they were ordered to participate, they might not have been totally frank in their comments. They might have thought that it was a test of them, rather than of the user manual. The temporary typists were hired specifically for the study, and thus they had no reason to fear that they were being tested since they didn't work for the company.

  One important finding is that the typists tended to blame themselves, rather than the user manual or the user interface of the system, when they couldn't understand something or did something wrong. So when people say that a document is "Okay," it may mean little or nothing.
REVIEWING

These suggestions are for those times when you are called upon to review and edit someone else’s writing. And also for when you want someone to review what you have written. Note — If you know that you will be reviewing someone’s document (especially if you are their manager), get involved early in the planning for the document. Don’t wait until it’s finished and then just react to it.

• Ask What To Review For — If you are the author’s manager, you’ll know the points for which you want to review the document. But if you are the author’s associate and he or she gives you something to review, ask — Just what does he or she want you to review it for? For spelling and grammar? For accuracy? For completeness? For clarity? For organization? For all of these things?

• Skim Over All Of The Material — Skim over all of the material before you start to jot down your comments. Otherwise, you may waste your time and irritate the author with unnecessary comments ... because the author covered the points you wish to make, on the next page or perhaps in the very next sentence.

• Be Tactful — Regardless of whether you are the author’s manager or associate —
- Praise good work, and do it specifically. Say why you feel the document (or sections of it) is good.
- Don’t say, about the whole document or sections of it, “This is bad.” Give your reasons for saying it is bad. If possible, suggest how to write it better.
Note — Don’t use the word “bad” at all. Be diplomatic and say, for instance, that something might be rewritten. But do be specific.
- Focus on main points. Don’t discourage the author and waste his or her time with minor details.
- Don’t try to convert the author’s writing style into your own style.
- If you don’t have comments, don’t give any. Don’t comment just to prove that you’ve read the document ... or to show that “I know better than you do.”

• Use A Marker Pen Of A Contrasting Color — Use a marker pen of a color (for instance, red) that contrasts sharply with the material you are reviewing. If the draft is typed in black ink and you use a black or a blue pen or pencil (as most people do) to make comments, the author may not notice some of them. This is a minor point, but if not done, errors can result.
ACCURACY

- Don't rely on documents alone for source information. Personally check with experts.
- Doublecheck your final draft with source information and with experts. Even if you originally obtained the information from the same experts, check the final draft with them also. You may have misinterpreted or omitted something, or put something in the wrong context. Or, after reading your draft, the expert may realize that he or she was wrong, or didn't explain it correctly. Or the information may have changed.
- Proofread all drafts. Perhaps ask someone else to proofread them also. Even if your document was done on a word processor, you should check everything each time before you discard the old draft. Even if you made just a few changes here and there. Both typists and computers have been known to make mistakes.
- Ask someone to read your draft from the standpoint of — Does it make sense? They may catch obvious errors that you missed, because you are so familiar with the material that you didn't notice the errors.
- Make sure that examples are correct. One study of computer programming textbooks found that the textbooks had many wrong examples. Sometimes the examples violated the very rules that they were meant to illustrate.
- Don't leave out important details because they might "confuse" users.
  "Harvey Brooks, a physicist who teaches government at Harvard, says much science coverage [in newspapers and magazines] is sound, but that most journalists have a 'low tolerance for ambiguity' and often leave out important details that might weaken a science story's conclusions...."
  (Reprinted by permission of The Wall Street Journal, © Dow Jones & Company, Inc. 1985. All rights reserved.)

CLARITY

- Make your document be clear and simple to use. Also make it appear so at first glance, so that users will want to use it! Which of the following sentences would you prefer to read?
  - Say "This won't work if it's bent."
    Not "A proper functioning of this component is critically dependent upon its maintaining dimensional integrity."
  - Say "Last year we changed the way we work."
    Not "During the preceding year the company was able to change the method of working."
  - Say "Our action was based on the belief that the company was making money."
    Not "The action was predicated on the assumption that the company was operating at a financial gain."
  - Say "They agreed to the contract."
    Not "They acceded to the proposition to approve the contractual relationship."
• Use short, simple words, sentences, paragraphs, sections. Only one idea to a sentence. Only one group of related ideas to a paragraph. Only one subject to a section. "Short words are best and old words, when short, are best of all." (Winston Churchill)

Say Not about approximately also additionally although despite the fact that aware cognizant because due to the fact that begin initiate best optimum buy purchase change modification consider take into consideration do accomplish do implement failure malfunction finish finalize first initial for, to for the purpose of go proceed good meaningful help facilitate if in the event that improve ameliorate many a large number of much a great deal of name designation no negative now at the present time part component plan conceptualize problems operational difficulties scarce in short supply show demonstrate study make a study of use utilize yes affirmative

• A survey of the American Press Institute (11690 Sunrise Valley Drive, Reston, Virginia 22091) indicated the following relationship between the number of words in sentences, and reader comprehension.

![Percentage of Comprehension Graph]

• Avoid meaningless modifiers such as "actually," "definitely," "practically," "really," "very," "virtually." (But sometimes these words do emphasize your meaning.)
• Avoid conjunctions such as "and," "because," "but," "for," and "however" to start a new clause. Instead, start a new sentence. The second sentence may not be complete (as in the examples below). But so what? The main thing is that the sentence be clear.
  • Say "Take your foot off the gas pedal. Then step on the brake pedal."
  Not "Take your foot off the gas pedal and then step on the brake pedal." (Note—There is disagreement in the professional community about which form is clearer.)
  • Say "There isn't enough time available for the average manager to do everything that needs to be done. Thus it is necessary to determine the essentials and do them first. Then the manager can spend the rest of the time on things that are fun to do."
  Not "There isn't enough time available for the average manager to do everything that might be done, and thus it is necessary to determine the essentials and do them first, and then spend the rest of the time on things that are fun to do."

• In conditional statements, make words like "and," "if," and "or" stand out. Use uppercase and/or bold italic type.
  • Say "IF you are over 21, AND you live in the city, THEN you are eligible for . . . ."

• Use active tense. One study found that it takes up to 25% more time to understand passive sentences, than it does to understand active sentences. Also, users are more likely to misunderstand the passive sentences.
  • Say "Pat did the job."
  Not "The job was done by Pat."
  • Say "Our purchasing department submitted bids." Not "Bids were submitted by our purchasing department."
  • Say "We discussed the plan."
  Not "The plan has been discussed by us."
  • Say "Always wear safety belts." Not "Safety belts must always be worn."
  • Say "Complete the form."
  Not "The user should complete the form."
  • Say "Our staff will plan the meeting."
  Not "The meeting will be planned by our staff."

• Don't switch from active to passive tense in the same sentence.
  • Say "They considered the report but took no action."
  Not "They considered the report but no action was taken."
  • Say "Turn off power. Disconnect wires."
  Not "Turn off power. Wires must be disconnected."

• However, sometimes passive sentences are preferable to active ones.
  • The call was heard by everyone" (passive) is preferable to "Everyone heard the call" (active) if you want to emphasize the word "call."
  • Sentences that start with "it" and "there" can usually be simplified and shortened—
  • Say "We believe . . . ." Not "It is believed by us . . . ."
  • Say "They need not . . . ." Not "It is not necessary that they . . . ."
  • Say "Please do this today."
  Not "It would be appreciated if you would do this today."
  • Say "I recommend that . . . ." Not "It is my recommendation that . . . ."
  • Say "No changes have been made."
  Not "There have been no changes made."
  • Say "No uniform procedure is followed."
  Not "There is no uniform procedure followed."
  • Say "The group has a rule that . . . ." Not "There is a rule in this group that . . . ."
  • Say "The group has 6 people."
  Not "There are 6 people in the group."

• Using an infinitive ("to study," "to improve," etc.), is usually shorter and clearer than is using a phrase ("for the purpose of," etc.).
  • Say "Pat went home to study."
  Not "Pat went home for the purpose of studying."
  • Say "They increased the lighting to improve working conditions."
  Not "They increased the lighting so that they could improve the working conditions."
Don’t change action verbs into abstract nouns. Nominalizations are words (usually verbs) made into nouns. The verb form is usually clearer than is the noun form. Nouns can be recognized by endings “-ion,” “-ment,” “-ation,” “-ance,” “-ence,” and “-osity” (as in pompously).

- **Say** “Our inspectors examine each part.”
  - **Not** “An examination of each part is made by our inspectors.”
- **Say** "When we receive your voucher, we will issue your check."
  - **Not** "Issuance of your check will follow receipt of your voucher."
- **Say** "If writers would acquire just this one habit, they would greatly improve their writing."
  - **Not** "The acquisition of just this one habit by writers would effect a great improvement in their writing."
- **Say** "They decided to go there."
  - **Not** "The decision to go there was made by them."

**Action Verb** | **Abstract Noun**
--- | ---
consider | the consideration of
oppose | the opposition to
suppose | the supposition that
repay | repayment
rely | reliance
depend | dependence
refer | referral

**Note** — More such words are on page 184.

You can also use other words (instead of the corresponding action verb) in place of an abstract noun. (But this doesn’t mean that other words are necessarily a good idea. Do what you think is best.) For instance —
- "look down on" in place of "condescension" or "condescend"
- "come between" in place of "intervention" or "intervene"
- "talk about" in place of "discussion" or "discuss"

Avoid **noun strings** (several nouns strung together). Noun strings are hard to read and to understand.

- **Say** "Write a report for company professional employees."
  - **Not** "Write a company professional employee report."

Avoid "whiz deletions." **Note** — "whiz" comes from wh(ich) ... is (are, was, were, etc.). That is, don’t cut out words such as "which is," "who were," "that are," etc.
- "The manager wants the report (which was) written by Pat."
  - If you cut out **which was**, it’s not clear if the report was written by Pat, or is to be written by Pat. So leave in the "which was" here, or even better, you can write — "The manager wants the report that Pat wrote."

Sentences with subordinate clauses are understood better if the clauses are introduced by relative pronouns as "that" or "which."
- **Say** "The dog that they found chased the cat."
  - **Not** "The dog they found chased the cat."

Beware of "fine writing." If you are enamoured of something that you have written, perhaps you should cut it out. At least show it to some other people and get their opinions.

- Physical factors may cause a document to appear more complex than it really is. **Avoid** —
  - Small print.
  - Very thin typeface.
  - Closely packed print.
  - Too wide lines of type.
  - Too many styles and sizes of type, lines, boxes, etc.
  - Small top/bottom and side margins.
  - No Table of Contents.
  - Few or no section headings.
  - Complex section numbering scheme.
  - Dark paper color that provides poor contrast with the print.
  - Sharp print and/or paper color that hurts the eyes.
  - Difficult to read type style.
COMPLETENESS

• Include enough information in the document so that a trained person can use it by itself, without having to refer to other material or to other persons.
• Don’t scatter related information throughout different documents.
  • Instead of having many little pages, memos, cards, folders, charts, etc. floating around, put it all in one document.
  • But ... don’t lump together all sorts of unrelated information in one document. This may complicate and reduce its value. People are more likely to read short documents, than long ones.
• Don’t omit essential information because it’s "obvious."
  • What is obvious to you and to your associates (who are as experienced in the subject as you are), may not be known at all to others.
  • And even if you or they do know the "obvious," you and they may forget to apply it. What we often need isn’t so much to be informed, as to be reminded.
• For unusual or complex information that isn’t practical to cover in your document, refer the user to other documentation or say that they should ask for it. Don’t just ignore such information.
• Include information such as the following, about a project —
  • Overview, including an account of how and why the system evolved and where it is heading.
  • What is being done — the design concept.
  • Who is doing it.
  • Where it is being done.
  • When it is being done — the schedule.
  • How it is being done — the design determinants.
  • Why the particular approaches (the "How") were chosen, including trade-off studies or analyses which considered other possible approaches.
• Design assurance — test plans, quality control, ....
• Design problems and actual or proposed solutions if known.
• interfaces.

• Explain How To Do Things Intelligently — There is a tendency for documents to focus on how to do things ... but not on how to do them intelligently. For instance, computer software manuals usually have much detail on how to use each individual command in the language. But often little is said that will help to give users an understanding of the overall system, so that they will know how to use the system intelligently. Documents should provide overall discussions and examples that will help users know how to put the individual items together in an intelligent way for their specific needs.

• Emphasize The Why Of Things, Not Just The How To Do It — Explanations and examples of how to do it are important, to be sure. But if that’s all you give, users are limited to doing what you tell them and, moreover, they won’t know what to do if something goes wrong and you haven’t covered that situation. However, if you tell them the why of things, they’ll have a better understanding of what’s going on and how to handle unusual situations and problems.
CONCISENESS

- The Fewer The Words, The Better. But —
  - Don’t be so brief that your writing is difficult to understand, or may easily be misunderstood.
  - "Telegraphic" style usually should be avoided.
  - Even though several short sentences may result in more words than one long sentence, often the several short sentences will be clearer.
  - Present only essential information. Too much information can be just as bad as too little. It may delay publication of the document, obscure the essential information, confuse users, and unnecessarily consume their time. If you need to give little-needed information, make it brief. Or put it in an appendix, or in a supplement sent only to people who need or want it.
  - Don’t go into much detail on how hard it was to get the information for the document, do the study for it, write it, etc. You may want to ensure that your management knows how hard a time you had in doing the work. But others usually don’t need or want to know this. Tell it to your management in a separate memo, or at the back of your document. But if you really feel that it’s important for users to know, then tell it to them up front, perhaps in the INTRODUCTION.
  - Just because you have spent much time and effort getting much information for your document, don’t feel that you must include it all because “it’s there” ... or that you should include it all to show how much work you’ve done. Include what users need and want. No more.
  - The producer of the Jedi movies told how over 100 people worked for a year to build a set, for a scene that took just two minutes in one of the movies. He said that in his opinion the biggest mistake made by producers of science fiction movies, is that when they spend much money to build a set, they then feel that they should get their money’s worth by using the set as much as possible in the movie. He said that he feels they end up with the reverse of “getting their money’s worth” ... they degrade the movie by using a set more than it should be used. He said that he felt that his set, on which 100 people worked for a year, was essential to the plot, but that two minutes was enough. More would have been too much.

- Don’t repeat the same information in more than one place in a document, unless you have a good reason.
- If you must do so, use the same wording, the same order, and the same format in each place ... unless you have a good reason for doing otherwise.
- To totally eliminate any doubt, state that you are repeating the information, perhaps with different wording, in a different order, and with a different format. And tell the reason for the repetition and for the differences in wording, order, and format.

- Information to be used just once and in just one place (for instance, how to get a computer job number, which would only be done once at a computer center input counter), might not be needed in a document. In the document, you might just advise the user to ask for assistance at the time and place that it’s needed. The reason that I say this, is because directions that perhaps can be told and demonstrated in just a minute or two, might take hours to write and even then not be clear. However, if the directions are critical and there’s the possibility that no one might be around when the user needs them, then of course you should include the information in the document.

- Don’t assume that the bigger a document is, or that the more documents there are, the better. Often the reverse is true.
  - "The project kept verging on a pitfall, and occasionally falling into it. that is very typical of large projects — that in our emphasis on documentation, we kept missing the mark and kept getting quantity rather than quality. We got stacks of documents a foot thick. It was clear that nobody was going to read them, and in fact nobody ever could have read them. They were useless." (From a debriefing report by the author of this handbook.)

- Know When To Stop.
  - A manager issued a memo asking people to take care of the new office furniture. The manager ended the memo with, "I earnestly request your cooperation with respect to the foregoing." "I earnestly request your cooperation" would have made a strong ending. But "with respect to the foregoing" spoiled it with a meaningless, bureaucratic phrase.
CONCRETENESS

- "In prose, the worst thing one can do with words is to surrender to them. When you think of a concrete object, you think wordlessly, and then, if you want to describe the thing you have been visualizing, you probably hunt about till you find the exact words that seem to fit it. When you think of something abstract you are more inclined to use words from the start, and unless you make a conscious effort to prevent it, the existing dialect will come rushing in and do the job for you, at the expense of blurring or even changing your meaning. Probably it is better to put off using words as long as possible and get one’s meaning clear as one can through pictures or sensations.” (George Orwell)

- Ideas are better and faster understood and remembered if they evoke images that are concrete, meaningful, and familiar. Relate ideas to conditions that users are likely to be familiar with in their everyday lives.
- Saying that it’s 239,000 miles to the Moon doesn’t evoke much of an image. Saying that it’s over nine times the Earth’s circumference at its equator is better. Saying that it’s about 80 times the one-way distance from New York to California is still better.
- Words that arouse an image in the user’s mind are better than abstract words. Does the word refer to a person, place, or thing that can be seen, heard, felt, tasted, or smelled?
  - Say "It rained every day tor a week."
  - Not "A period of rainy weather set in."
  - Winston Churchill talked of blood, sweat, and tears ... not of courage, energy, and sadness.
- Image | No Image
  Fire | Combustion
  Transistor | Device
  Oscilloscope | Equipment
  Light | Illumination

- Specific language conveys more information than does general language. Specific language is also more interesting. Thus it is more likely to be read, and also to be understood and remembered. Use specific names of people, places, and things, specific times, and specific actions.
- Say "Pat Smith will go to the ABC Company in New York on June 7, to repair their broken X1 machine." Not "The repairperson will go to the customer’s premises at the earliest possible date to work on the subject equipment."
- Say "Visit our book distribution center and see our customer service capabilities for yourself." Not "Take our familiarization tour."
- Say "Attached is our 7-page, 4-color brochure." Not "Attached is collateral material."
- Minimize readers’ need for —
  - Calculations — By providing detailed, specific conversion tables, graphs, charts, etc.
  - Judgment — By providing detailed, specific decision tables.
  - Writing — By providing a form on which users can simply check off or write in their responses.
  - Interpretations — By trying to consider all of the possible situations that may be encountered by users.
CONSISTENCY

- Be consistent in your use of technical terms. Pick the term that is most familiar to users, and that is short, simple, and specific, and stick to it. If there are several possible meanings to a technical term, stick to one and make clear which meaning you are using.
- Don’t say “machine” in one sentence, and then “computer,” “processor,” and “XYZ Computer” in others, when you always mean the same thing.
- Don’t refer to the same thing as a “command,” an “instruction,” and a “function” in different places.

- Be consistent in your use of non-technical terms and words. Using different words for the same thing gives variety, but it also causes misunderstanding.
- Don’t say “memorandum” in one sentence, and then “document,” “report,” and “paper” in others, when you always mean the same thing.
- The following sentence has four non-matching pairs: "A large increase was reported in seven of the areas, and a less significant rise occurred in twelve instances." (Large, less significant ... increase, rise ... was reported, occurred ... areas, instances)

- Be consistent in your use of verbs. One can “press,” “depress,” “hit,” “tap,” or “strike” the keys on a computer terminal. And one can “enter,” “input,” or “type” data. Always use the same word for the same action.

- Be consistent in the form of terms. Are a “filename” and a “file name” the same thing? A “database” and a “data base”? “On-line” and “online”?

- Be consistent in capitalization. Are the “BEGIN,” the “Begin,” and the “begin” computer commands all the same thing? Always write it exactly as people will have to use it. If, for example, people have to enter a computer command name in all lowercase letters, then always write that name in all lowercase even if it is the first word in a sentence. This is important, not just for the sake of consistency, but to avoid confusing users and to reinforce the correct behavior.
- Say “begin is the command to use when ....” Not “Begin is the command to use when ....”

- Be consistent in the order of terms in sentences.
  - Say “The BEGIN, IF, DOWHILE, and END commands are important. Use the BEGIN, IF, DOWHILE, and END commands ....” Not “The BEGIN, IF, DOWHILE, and END commands are important. Use the DOWHILE, IF, END, and BEGIN commands ....”
  - Use consistent language forms for parallel ideas —
    - Say “Turn dial to 90. Raise the lever.”
    - Not “Turn dial to 90. Lever should be raised.”

- Be consistent in lists.
  - Say “1. Plan before you write.
    2. Select what to include.
    3. Organize the material.”
  - Not “1. Plan before you write.
    2. Selecting what to include.
    3. You should organize the material.”

  - Suppose you have several pairs of lists, where you list good and bad ways of doing things. Don’t put the good ways first in some lists, and the bad ways first in others. Or, if good to bad items are listed in the same list, don’t start with the good in some lists, and with the bad in other lists. Note — I think that it’s better to put the good or correct way first, because what people see first is what they may remember the best. They may not even bother to look at the second way at all, or they may just hastily glance at it.

- Be consistent in your use of personal pronouns. Don’t say “I” in one place and then “we” in another. State at the start of the document how you will refer to everyone, and stick to it. Note — I suggest that you say I when you refer to yourself (the author). Saying “we” sounds pretentious and can be confusing, and saying “the author” also sounds pretentious.

- Be consistent in your use of words. Don’t use the same word in two different senses in the same sentence or paragraph, or even in the same document.
  - Say “The number of items was modified several times.”
  - Not “The number of items was modified a number of times.” (Better yet, in this case be specific and say, “The number of items was modified ten times.”)
• Be consistent in your use of conventions.
  • Don’t use a convention in your document that is very different from that used in your company or industry.
  • Don’t use the same convention in two different ways, in the same document. For instance, in one document italic type was used in the text to denote computer command names, and in examples to denote variable information.

• Be consistent in level of detail. Don’t go into great detail on topics with which you are very familiar, while you skim over or omit other, equally important topics. This may burden users with too much information on some topics, and deprive them of information on other topics. It may also confuse users, as they may naturally assume that the topics on which you have provided much information are the most important.

• Be consistent in level of accuracy. If it isn’t possible to discuss everything at the same level of accuracy, clearly indicate the level of accuracy of each section.

• Check for internal consistency within a section or a document. If the same information is repeated in different sections or documents, perhaps in different formats, ensure that the information in one section or document doesn’t contradict that in another. The possibility, or even probability, of this happening, is a good reason for minimizing duplication.

• Be consistent in your use of examples, pictures, diagrams, etc. Ensure that the text doesn’t say one thing, while the example shows something different.

• It’s especially important to pay attention to consistency when updating material. A common error is to update the material in one place, but not in another place of the same document. Another common error is to update the text but not the examples, or vice-versa. These common errors are good reasons for consolidating related information in one place.

• Consistency is important but, as with any good thing, it can be overdone.
  • Try to be consistent within the present document. If several persons are each writing separate sections of the same document, or separate documents that are related to one another, then give extra attention to ensure that what they write is reasonably consistent.
  • Use style rules based mainly on good sense ... not just on precedent. Don’t try to be consistent with past documents, unless there is a good reason to do so.
FAMILIARITY

- Use terms, abbreviations, and symbols that are familiar to users. Even if you are writing for highly technical people who are familiar with technical terms, they are still more familiar with everyday words.
- Say "All the fish died."
  Not "The biota exhibited a one hundred percent mortality response."
- Define terms that may not be familiar to users. Define them the first time they are used, or in a Glossary. If you define them in the text, consider putting them in a box or otherwise calling attention to them, so that users can easily refer to them.
- When you use a new or complex word, make the other words in the sentence familiar. Don’t use several new or complex words in the same sentence.
- Be wary about inventing or using unfamiliar codes, words, symbols, illustrations, etc., in situations where plain English will do. An article reported on a study by a police department:
  - They found that the 10-code used by many police departments, and popularized by TV and movies, causes more errors than does plain English. Using the code, 113 errors were made during 200 randomly selected police calls. Even after a refresher course, 85 errors were made in 200 calls. Using plain English, there were only 14 errors in 200 calls.
  - It would seem that the codes would at least save time.
But the study found that using plain English instead of code saved nearly 3 hours each day. So now they say, "We’ve got this fellow in back of the van," instead of "10-95."

- The above study has a moral that goes beyond its specific topic. Don’t introduce unfamiliar language of any sort, unless you have a really good reason to do so. If you must introduce unfamiliar language —
  - Link the unfamiliar with the familiar.
  - Provide a training course.
  - Even after the course, allow for ample learning time.
  - Introduce the new system in non-critical operations, so as to obtain experience with it — to see how it might be improved, or if it should be used at all.
  - Provide for both human and automatic error checking, if possible.
  - After a time, do a study to see if your system of codes is really working any better than the 10-code system discussed above.
INTEGRITY

- "The great enemy of clear language is insincerity."
  (George Orwell)
- Tell the truth, the whole truth, and nothing but the truth.
- Some unclear writing is intentional, to ignore, gloss over, or cover up unpleasant details, or to try to make users believe things that just aren’t true.
- A car spokesperson insisted that the cars being sold didn’t break down. It was admitted, however, that sometimes they “failed to proceed.”
- Supermarkets are terming spoiled fruit and vegetables “distressed produce.”
- Instead of admitting that friends were on drugs, a student was quoted as saying that they had a “pharmaceutical preference.”
- And a psychiatric center came up with a novel way of admitting that a patient had been beaten to death. The patient, they said, “died of inappropriate physical abuse.” Apparently appropriate physical abuse would have been okay.
- Don’t ignore unpleasant details.
- Don’t gloss over or cover up unpleasant details with vague statements, euphemisms, or generalities. One book advised that you should emphasize what things are or will be, instead of what they aren’t or won’t be. And that you should emphasize what you can and will do, not what you haven’t done, can’t do, or won’t do. It certainly is important to stress the positive, or nothing would ever get done. But to ignore or hide the negative is just plain lying. Give a true version of both sides of the picture.
- Don’t hide unpleasant details by devoting just a few lines to them, while devoting pages to the pleasant details.
- Don’t hide unpleasant details by burying them in a mass of boring details that users are likely to skip over.
- Don’t have “secret subjects,” perhaps to hide who did something.
  - Say “After analyzing the data, Pat Smith and I recommended...”
  - Not “After analyzing the data, the recommendation was made to...”
- Don’t use the word “they,” unless it’s perfectly clear who they are.
  - Say “Jack and Jill went to the meeting. Then they went to lunch.”
  - Not “They went to the meeting. Then they went to lunch.”
- Don’t lie, exaggerate, or put on airs. Not even once! If you do, users may suspect everything else that you say.
  - “When one is caught bluffing too often, it is difficult not to wonder whether or not that individual is bluffing on the next issue.” (Joseph M. Fox)
- If you are reporting on a study, don’t just tell about the good results. Also tell about the blind alleys, inconclusive results, and outright failures. They may be just as important for users to know, as the good results. Moreover, if you don’t mention obvious alternatives, users may wonder if you tried them ... and if not, why not.
- If your final results are inconclusive, say so. Don’t make it sound as if everything has been neatly tied up.
- If a study or a project failed, admit it and tell —
  - Why it failed.
  - What, if anything, can be salvaged from it.
  - What, if anything, can, or is, or will be done.
- If you don’t know something, say so. There is nothing wrong with not knowing. But there is something terribly wrong with not acknowledging, to others and perhaps even to yourself, that you don’t know. If you don’t acknowledge it to others, it’s deceitful. If you don’t acknowledge it to yourself, it’s immature.
  - “It wasn’t until quite late in life that I discovered how easy it is to say, I don’t know.”
  (W. Somerset Maugham)
  - “I was gratified to be able to answer promptly and I did. I said that I didn’t know.” (Mark Twain)
- Don’t use many hedge words to enable you to take both sides of a position and offend no one.
  - Say “This won’t work, because...”
  - Not “This may perhaps be a good idea if it is implemented correctly and if the timing is correct. But it seems that there appear to be some problems that may arise.”
• Of course, if you don't know or aren't sure, say so. Not with hedge words, but with direct words.
• Say "I don't believe that this will work, because .... But I can't be sure."

**Be conscientious in every aspect of your document.**

Make it as accurate, complete, clear, etc. as you can. Keep in mind that your document is going to affect real human beings — their home or working environment, their welfare, perhaps their health and even their lives.

You'll probably never know them, see them, or even hear of them. If you did know them, you wouldn't dream of picking their pocket or of hitting them over the head. But dishonesty in a document, of commission or omission, may hurt them far worse than picking their pocket or even hitting them over the head would. Moreover, a dishonest document may hurt, not just one person, but many, maybe hundreds or thousands or even more people.

Perhaps you keep a picture on your desk of your wife or husband, your children, or other loved ones. As you write, keep in mind that, no matter how minor and unimportant it may seem to be, your document will affect the loved ones of other people, just as dear to them as your loved ones are to you. And it may even affect your own loved ones.

• Some people may feel that the preceding section (not to mention this section) is, as one reviewer wrote on the draft of this book, "a bit too emotional, here." I know this reviewer and respect him highly. I agree with him that the preceding section is emotional. But I disagree with him that it's "too" emotional.

This desire to tone down emotions in our business and professional lives is ... in my opinion ... one of the tragedies of life. The fact is that people are affected by what we do at work. What we do is not just an impersonal "routine." You can shut your eyes to it ... you can bury your head in the sand ... you can live in an ivory tower. But the fact remains that what we do does affect people. Not just "paper" people. **But real, flesh and blood human beings.**

Sorry to bother you with all of these gushy emotions. But that's the way I see it. Maybe if more people in the world had gushy emotions, and weren't hesitant to express them, we might have less need for megaton nuclear weapons on near hairtrigger alert. Which do you prefer? A "nice," "clean," "no responsibility," impersonal work environment? Or you and your loved ones, not to mention everyone else, living on the brink of nuclear annihilation?

I know that, most likely, you are now thinking that you are as far removed from global decisions as can be. But I disagree with you on that. What each person thinks, feels, and does, contributes to the consciousness of the human race as a whole. How can there be love, responsibility, and peace between nations, when individuals show indifference, irresponsibility, and hostility to one another? Think about it.

• "I want to tell you something. You are not just selling milk. Every time you top a bottle of milk, think of some healthy little baby to whom that milk is life. You are not just selling a product, you are selling something that is building bone and muscle and life." (President of New England Milk Dealer's Association, quoted by Norman Vincent Peale)
ORGANIZATION

- "The human mind can seemingly understand any amount of complexity ... as long as it is presented in small, simple chunks that are well organized."
- Organize the document into short sections, each with a single idea.
- Start each major section on a new page. This will cost some more in paper and printing costs. But it will help users to—
  - Understand the organization of the document better.
  - Find sections more easily and more quickly.
  - Reduce errors.
  - And it will make it simpler for you to revise the document.
- Combine related information in one place. Refer to it elsewhere, if it's also needed there.
- Minimize cross-referencing. When needed, give the page number of the referenced information, not just the section name or number.
- Use tables, charts, checklists, lists, pictures, etc., instead of, or in addition to, text.
- Organize the document as follows—
  Discuss First
  General Interest Topics  Special Interest Topics
  Principles  Details
  Important Details  Minor Details
  Permanent Issues  Temporary Issues
  Matters That Affect Many People
  Few People
  Etc.
  Etc.

- Put the most important information first. There are two reasons why writers may not do this.
  - First, their pride may be hurt by the thought that users won't read every word of their document. But users are busy people. Your document is just one of many that they have to look at, not to mention all of the other things that they have to attend to. Do you read every word of every document that is sent to you?
  - Second, writers may want to end dramatically, and so may save the most important information or conclusions for last. But if you do this, it may not be read at all, or it may not be given proper attention by users.
POSITIVENESS

- Positive sentences are clearer than negative sentences. According to one study, it takes about 50% longer to understand a negatively worded sentence (with words as "no," "not," "except," and "unless"), than it does a positively worded sentence. And the negative sentence may easily be misunderstood.
- Say "Consult" your supervisor before taking action.
  Not "Don't" take action without first consulting your supervisor.
- Say "Positive" sentences increase readability.
  Not "Negative" statements do not increase readability.
- Say "Leave" this box blank if you already have the book.
  Not "Do not write" in this box if you already have the book.

- Double negatives can be very hard to understand.
  Positive    Double Negative
  only when    not ... until
  only if     not ... except
  only if     not ... unless
  accept      not ... reject
  agree       not ... disagree
  legal       not ... illegal
  succeed     not ... fail
  present     not ... absent
  like        not ... unlike
  passed      not ... fail
  usually     not ... often
- Say "Do this only when needed."
  Not "Do not do this until it is needed."
- Say "The contract becomes valid only if everyone approves."
  Not "The contract does not become valid unless approved by everyone."
- Say "They were present."
  Not "They were not absent."
- Say "X is like Y."
  Not "X is not unlike Y."
- Say "They passed the test."
  Not "They did not fail the test."
- Say "Pat is usually on time."
  Not "Pat is not often late."

- Here are some other positive words to be used in preference to negative words. The positive words are easier to understand.
  Say      Not
  minor    not important
dishonest not honest
forgets    doesn't remember
ignores    doesn't pay attention to
suspects   doesn't trust in
dislikes   doesn't like

- If you do use "no," "not," etc., consider emphasizing the negative word with underlining or with bold italic type. Otherwise, users may overlook the negative word and thus may interpret the sentence in exactly the opposite way to what you intended.
  "It is not ready."
  "Never do that."

- People more easily understand sentences with the word "more" or "over" ... than with the word "less" or "under" or "at least."
- Say "Push the switch only if the engine speed is more than 3000 rpm."
  Not "Push the switch only if the engine speed is at least 3000 rpm."
- Say "Check this box if your trip is over 100 miles."
  Not "Check this box if your trip is at least 100 miles."
- Say "Declare the interest from savings if it is more than 100 dollars."
  Not "You need not declare interest from savings if it is under 100 dollars."

- Phrase questions so that users are asked to check, underline, or circle what does apply rather than what does not apply.
- Say "Check this box if you are over 21."
  Not "Check this box if you are not under 21."

- Avoid double questions.
- Say "Are you over 21? Are you under 120 lbs. in weight?"
  Not "Are you over 21 and over 120 lbs. in weight?"
• Putting negative and positive phrases in opposition to one another, makes for good contrast.
• "Not charity, but simple justice."
• "Ask not what your country can do for you ... ask what you can do for your country." (John F. Kennedy)

PRECISIONNESS
• **Be direct**, so that you can't be misunderstood. It's more polite and also more fair, to others as well as to yourself, to say exactly what you mean.
• **Use specific language about measurements.** Don't say things like, "It takes a long time to do that job." One person may assume that "a long time" means an hour, while another may assume that it means a week. The same goes for costs, quantities, and all other measurements. If you can't give a precise figure, then give an approximate figure. Or give an approximate upper and lower bound, such as, "It usually takes from about 5 to 8 hours to do that job."
• **Say** "This information would cost 1000 dollars to obtain."
• **Not** "This information would cost too much to obtain."
• **Say**
  - Daily
  - Turn until hand-tight
  - At least 3
  - Between $7000 and $9000
  - On July 23
  - A 23% gain
  - Before Thursday

• **Not**
  - Often
  - Turn a few turns
  - Several
  - Under $10,000
  - In the near future
  - A sizable gain
  - As soon as possible

• Here is an example of how to be increasingly specific —
  • Someday
  • In the near future
  • Soon
  • As soon as you can
  • In a couple of weeks
  • Within 10 days
  • By February 2

• When presenting facts, data, etc., beware of the following shortcomings —
  • Superficial analysis of data.
  • Conclusions not justified by the evidence presented.
  • Failure to recognize and justify assumptions.
  • Failure to qualify tenuous assertions.
• Use specific language about people.
  • Say "Terry can discuss problems with Pat."
    Not "Terry can relate to Pat."
  • Say "Terry refuses to speak with Pat."
    Not "Terry won't deal with Pat."
  • Say "Terry makes many typing errors."
    Not "Terry causes problems."

Anaphora are words or phrases that refer back to a previous word or words — "he," "she," "it," "they," "there," "that," "which," "the above," "defined earlier," "the second paragraph," etc. Such words slow down the user and often sow confusion. To avoid this problem, either repeat the word(s) that you are referring to, or reword the sentence. See the next item for an example.

Often a source of confusion is who did (or is doing, or will do) what.
• "Mary told Sue that she would manage the job." Who is to manage the job, Mary or Sue? To avoid confusion, repeat the name... "Mary told Sue that she, Mary, would manage the job."

• Clearly identify —
  • Specific Procedures — So that they won’t be confused with general discussions.
  • Examples — So that they won’t be confused with procedures or data (and vice versa).
  • Opinions, Assumptions, Recommendations, Value Judgments, And Estimates — So that they won’t be confused with facts (and vice versa). And tell how the opinions, etc. were arrived at.
  • Proposals — So that they won’t be confused with actual plans (and vice versa).
  • Preliminary Information — So that users won’t assume it is "final" and base their plans on it.

• Be careful about using loaded words, such as "That great [bad] equipment ". "The well [poorly] designed function ... " The crystal clear [incomprehensible] memorandum ..... " Whether you use words of praise or of criticism, back up the words with facts. Otherwise, you may mislead users.
  • They may read more, or less, into your praise or criticism than you intended.
  • They may have different criteria for judging than you do. If you don’t state the criteria that you are using to judge the person or thing, users have no way of knowing if your criteria are the same as theirs. For instance, equipment can be judged on reliability, cost to purchase, cost to operate, cost to maintain, energy efficiency, size, appearance, safety, durability, versatility, and other factors. Just saying that the equipment is good or bad, without going into detail, may be worse than saying nothing about it.

• Clearly identify the relationship between topics in your document.
  • The order in which you discuss topics may influence people.
    • They may assume that the topics you discuss first, are the most important. Are they?
    • If your document is long, users may read just the first few sections, and not even get to the last sections. Or they may just read the first and last sections.
    • Events and actions may be sequenced by — order as they really occur ... order of importance ... frequency of usage ... etc.
  
• To minimize the above problem —
  • Explain at the start, the order that you are using and why.
  • Clearly identify the relative importance of topics.
• The amount of material that you devote to each topic may influence people. If you devote just a few sentences or paragraphs to one topic, while you devote several pages to another, users may assume that the topic to which you devote several pages is more important or more complex. Is it? Or is it just that you happen to have more information on that topic, or that you are personally more experienced, or interested in that topic? Whatever the reason, explain it.

SIMPLICITY

Writing guides often emphasize that one should write at an educational level appropriate to users. I think that you should write below that supposed level because —

• Unless your document is directed to just a small handful of people, it is likely to be read by people of varying educational levels, reading skills, and time and patience, and under varying conditions.

• Writing that is unnecessarily complex, or that is poorly organized and poorly written, leaves it to users to digest and organize the meaning of the author. When you write as simply as possible, regardless of the supposed educational level of users, you are doing this digestion and organization yourself.

• While college graduates may theoretically be able to understand college level complexity, they can understand simpler language faster, easier, more pleasantly, and more accurately.

• A user’s actual reading level may differ from his or her educational level.

• If the document must be read under adverse conditions — for instance, while the user is in a hurry ... or is under pressure ... or is distracted by telephones ringing or people talking or machines whirring ... or is concerned about personal matters — then the ability to read complex material goes down. And, let’s face it, documents usually are read under adverse conditions.

• People are more likely to read a document if it’s written as simply as possible. If it appears too involved, they are likely to avoid it if they possibly can, or just to skim over it quickly.
TIMELINESS

- If what you are writing needs to be issued before it can be adequately reviewed, tell why it was issued in such a hurry. And mark it "Draft" or "Preliminary."

- If the information you are writing about is likely to change often, you could make changes endlessly ... with the result that your document would never be issued, or at least would be late. Set a cutoff date after which you will make no changes, and you will issue the document. Then issue updates or revisions as needed.

- If there are topics that you know will need to be covered in your document, but about which you have no information by the cutoff date, put in section titles for those topics and say, "To be included later." This will —
  - Enable you better to organize your document right from the start.
  - Remind you to put in the information when it becomes available.
  - Inform users that those topics do exist, and will be covered later.

- If what you are writing is likely to change often, design the document for easy revision.
  - Break it into relatively short sections, with each section starting on a new page. This is useful for any document, to improve clarity. It's especially important for a document that will require frequent change, so that a change to one page won't require several pages to be retyped.
  - Issue the document in looseleaf form, or in some other form that can be modified easily and inexpensively. Don't issue it as a costly bound book that will have to be thrown away in a short time ... unless factors such as convenience or appearance justify the effort and cost.

- Just below the Title — State the date and the system version to which the document applies ... names and editions of other documents on which the document is based ... and other documents that this document supersedes.

- Document data first, and keep the data up-to-date.
  - Document interface data used by many persons, separately from internal data used by just a few persons. The interface data are usually shorter, and are needed sooner, than are the internal data.
  - "Until late in the project, there wasn't nearly enough attention given to the documentation of the data as distinguished from the documentation of the programs. I participated in a couple of projects, where the real problem that underlay the difficulties we were having was that the global data base wasn't under any central control and central documentation. I think that given my choice of either one or the other, I would have documentation of the data rather than of the programs. Eventually we will have to produce both, but we had better get the documentation of the data out first."
    (From a debriefing report by the author of this handbook.)
  - "We produced a specification that defined both the internal workings and the external interfaces of a module in a single document. They should be in two separate documents. The interface information is usually smaller, and it's where the problems are. It should be separated from the internal information, so that it can be distributed very rapidly and kept up-to-date. It should not be combined with the longer and more detailed internal information on the program, which would slow up dissemination of essential interface information."
    (From a debriefing report by the author of this handbook.)

- Include a note asking for suggestions on how a periodically issued document could be improved. List possible ideas for changing the document, and ask users to check those ideas about which they feel strongly for or against, indicating their thoughts on the matter. For instance —
  - Change the content or the format.
  - Add new sections or delete existing sections.
  - Combine with other documents.
  - Issue at different times.
  - Eliminate the document.
  - List the various sections of the document, and ask users to check which sections they use Always, Sometimes, Rarely, or Never.
• Ask those users who no longer need or want the document to let you know, so that you can take their names off the distribution list. Include a self-addressed sheet or envelope for this purpose. Or say that unless each recipient tells you by a certain date that they do want to continue receiving the document, they will be taken off the list.

• Consider if you should reissue the entire document, rather than update pages that users are supposed to insert in their copy of the document. Reissuing the entire document may cost more, but it has many advantages —
  - Asking users to insert update pages involves time on their part ... probably costing far more money than is saved by not reprinting the entire document.
  - Users may insert update pages incorrectly.
  - Users may not bother to insert update pages at all.
  - Users can never be really sure that their document is up-to-date. Who is going to bother to check every page with the Page Inventory (assuming that there is a Page Inventory, and that it is current)?

• Have a Page Inventory listing each page in the document, and the issue dates of revised and new pages.

• Discuss changes and additions from the previous edition of the document in a Cover Letter, or in the Abstract or Introduction of the document.

• Send a sequentially numbered Cover Letter with each update. Ask users to file the Cover Letters at the beginning of the document.

• Have vertical lines in the margins of pages to indicate changed and new material, or next to the page number to indicate that most or all of the page is changed or new.

• Issue a new Contents with every set of update pages.

WARMT

• If you feel that you are required to write in a formal, stiff, "official" style, ask yourself, and perhaps your manager — Who requires it? What regulation? Why?

• Ask yourself — If I had complete freedom to write any way I wanted, how would I write? Who or what keeps me from writing that way now? Why? What can I do about it? What should I do about it? What will I do about it?

• Write for one person, preferably someone you know and like or love, and for whom you would want to produce as good a document as you can. Not for a faceless "them." Visualize that one person and write to him or her. Be open and honest about the subject. Tell the problems and pitfalls of what you are writing about, as well as the good points. Tell them what you would want them to tell you if they were the writer and you the user. And tell it to them in the organized, concise, clear way in which you would want them to tell it to you.

• Be informal and personal. Use "I," "you," "we," "us," "our," "my," etc. These words are more friendly, more specific, simpler, shorter, and clearer than are the contrived phrases needed to be formal and impersonal.

• Say "We found that ...." Not "It was found that ...."

• Say "You should ...." Not "The user should ...."

• Say "I hesitate to say that ...." Not "One hesitates to say that ...."

• Use "you," "your," etc., more than "I," "we," "us," etc. This, of course, involves more than just changing your words. It means changing your focus from yourself, to the users of your document.

• Say "Now you can go from New York to Los Angeles at any hour." Not "We are pleased to announce our new hourly schedule from New York to Los Angeles."

• Say "So that your request can be met promptly, please send it in writing." Not "To help us process this request promptly, we must ask for it in writing."

• Say "You have your choice of this pen in 3 colors." Not "We offer this pen in 3 colors."
• Be natural. Don't write in a way that you wouldn't normally speak. To help guard against this, read your draft out loud to yourself, and to one or more associates if possible.
  • Say "Thanks for your letter."
  • Not "I acknowledge receipt of your letter."

• If you must write No to a request —
  • Don't do it in haste — Think it over. Maybe you can say Yes to part of the request.
  • Don't do it in anger — Wait until you calm down.
  • Don't do it casually — Explain your real reasons for saying No.
  • Don't do it vaguely — Make sure the person knows what you are saying.
  • Don't do it too briefly — If you say No in just a few words, the person may feel that you didn't give them any thought, that you just casually brushed them off. If you explain a bit, they'll at least feel that you gave them some consideration.

• Never belittle anyone. Your goal is not to put down or anger the person. Your goal is to get the needed response (information, action, etc.). A firm but polite approach is far more likely to get the needed response than is a negative approach.

• If you need to criticize or complain about someone or something —
  • Find something nice to say also.
  • Offer suggestions as to what should be done.
  • Criticize the action or the thing, but not the person.
  • Make your criticism specific — to limit its impact on those involved, and also so that they will know exactly what you want.
  • Say "The equipment, which is currently on a 3 foot high table, should be set on a table 4 1/2 feet high."
  • Not "The incompetent person didn't set up the equipment correctly."

• Don't use sarcasm. Some people may take offense at it. And other people may not even realize that it's sarcasm. They may take it literally, thus interpreting your words as far worse than you intended.
• Humor and cartoons can be useful in some types of writing. But —
  • Be careful that they won’t offend or confuse anyone.
  • Make sure that they won’t downgrade the importance of your document, or of you as the author.

• Don’t anger users. Be careful not to sound dogmatic or aggressive. You may be a highly respected authority. Your opinions may be the best in the world. But others are entitled to their opinions.

• Show some feeling about what you are writing, especially if the purpose of your document is to evaluate something or to sell it. If you think that it’s great (or terrible), say so with feeling. A few heartfelt words will get your message across far better than would loads of dry words.
  • Say “This is a truly innovative idea that I am sure will be of great value.”
  • Not “This is a good idea that should prove useful.”

• Be polite with positive, encouraging words. Minimize negative, critical, discouraging words. However, don’t gloss over things. Be as clear as you can be about negative aspects.
  • Say “You did not....”
  • Not “You neglected to....” or “You failed to....” or “You forgot to....”
  • Say “You say that....” or “You indicate that....”
  • Not “You claim that....” or “You assert that....” or “You allege that....”

• Don’t insult or try to intimidate people. Words as the following are better left out.
  • “It should be obvious that....”
  • “It is clear that....”
  • “Naturally....”

• Especially bad are words starting with un — unsuccessful ... unhappy ... etc. Better to use not.
  • “I’m not interested” is more emphatic than “I’m uninterested.”
  • Or, express a negative in positive form — “trifling” instead of “not important” ... “ignores” instead of “does not pay attention” ... “dislikes” instead of “does not like,” etc.

• Consider if you want to emphasize the positive, or the negative —
  • “The tank is half full.”
  • “The tank is half empty.”
  • “Thirty-eight of the forty tests succeeded.”
  • “Two of the forty tests failed.”

• Enthusiasm is nice. But too much can be ridiculous.
  • Say “I am happy to offer you a position on our staff of educated and skilled persons. The work is challenging and pays a good salary.”
  • Not “I am extremely happy to offer you a position on our staff of highly educated and exceptionally skilled persons. The work is extraordinarily challenging and pays a very good salary.”
• A very positive word such as hope can be negative in some contexts, lowering the confidence of both the writer and the users.
  • Say "I expect to ..."
    Not "I hope to ..."
  • Reply to a letter or a memo or a verbal request on time if there is a schedule, or promptly if there is no schedule. If you can't, phone or write and tell why. If you were away, then when you get back and reply, tell why your reply is late. Late or nonexistent replies are unbusinesslike, impolite, and just plain rude. People who would never dream of keeping someone standing in the hallway way past the time for their appointment, may think nothing of keeping them waiting for a written reply, perhaps forever. And remember ... late or nonexistent replies are not just bad for others. They are even worse for you. They are a good way of earning you the reputation for being negligent and even irresponsible.

**DESIGN — BASIC ASPECTS**

**CROSS-REFERENCES**

• Minimize cross-references within the document. They can be a nuisance to users. If users don't look them up, the users feel uneasy. If users do look them up, it takes time and breaks their reading flow.

• Keep references to other documents to a minimum. When you must use them, give complete information. Make sure the reference is actually available. If it isn't but you still want to list it, say "No longer available."

• Make references to page numbers, not to section numbers. This involves a bit more effort for the author or editor, but saves time for users. It also encourages users to look at the references. They may not bother, if they have to start hunting for section numbers.

• If you have a References or Remarks section at the end of each part of the document, or at the end of the entire document, put in the page numbers to which the references or remarks apply. For instance —
  
  **Page 1**
  1. Reference or remark pertaining to page 1
  2. Reference or remark pertaining to page 1
  **Page 2**
  3. Reference or remark pertaining to page 2
  4. Reference or remark pertaining to page 2
  ...

• Put footnotes at the bottom of pages to which they apply. Thus users can easily glance at them, without having to start flipping pages.
FOOTNOTES

- Put notes as footnotes on the bottoms of the pages to which they apply, in smaller print than the text. Thus users can easily glance at the notes and see if they are interested in reading them. If you put notes at the end of chapters or of the document, it takes users time and effort to find them, and breaks up their train of thought. Most users probably won’t bother to look for them, but they may have a lingering doubt that they should have looked at the notes, and perhaps they should have. This may leave users with a bad aftertaste for your document (and rightly so).

WRITE-IN SPACE

- Leave space for users to write in specific information needed while using the document — for instance, their computer job number. The following was on the Cover Page of a foldout card —

- Name of Application
- Administrator
- Name
- Phone
- Room
- How to Access
- How to Request Paper Forms
- Where to Send Paper Forms and Attachments

FORMAT

Note — The format on this page was used for a computer document, so it might not be applicable to other subjects. However, it’s the idea … not the details … that is being illustrated here — to have a uniform format where applicable.

- Use a standard format to specify information for similar items. Put section titles in the left-hand margin. For instance —

<table>
<thead>
<tr>
<th>PPTP</th>
<th>PRINT</th>
</tr>
</thead>
<tbody>
<tr>
<td>PTR</td>
<td>PRINT</td>
</tr>
<tr>
<td>PUNCH</td>
<td>PUNCH</td>
</tr>
<tr>
<td>READ</td>
<td>READ</td>
</tr>
<tr>
<td>TYPE</td>
<td>TYPE</td>
</tr>
</tbody>
</table>

Examples:

- $PPTP A4.B2S
- $ PPTR 40.A2R

Purpose — To associate a filecode with a peripheral device (normally used with BIC jobs):

- PPTP — Paper tape punch.
- PPTR — Paper tape reader.
- PRINT — Output to printer if not via SYSOUT.

- Within the format, progress from general information for all users, to detailed information for specialized users.

- Put the formats for computer commands (or whatever), directly in the headings … not buried in the text. For instance —

byte (constant, constant, …); 8-bit
word (constant, constant, …); 16-bit

- Underlined items are optional.

- byte and word — Store data items of the size indicated, at the point of occurrence in .text or .data sections. Must not be used in .bss section.
• Types of information to consider putting in the format —
  • Format
  • Definitions
  • Rules
  • Correct Examples (What To Do)
  • Incorrect Examples (What Not To Do)
  • Frequently Asked Questions, and the Answers
  • Frequently Made Mistakes, and How to Avoid and Correct Them
  • Tips
  • References
  • Comments
  • Cautions

HEADINGS

• Organize text with frequent headings. Thus the headings will serve as an outline of the document, showing its organization, as well as labeling sections. This is one of the most important rules of good writing.

• Make the headings clear, meaningful, and consistent with other headings. Not clever or cryptic.
  • Say "What To Do Before You Turn On Your New TV"
  • Not "First Things First"
  • Say "How To Tune Your TV For Cable Operation"
  • Not "Band Selector Switch"
  • Say "How To Name Your Computer Program"
  • Not "PRONAME Command"

• Don’t be afraid of long headings. The main thing is to tell people what they should know.

• Don’t number headings (unless you must have frequent cross-references to sections.) In my opinion, numbers lend an air of complexity.

• Ensure that headings at the same level, all deal with subjects of parallel importance.

• Ensure that headings are parallel in form and logic.

• Don’t have too many levels of headings — three or four should be the limit. More than this is likely to confuse people.

• If chapters are short, put chapter headings in larger, bold italic type at the top of the first page of the chapter, and then start the first section of that chapter on that same page.

• If chapters are long, put chapter headings alone in the center of the first page of the chapter, with the reverse side of the page blank. Use a different color, and heavier weight paper for these chapter heading pages.

• Start major headings on a new page, with text starting an inch or so below the headings.

• Typeset headings in large, bold italic type. Even if the rest of the document is typed on a regular typewriter, you can have headings typeset and pasted into position.
• For a document that's typed on a regular typewriter (and you don't have the headings typeset), make the headings stand out better by underlining them on the master copy with a heavy black marker pen.

• Print headings in color.

• Leave space above, below, and to the side of headings to make them stand out better. Leave more space above headings than below.

• Center main headings. Put secondary headings flush with the left margin.

• Don't start a heading near the bottom of a page, if only one or two lines of text can follow it on that page. Start the heading on a new page.

• Don't have two headings at the same level, one under the other, without any text between them.

• Say HEADING
  text
  HEADING
  text

Not START MAJOR HEADINGS ON A NEW PAGE
  Start major headings on a new page, with text starting an inch or so below the headings.
  TYPESET HEADINGS IN LARGE, BOLD ITALICS
  Typeset headings in large, bold italic type.
  Even if the rest of the document is typed on a regular typewriter, you can have headings typeset and pasted into position.

• Not START MAJOR HEADINGS ON A NEW PAGE
  TYPESET HEADINGS IN LARGE, BOLD ITALICS
  Start major headings on a new page, with text starting an inch or so below the headings.
  Typeset headings in large, bold italic type.
  Even if the rest of the document is typed on a regular typewriter, you can have headings typeset and pasted into position.

NOTATION

Note — The notation on this page was used for a computer document, so it might not be applicable to other subjects. However, it's the idea ... not the details ... that is being illustrated here — to have a uniform notation where applicable.

• Use a standard notation to describe similar items. This enhances accuracy, preciseness, and clarity. For instance —

  NOTATION

  Elements • May be specified in any order ...
  except that if textfile is specified, it
  must be LAST.
  • Elements must be separated from
  one another by one or more spaces.

  [ ] • Brackets around an element indicate
  that it is optional.

  { } • Braces indicate that only one of the
  enclosed elements is to be used.
  Braces within brackets indicate that
  the elements are optional.

  ... • Ellipsis indicates that one or more
  of the preceding elements may be
  used, each separated by one or
  more spaces.

  CR • Press the CARRIAGE RETURN key.
  Note — in the examples in this
  manual, you need to press CR at the
  end of each line of input. For the
  sake of simplicity, CR is usually not
  shown in the examples.

  CTRLa • Press the Control key (tabeled
  CONTROL or CRTL or CTRL) at the
  same time as the character a, or q,
  or v.
PAGE NUMBERING

- Number all pages, even in early drafts. Do this for your own benefit as well as that of people reviewing the drafts, so that the pages don’t get mixed up or lost.
- Probably the simplest and most exact way to number pages is to start with the very first page (the Outside Front Cover) as 1, and then to number following pages 2, 3, 4 . . . . Complex methods showing volume, issue, chapter, and finally page number may be of interest to authors and editors, but such methods just confuse and slow down users. It’s easier to find page 186 than page ill-15-5-2.3!
- Put on the front page of a stapled document, “Page 1 of 20 pages,” so that users will have an easy way of knowing if all of the pages are there.
- If at a later time you need to add pages and you would rather not change existing page numbers, you can number the added pages as 10a, 10b, ....
- If the document is typeset, use large size, bold italic type for page numbers to make them stand out better.
- If you put page numbers in the center (top or bottom — preferably the top) of the page, then you won’t have to be concerned about whether the page will be a right- or left-hand page when the document is printed two-sided — as you would have to be concerned if page numbers were typed on the side of the page. However, page numbers on the outside, top corners of pages are easier for users to find. A word processing system may be able to automatically place page numbers on the outside top corners correctly on the right- or left-hand sides of the pages for two-sided printing.

TITLE/ACRONYM

- The title is the first thing that people see. It may be the only thing, as in an index of titles. So pay attention to it. The best document is of little value if few people are motivated to get it and read it.
- Make the title clear and meaningful. Not clever or cryptic. People want to know — What can this do for me? Tell them.
- Don’t be afraid of long titles. The main thing is to tell people what they should know.
- If your title is more than two or three words, consider using a one-word identifier, or an acronym, to identify the document.
- Say ”QUEST: QUALITY ENVIRONMENT FOR SYSTEM TRACKING”
- Tell if this is a draft, proposal, order, specification, handbook, etc.
- Identify the overall system, and the specific subsystem.
- Make the title specific.
- Say ”A COMPREHENSIVE OVERVIEW OF 60 PRODUCTIVITY TECHNIQUES”
  Not ”A COMPREHENSIVE OVERVIEW OF PRODUCTIVITY TECHNIQUES"
- Use titles in the form of questions that the user might ask.
- Say ”CAN I GET A COLLEGE LOAN?”
  Not ”STUDENT ELIGIBILITY”
- Say ”WHAT OTHER FORMS OF AID CAN I GET?”
  Not ”OTHER FORMS OF AID”
Focus on the **results** to the user. Not on the work that you did. You can help do this, by including descriptive **keywords** in the title. Put the keywords **first** in the title.

- **Say** "PROJECT XYZ: A PRELIMINARY REPORT"  
  **Not** "A PRELIMINARY REPORT ON PROJECT XYZ"
- **Say** "THEORETICAL PHYSICS: AN INTRODUCTION"  
  **Not** "AN INTRODUCTION TO THEORETICAL PHYSICS"
- **Say** "COFFEE AND HEARTBURN: A POSSIBLE LINK"  
  **Not** "A STUDY OF THE EFFECTS OF COFFEE ON THE DEVELOPMENT OF HEARTBURN"
- **Say** "THE SUMMIT PLANNING BOARD: ITS PURPOSE AND ORGANIZATION"  
  **Not** "THE PURPOSE AND ORGANIZATION OF THE SUMMIT PLANNING BOARD"
- **Say** "ELECTRIC MOTORS: HOW THEY WORK AND SOME EXPERIENCE WITH THEM"  
  **Not** "HOW ELECTRIC MOTORS WORK AND SOME EXPERIENCE WITH THEM"

- Make the title **interesting**.
  - **Say** "IS STRESS KILLING YOU?"  
    or "STRESS: IS IT KILLING YOU?"  
  **Not** "THE EFFECTS OF STRESS"

- Use **subtitles**.
  - **Say** "SALT: WHAT IT DOES IN YOUR BODY"  
    Salt Helps To Keep The Blood Neutral, Distributes Water, And Enables The Muscles To Function Properly. But Too Much Salt May Cause High Blood Pressure in Susceptible People, As Well As Other Problems"

**DESIGN — BASIC SECTIONS**

**COVER — OUTSIDE FRONT**

Many documents have a beautiful photograph or a fancy design on the outside front cover, but no information except for the title (which itself may not be very informative). Such covers do not help users. Put on the outside front cover, information such as —

- **Title**  
- Company Name/Logo  
- Date  
- Issue/Version Number  
- Name/Number of Department  
- Address/Phone  
- Hotline Phone To Call For Assistance  
- Names/Editions of related documents  
- Other documents that this document supersedes  
- Abstract  
- Contents  
- Copyright/Restrictive Notice  
- Page Number of Contents and Index  
- If readers need to take some action, call their attention to this in the Abstract or right under the Title. Write in big/bold letters — "Action Required By (Date)."
- Have a "family resemblance" on the front cover, between documents on the same subject — same logo ... similar titles ... etc.

One reviewer of this book felt that too utilitarian a cover might give an impression of lower quality. I disagree. I feel that the "form should follow the function" ... that the function of the outside front cover is to **inform** users of what's inside and where to find it. However, if you agree with that reviewer, you could put information such as the above on the inside front cover, or the outside back cover.

**COVER — OTHERS**

- Put useful information on the inside front cover and the inside/outside back covers, such as an abbreviated Index, or a summary of essential information.
CONTENTS

• Have a CONTENTS. Put in page numbers (some people don't, for reasons known only to them).

• Put the CONTENTS on the outside front cover, directly under the Title and identifying information.

• For a loose-leaf book, consider having a plastic, see-through pocket on the outside front cover for a replaceable Title/Contents page. Thus you can issue a new Title/Contents page when you reissue the document contained in the loose-leaf book.

• Have lists of figures, tables, illustrations, etc.

• Avoid conflicting number systems. For instance —
  1. Table 3
  2. Table 4

In the above example it would be better to say —
  1. Table 1
  2. Table 2

Or just list the tables —
  Table 1
  Table 2

INDEX

• Have an Alphabetic (and perhaps a Functional) INDEX, in addition to the CONTENTS.

• List the same topics in two or more places in the INDEX. For instance, you might list "Stereo Radio" in two places — in one place as "Stereo Radio," and in the other as "Radio, Stereo."

• If you have several page references to a given topic, indicate which is the main page reference by putting that page number in bold italic type, or underlining it, etc. For instance, "Stereo Radio ... 3, 10, 19, 50."

• The above point implies that you do, in fact, discuss every important point fully in one place. Don't leave yourself open to the following criticism — "When I try to find something through a manual's index, too often my search ends in total frustration."

• Have an abbreviated QUICK INDEX on the outside back cover.

ABSTRACT

• Very briefly state the objective of the document — some background information, the problem or goal that is discussed, the scope and approach, the results, and the conclusions. The user should be able to read just the ABSTRACT and not miss any key point.

Note — What has been discussed is an informative type abstract. Such an abstract isn't possible for long and involved documents. For such documents, write an indicative type abstract that discusses the type of information in the document.

• Tell who should use the document, and why, when, where, and how.

• Have a "selling" message, telling why people should read the document. Emphasize the benefits of reading it, not just its features. Will it help them to do their job better, faster, more accurately, more easily, more successfully?

Example — A stereowide control on a portable radio is the feature. Realistic stereo separation is the benefit.
TO THE USER

- **Note** — The **ABSTRACT** is usually shorter, and should be on the outside front cover. The **TO THE USER** section should amplify on the **ABSTRACT**, and should be on the inside front cover.

- Explain the purpose of the document. Even if it’s obvious to you, it may not be obvious to others. Or they may misunderstand your purpose. For instance, what you intend as an order, they may take as a recommendation. Or what you intend as a discussion of your opinions, they may take as facts.

- Tell if there are other documents that users should read or have read ... and if this document supersedes any documents.

- Should the user — Read the document consecutively? Read whatever chapter he or she needs at the time? Read the introductory chapter(s), and then whatever chapters are needed? Etc.

- If your document provides training on a subject, suggest to users how to approach it. Should they learn it on their own? Or attend a course? Tell how much time is likely to be needed.

- List phone numbers and addresses for more information.

- List acknowledgements to people who have contributed to the document.

OVERVIEW

- Overviews to each chapter or section may be useful, if the chapters or sections are long. However, if they are short, and/or if the headings and subheadings are clear, then an overview may not be needed.

INTRODUCTION

- An **INTRODUCTION** to a document or to a section of a document may present background material (what the work is about, reasons for doing the work, possible benefits, past work, etc.) or other material that will help orient the user to the document or section. It’s different from the **OVERVIEW**, which summarizes the document or section. (But sometimes writers do include overview material in the **INTRODUCTION**.)

- **Note** — The distinctions between an **OVERVIEW**, an **INTRODUCTION**, and a **SUMMARY/CONCLUSIONS** (see next page) aren’t clearcut. You don’t need to have all of these sections, and you can include in them what you feel is best.

GLOSSARY

- Have an alphabetic **GLOSSARY** if needed.
SUMMARY/CONCLUSIONS

- "Effective immediately, I want every report specifically, directly, and bluntly to state at the beginning a summary of the unshakeable facts. ... The highest art of professional management requires the ability to smell a real fact from all others — and moreover, to have the temerity, intellectual curiosity, guts and/or plain impoliteness if necessary to be sure what you have is indeed what we call an unshakeable fact." (Harold S. Geneen, "The View From Inside," Business Week, November 3, 1973)

- State conclusions specifically. Don't bury them in the middle of, or at the end of your document. Have the SUMMARY/CONCLUSIONS right at the start of your document.

- Include —
  - Specifications, Bounds, Limits, And Assumptions
  - Review Of Major Facts And Ideas
  - Interpretation Of The Facts And Ideas
  - Recommendations For Action — What should the user DO right now?
    - Cost Trade-Offs
    - Lessons Learned
    - Pitfalls To Avoid
    - Evaluations
    - General Principles
    - Relationships

- Support conclusions with —
  - Data, Charts, Pictures
  - Examples
  - Experience
  - Testimonials by Experts and Users
  - Quotations by Experts and Users

- Have a chart or table that summarizes findings, recommendations, etc.

- Summarize many pages of data into a few small graphs that can fit on just one or two pages.
- For instance, a 100-page monthly budget report was summarized on 20 small graphs, including — Balance Sheet ... Monthly Sales ... Monthly Pretax Profits ... Division Contribution to Pretax Profits ... Variable Income ... Return on Capital. This 1-page summary (with the 20 small graphs) was sufficient for most users. Those who needed more information could, of course, look at the details. And this summary gave an invaluable "Big Picture" to all users, which they could not get from the 100-page report.

- Note — If your document is long, you might want to have separate SUMMARY and CONCLUSIONS sections.
APPENDIXES

- Include in Appendixes, material that few users will need or want. Or if such material will take up many pages, include it in a separate, supplementary document. Refer to this supplement in your main document, so that users can request it if they want. Send copies of the supplement to those users whom you know will want it.

REFERENCES

- List documents and other references that you used in gathering information for your document. Also list others that you didn’t use, but that may be of interest to users. Be nice to users and include a couple of sentences or so about each item, telling them what it’s about and how it may be of use to them.

DESIGN — BASIC AIDS

EXAMPLES

- Use examples liberally. Use enough examples to cover the range of variations likely to be encountered by most users.
- Develop examples with as much care as the text... perhaps with more care.
- Test examples to make sure that they are correct. All too often, examples and text contradict one another.
- Make examples real-life situations that users are most likely to encounter. And make them accurate, complete, and consistent with the text. Most users prefer to find an example that is similar to what they need to do, and then to follow it exactly or with whatever changes are needed. A good example or picture is worth a thousand words. But a poor example can nullify the value of many words of accurate text.
- Make examples as complete as possible... not just unrealistic, partial sequences.
- Use both specific examples, and overall examples of entire task sequences.
- Work out some examples in full, so that users can see how solutions were obtained.
- If you are showing examples of filled out forms, write in by hand the parts to be filled in. When the document is printed, print these parts in red.
- If you are showing human/computer dialogue, use different typefaces to distinguish between the human and the computer. Make the typefaces as realistic as possible. Use an actual printout if practical. Preface each part of the dialogue with “You” (or “User”) and “Computer.” Put screen displays in boxes with rounded corners, that resemble screens.
LISTS

- Use list form whenever possible. Don't write out in sentence form, information that could be put in list form.
- Give all items in a list the same sentence or non-sentence structure.
- Make a long list of items more readable by skipping a line, or drawing a line, after every 3rd or 5th item or so.
- Put into columns, data to be compared or used together. Keep the columns close together, with 3 dots to relate corresponding items (for instance, names in one column, phone numbers in the other). Often columns are far apart; thus users must correlate the items, perhaps using a ruler to line up related items. This takes up the time of users, and they may easily make mistakes.
- Say "A. Adams ... ext. 1111
  J. Jones ... ext. 2222
  S. Smith ... ext. 3333"

Not "A. Adams ext. 1111
  J. Jones ext. 2222
  S. Smith ext. 3333"

- List data in different ways for different uses.
  - Alphabetic Sequence
  - Numeric Sequence
  - Space (Layout of Physical Objects) — Right to Left, Left to Right, Top to Bottom, Bottom to Top, Inside to Outside, Outside to Inside, Or Not In Any Special Order
  - Time (Chronological Sequence) — Past to Present, Present to Past, Or Not In Any Special Order
  - Logical Sequence — Input to Output, Output to Input, Most Important or Most Numerous, First or Last, Or Not In Any Special Order
  - Enumeration — Order of Importance, Ocurrence, Familiarity, Etc.
  - Classification — By Importance, Weight, Height, Function, Cost, Size, Power, Etc.
  - Sequence of Use
  - Frequency of Use
  - Habitual Sequence
  - Order of Importance
  - Function
  - Familiarity
  - Complexity
  - Acceptability
  - Cause to Effect (or Effect to Cause)
  - General to Specific (or Specific to General)

- If an item in a list differs markedly from the other items, call attention to the differing item by one of the highlighting techniques. (But first consider why the differing item is in the list anyway. Perhaps it should be placed by itself.) For instance —
  - Oranges
  - Pears
  - Pencils
  - Grapefruits
  - Peaches
  - Plums
PERFORMANCE AIDS

- Performance aids are documents used for on-the-job instruction or reference — small looseleaf books, single or multipage cards, charts, booklets, etc. The moment that one sees people with "cheat sheets" (notes that they have compiled for on-the-job use) on their desk, taped onto equipment, written into the margin of a document, etc., the designer can identify a point where a performance aid may be useful.

- In addition to being a document in itself, a performance aid can also be part of a larger document. One or more pages of that document can be organized for quick, on-the-job use by users.

- Because performance aids are usually of compact and convenient size, they are more likely to be kept on the working area than are regular documents. Because they are clear, concise, and highly organized, they are easy to use. Thus they —
  - Aid memory.
  - Eliminate guesswork.
  - Reduce errors.
  - Save reference time.
  - Improve efficiency and speed ... and accuracy and reliability of performance.
  - Increase safety.
  - Reduce training requirements, and time.
  - Increase job satisfaction by making the task clearer, simpler, easier, and more successful.

- Performance aids are valuable for almost any task, but are especially needed if —
  - Task is critical.
  - Task is too lengthy, complex, or infrequently done to be remembered.
  - Other, more complex documents are less effective for on-the-job use.
  - Task is discretionary; for instance, a system that people will use only if they want to. A good performance aid will encourage its use.

- What kinds of information can a performance aid provide?
  - Supportive — Calculation (e.g., rate or conversion tables), lists, interpretation (e.g., code translations), decision, or discrimination.

- Consider developing a performance aid for almost any purpose. Don't feel that a long, complex document will have more impact. On the contrary, the document may be skimmed over or even thrown away, while a performance aid may be kept on or near the working area and thus used.

- Explore possible physical forms —
  - Single/multipage foldout card
  - Leaflet/Booklet
  - Binder — regular/small size ... permanent (sewn/glued/stapled)/looseleaf/plastic spiral bound/wire bound ... top/side bound
  - Looseleaf rings without binder
  - Chart/Poster — pocket/desk/looseleaf/wall size
  - See-Through Overlay
  - Also consider — tabs ... plastic lamination ... outside see-through pocket on looseleaf binder for sheet with title/contents/index ... inside pocket for notes.
PROCEDURES

- **Note** — Also see the section on **WARNINGS** on page 113.

- State the **purpose** of the procedure. Don’t assume that people know it.

- Tell who has to follow it, and when. Then tell what they should do. **Be specific.**

- Tell people at the **start** what they need to complete the procedure —
  - **Time** — So that they don’t start a 60-minute procedure when they have only 10 minutes available.
  - **Skills, Experience, Etc.** — So that they don’t undertake something that they can’t handle.
  - **Information, Tools, Materials** — So that they aren’t caught short in the middle.

- Present first the most important, and the most common aspects of the procedure.

- Tell if there are **exceptions** to part(s) or all of the procedure, the conditions under which the exceptions apply, and if any approvals are needed.

- Distinguish between **recommended and required** procedures. Write so that the choice of action is clear.
  - "You should do this within two weeks." Is this a requirement ... or just a goal?
  - "You will do this within two weeks." Is this an order ... or just a description of how long it’s likely to take?
  - "You must do this within two weeks." There doesn’t seem to be any doubt here.

- Have just **one instruction per sentence**.
  - Say "Stop the program. Then load the data."
  - Not "Stop the program and then load the data."

- Better still, use numbered (or bulleted) list form —
  - "1. Stop the program
    2. Load the data."

- List the steps of a procedure in the **exact order** that they are to be performed.

- Fit all the steps of a procedure on one page, or on **two facing pages.**

- If the steps in a list must be carried out in sequence, say so and label each step with a number — 1. ... 2. ... 3. .... Also number them if individual items will need to be referred to from elsewhere. But if items are unrelated or don’t need to be referred to, use bullets. When you use numbers or bullets, always list the steps **one under the other.** Note — I believe that numbers give an air of complexity. Avoid them when possible.

- Place **critical** information where it belongs in the list. **But** ... call attention to it at the **start** of the list. Otherwise, users may not realize that it’s critical ... or they may not even get to it. For instance, if something is fragile, say so **before** you tell the user to move it.

  - **Say** "**WARNING** — THIS EQUIPMENT IS FRAGILE. PICK IT UP SLOWLY. SET IT DOWN GENTLY.
    1. Move the projector from room A to room B.
    2. Put it on the table.

  - Not "**1.** Move the projector from room A to room B.
    2. Put it on the table.

  - **WARNING** — THIS EQUIPMENT IS FRAGILE. PICK IT UP SLOWLY. SET IT DOWN GENTLY.

- Use **directive** (activo tonico) statements.

  - **Say** "**Start** the machine ...." Not "The machine should be started."

- Give **feedback** on the effects of actions. That is, tell the user what **should happen** after he or she does something ... and what to do if nothing happens or if something else happens.

  - **Say** "Turn the lever to position C. The dial should then read 50. If it doesn’t, do this ...."

- Point out **common errors** to avoid.

  - **Say** "Be careful that the lever is exactly on the C notch. Ensure that it is not between notches just before or after the C notch."
• Help motivate users to follow the procedure intelligently, by clearly stating the reason for it, and the consequences if it isn’t followed.
• Say "The reason for this procedure is to cool the unit slowly. If this procedure isn’t followed exactly, the unit may be damaged, or may explode."

• Don’t require users to follow step-by-step instructions from the beginning to the end of a procedure. Organize and chunk instructions so that users can easily bypass sections that aren’t needed in certain situations, or that they already know.
• Avoid these mistakes —
  • Required action isn’t clearly indicated.
  • Too many separate actions in a single statement (should be only one).
  • Too many thoughts, descriptions, or conditions in a single statement (should be only one or two).
  • Irrelevant or excessive explanatory material. Talks too much about the activity ... rather than about what to do.

• Note — A discussion of tables, graphs, pictures, etc. could cover an entire book. Indeed, there are books on this subject. Get one or more books on it, if your writing requires many tables, etc. This section has some very basic information on the subject.

• Put tables, etc. near the text to which they apply, not several pages away.
• Explain tables, etc. in the text. Users may not bother to look at the tables, let alone to figure out what they mean. But on the other hand, some users may look only at the tables, etc., and not at the text. So each should, as far as possible, stand on its own.
• Clearly label tables in a uniform place (above or below the table). Use a different typeface, or underlining, to distinguish labels from standard text.
• Use a different typeface and/or size to distinguish the table from the text. Or box the table.
• Keep tables free of unnecessary clutter. Leave space between numbers, lines, etc. Don’t crowd the table. If a table is complex, break it into two or more simpler tables.

• Don’t break tables between pages. If you must do this, ensure that all parts are visible at the same time; for instance, that they aren’t on reverse sides of the same sheet. Some possibilities —
  • Put the table on facing pages.
  • Reduce the table in size so that it can fit on a single page. But don’t reduce it so much that it’s hard to read.
  • Put the table on a foldout page. But note that foldout pages are expensive, inconvenient, and tear easily.
  • Break the table into logical subsets, one or more of which can fit on a single page or on facing pages. This may help to make the table more understandable and perhaps more usable, as well as more readable.

• Note — You can also put the entire table on one page, in much reduced form. Have boxes around the subsets, and tell which page it’s on. Thus users can see how the subsets fit together.
• Arrange columns from left to right.
• Put the heading on both the top and the bottom, or on both sides.
• Use vertical lines or spaces to separate columns.
• Keep space between columns to a minimum, so that items in one column can be clearly associated with related items in the other columns.
• Use horizontal lines or spaces to divide the table into sections, perhaps at every 5th line. (Use heavier, thinner, or dashed lines, as appropriate, to chunk information.)
• Explain symbols in a Legend.
• Use columns for more important comparisons. It’s easier to compare columns than rows.
• Boxes in a flowchart should usually go from left to right, as does text, not from top to bottom. The usual procedure is to show inputs on the left and outputs on the right. Note — Flowcharts may seem useful. But studies indicate that many users find them confusing (perhaps because they aren’t used to them), and don’t use them. Several studies have indicated that good verbal instructions result in better performance than is obtained with flowcharts. Moreover, flowcharts are costly to create and to revise, which means that they may quickly become out of date. Try to use some other method — text, lists, decision tables or trees (if you want to consider using these, find a book that describes them), etc. Make sure that your method is simple to use, and simple to revise.
• Identify units of measurement, and any units that vary from the other units used. For instance, if ten items in a list are in feet and one or two are in meters, call attention to the items that are in meters.
• Put units of measurement in the column headings, rather than in the data fields.
• Round to whole numbers. Don’t use too many decimal places.
• Emphasize similarities and differences.

WARNINGS
• Note — Get medical, legal, and editorial consultation on how to write and present warnings.
• Everything in this book applies to warnings. Especially, see PROCEDURES (page 106), and COLOR (page 120).
• Because warnings are so important, you should devote ample time and attention to —
  • Thinking of every imaginable warning.
  • Writing it so that it will be clearly understood.
  • Highlighting and placing it so that it can’t be missed.
• Put warnings —
  • On the equipment itself.
  • In the manual for the equipment.
• Don’t assume that anything is so obvious that you need not warn people about it. It may not be obvious to them. And even if it is, they may be preoccupied, tired, etc. Thus the warning will serve as a useful reminder to them.
• Always test a warning on several users to whom it is aimed, in their actual working environment ... no matter how clear, simple, and obvious it appears to you.
  • An example of a notice that appeared "obvious" but wasn’t, was the sign posted next to an elevator — "PLEASE WALK UP ONE FLOOR, WALK DOWN TWO FLOORS FOR IMPROVED ELEVATOR SERVICE." It has no difficult words, yet people were found walking up and down the stairs looking for a floor from which they could get improved service, only to find the same sign on each floor. An alternative wording is clearer — "TO GO UP JUST ONE FLOOR OR DOWN JUST TWO FLOORS, PLEASE WALK."
• WARNINGS SHOULD COME FIRST. Users may skim over, or even ignore the text, and thus might miss the warning if it’s buried within, or follows the text.
• Say "DANGER —
  VALVE MAY BE HOT
  1. Open valve A.
  2. Drain the water."
• Not "1. Open valve A.
  2. Drain the water."
  DANGER —
  VALVE MAY BE HOT."
* Call attention to a warning —
  * See **HIGHLIGHTING** on page 126.
  * Use a heading. Perhaps skip a space between each letter and also underline it once or twice.

  **ATTENTION**

  **ATTENTION**

  **ATTENTION**

  * Place asterisks, or some other symbol, all around the warning. For instance —

  *************************

  **ATTENTION**

  text of warning

  *************************

  * Use shaded areas.

  **DANGER**

  Do not tilt jar while unscrewing lid, since the acid may leak out and burn your hand. Hold the jar level.

  **CAUTION**

  Do not touch battery terminals.

  **WARNING**

  !WARNING! This can kill you!

  * Be consistent in how you label warnings.
  * Inform users, at the start of your document, of the warning system that you are using. For instance —

  **DANGER** — Possibility of personal injury.

  **CAUTION** — Possibility of service interruption.

  **WARNING** — Possibility of equipment damage.

  * If two or more possibilities exist together, label the notice with the **highest** priority.

  * Warnings may be of several types. They may tell the user to —

  * **Prepare** themselves before doing something ... as when putting on safety glasses.

  * **Observe** something **usual** ... as a meter reading.

  * **Watch** for something **unusual** ... as a pipe leaking.

  * Do something **usual** ... as tightening some screws.

  * Do something **unusual** ... as cleaning up if a pipe has leaked.

  * **Not** do something **usual** ... as not touching a hot pipe because it's always hot.

  * **Not** do something **unusual** ... as not touching a pipe if it's hot. (This is also a **do** action, since the person would first have to gently touch, or otherwise test the pipe to determine if it's hot.)

  * Combination of two or more of the above.

  * Make the warning **direct and personal**. It may, and usually should be accompanied by a more detailed explanation. The instructions on one piece of equipment stated —

    **DANGER**: The batteries in the AN/MSQ-55 could be a lethal source of electrical power under certain conditions.

    On the equipment itself, someone had written in large red letters —

    **LOOK OUT!** **THIS CAN KILL YOU!**

  * But neither of the above warnings told **under what conditions** the equipment could be dangerous. This is like the shepherd who cried **Wolf!** so many times when there was no wolf, that no one paid attention when there really was a wolf threatening the sheep. A warning should state specifically the conditions that might cause danger. For instance —

    **DANGER!**

    **LOOK OUT!**

    **THIS CAN KILL YOU IF YOU TOUCH THE BATTERY TERMINALS**

  * Negative words ("no," "not," "don't," etc.) lower readability of regular sentences. However, they can be useful in warnings. For instance —

    **DON'T TOUCH THIS!

    IT'S HOT!**
• Break lines logically.
• Say "Heavy equipment.
   Can cause severe injury."
Not "Heavy equipment. Can
cause severe injury."

• As appropriate, do not soften words to avoid alarming people.
  • Say "Dangerous gas.
    Will damage eyes if released."
Not "Dangerous gas.
May irritate eyes if released."
  • Say "High voltage.
    Will cause severe injury or death."
Not "High voltage.
May cause severe injury or death."

Don't use contractions like "it's," "don't," "can't," or
"won't" in warnings. "it is," "do not," "cannot," and "will
not" are more emphatic. (But I feel that "it's," "don't,"
"can't," "won't," etc. are more informal and thus are
preferable, in regular sentences.)

• Be precise in your use of verbs.
  • Don't say "remove" if you mean "disconnect."
  • Consider if "pull" or if "jerk" is more descriptive.

• Be precise in your use of adjectives.
  • Say "The red handle ....
Not "The dark handle ...."

• Be precise in your use of nouns. For instance, consider
if "handle" or "lever" is more descriptive ... "fastener" or
"staple" ... etc.

• Underline, or put in bold italics, and perhaps also put in
full caps, words like "no," "not," etc., to emphasize them.
Otherwise, users may overlook the negative word and
may thus interpret the sentence in exactly the opposite
way to what you intended. This is especially likely to
happen in emergency circumstances when people are
rushed and tense.
  • Say "Do NOT touch this."
  Not "Do not touch this."

The Westinghouse Electric Corporation has developed a
handbook with a step-by-step approach to producing
product safety labeling, Product Safety Label
Handbook, MB3699, by J. F. Gormley, et al. It can be
purchased from —
Westinghouse Electric Corporation
Customer Service, Printing Division
Forbes Road
Trafford, PA 15085
Phone: 1-412-829-6318

Some highlights of the labeling —
• Example —

1. Signal Word — DANGER, WARNING, CAUTION,
or NOTICE appears at the top.
2. Hazard Alert Signal — △ appears with signal
   words DANGER, WARNING, or CAUTION. It's an
   international standard that means Look Out!
3. Color — DANGER (Red), WARNING (Orange),
   CAUTION (Yellow), NOTICE (Blue)
4. Symbols and Pictographs — These reinforce the
   verbal message. They also provide
   non-verbal information for illiterate or
   non-English-speaking readers.
5. Identification of Hazard — In bold type.
6. Result of Ignoring Warning.
7. Avoiding Hazard. Tells how to avoid injury.
IMPORTANT

One of the reviewers of the draft of this book wrote, "Much of the physical design and production details are determined by the corporation standards and printers' recommendations." They implied that it's no use including this chapter and the following chapter (PRODUCTION) in this book, because writers have little control over the physical design of their documents. However, while I respect that person, my experience has been just the opposite. Management has usually welcomed my suggestions for novel physical designs — foldout cards, comb or wire binding, etc. After all, if it helps users, they'll do their job better.

As for "printer's recommendations" ... that's just what they are, recommendations. You, the writer, are the one to decide on the physical design, along with your management, of course ... and along with the publisher, if it's going to be published. Just remember that printers aren't necessarily the best informed parties, nor are they exactly impartial. They aren't intimately familiar with the purpose of the document, as you should be. They will probably recommend the physical design that they're equipped to handle, that they're familiar with, and perhaps that will make the most profit for them.

So don't use "corporation standards" or "printer's recommendations" as an excuse to avoid thinking about the physical design of your document. It will take some time and effort, but it may do much good for users and also for yourself. And once you use a different physical design the first time, you'll gain experience and will find it easier to do the next time, even though you may use some other physical design then.

Note — Much of the information in this section, plus much more information, is discussed in detail in a book by the International Paper Company, Pocket Pal Book. For information, phone the ACE Publishing Company, 1-212-431-5222. Or write to the International Paper Company, Pocket Pal Book, P.O. Box 100, Church Street Station, New York, NY 10046. (An editor, or the Art or Drafting departments in your company, may have this book.)
COLOR

- Get the advice of an expert on visibility, contrast, readability, and how to avoid misunderstanding by color-blind people.

- A PMS book shows ink colors available, numbered according to the standard Pantone Matching System (PMS) used by printers. There is also a PMS book for paper colors. Buy them at an Art Supply store or from Pantone, Inc., 55 Knickerbocker Road, Moonachie, NJ 07074. Phone 1-201-935-5500. (An editor, or the Art or Drafting departments in your company, may have these books.)

- If you refer to a color in a Legend or in the text, make sure that it's clear which color you are referring to. Don't just name the color; also show a sample of it right there.

- Blocks of color (or even patterns of black and white), if they are located near text, may distract users.

- Bright colors may seem to "vibrate" when used for text or fine lines.

- Don't use different shades of the same color (such as light blue, medium blue, and dark blue). The colors may be hard to tell apart.

- Avoid several light colors (such as light green and light blue), or several dark colors (such as dark green, dark blue, and black), that may be hard to tell apart.

- **Caution** — Never use only color to distinguish important information, especially warnings. Always back it up with something else. For instance, if you put a warning in color, also put it in **bold italic** type. If you use color to distinguish lines on a graph, also label the lines.

- About 8% of men, and 1% of women, have a problem with color vision.

- Everyone's color vision is impaired in dim light.

- Unusual lighting conditions may cause colors to fade, or to seem similar to some other color.

- The colors may fade over time, especially if the page is exposed to sunlight or other bright light, or if it's handled a lot.

- The colors will be lost if users photocopy the document.

- If printing on colored paper or card stock, keep in mind that the paper or card stock color may interact with the ink color. Ask the printer to provide you with sample dabs of your choice of inks on the colored paper or card stock.
COMPUTER VERSUS PAPER DOCUMENTS

The trend with some computer systems is to provide user information on the computer system itself, via a help command, or via a more elaborate program. This is a good idea, since it ensures that the information will always be available right at the point of use. However, computerized information shouldn’t replace paper documents.

Paper documents allow users to underline or otherwise emphasize text that is important to them ... to bend the corners of pages or use paper clips to identify pages important to them ... etc. Also, paper documents usually have better quality pictures, diagrams, etc. than do computer displays. And, of course, users can carry paper documents around with them. (Users may have the capability to print out "help" command information, so that they can have it in paper form. But paper documents can also be made available in convenient booklet or card form, which can’t easily be done by individual users with computer printouts.)

According to an article by David A. Schell of the Document Design Center, in Simply Stated, February 1986 —

- It takes 20% to 30% longer to read material from computer screens, than from paper.
- Accuracy in detecting errors on computer screens is often lower than it is on paper.
- Problem solving is slower using information read from computer screens than it is from paper. Even people who use a computer all day and thus are used to the computer, do better when reading from paper. And people also do better when reading from paper, even when compared to reading the same material from the best computer screens.

The article offers some suggestions for improving performance when preparing text to be read on computer screens (similar to suggestions in this book for writing to be read from paper) — Use upper- and lower-case letters, not all upper-case ... Leave the right margin unjustified ... Use medium width lines, not too wide or too narrow ... Don’t Crowd the information.

FORM

- In addition to a stapled 8½" x 11" document, consider other forms and sizes. It may appear difficult to design a booklet or some other form different from the usual 8½" x 11" document. But it really isn’t so difficult, once you become familiar with what needs to be done and the people (editor, artist, printer, etc.) who can help you do it.

- Looseleaf form is easy to update and opens flat. However, it’s large and heavy — disadvantages if one has to carry it around ... or use it where there is limited space, as on a crowded desk or at a computer terminal. If you don’t intend to keep issuing update pages to the document, some other form is probably better.

Note — A small size looseleaf book overcomes the disadvantages of size and weight.
• A document with card stock covers can be **stapled** (inexpensive), **plastic comb bound** (moderate), or **wire bound** (somewhat more expensive). There are two types of wire binding. Wire-O type has a line of connected double wires; this may look better and is perhaps more durable, and it is somewhat more expensive. Spiral wire binding (the type found on blank school and pocket notebooks) costs a bit less.

• This form is more convenient than is looseleaf, especially if comb or wire binding is used, which allows the document to open flat.

• With comb binding, you can print the title on the spine. You can also print the title on the spine with wire binding if the cover wraps around the wire, but then the book doesn't lie flat. A new technique provides for a flap on the opposite side of the book from the wire binding, so that the title can be printed on the spine and the book can lie flat. The flap can also serve as a bookmark.

• **Caution** — Ensure that the comb or wire is **big enough**, for the number of pages in the book and the thickness of the paper. If it's too small, the document will be hard to open, and the comb may pop open and allow pages to fall out. The printer or binder takes care of this. Impress on them that you want it done right, and that they will have to do the job over if it isn't done right.

• **Most Important** — Ask them to send you a few sample bound copies for your approval, before the whole job is bound.

• **Perfect binding** is another form used with card stock covers. The pages are glued together. Paperback books are perfect bound.

• Doesn't open flat.

• If poorly glued, the spine may crack, the pages may start falling out, and the whole thing may come apart.

• **Saddlestitching** has two staples in the spine. Many magazines are saddlestitched. (Note that this is different from plain stapling on the edges of the pages, which is known as **sidestitching**.)

• Opens flat. However, the user has to hold it, or put something on it to keep it lying flat.

• Often used for booklets.

• Not recommended for over 100 pages or so.

• **Foldout cards** are popular.

• Take little space.

• Open easily.

• Several pages can be seen at one time.

• Two cards (one for the front pages, and one for the back pages) can be taped on a wall or desk, thus making it into a poster.

• **Sizes** — 6" x 9" (or some similar size) booklets take less room to use and carry than do 8½" x 11" documents.

### Summary

<table>
<thead>
<tr>
<th>If Your Document</th>
<th>Consider Using</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ring Binder</td>
</tr>
<tr>
<td>Must be revised</td>
<td>-</td>
</tr>
<tr>
<td>Frequently</td>
<td>✓</td>
</tr>
<tr>
<td>Rarely</td>
<td>✓</td>
</tr>
<tr>
<td>Must fold</td>
<td>✓</td>
</tr>
<tr>
<td>So that it can lie flat</td>
<td>✓</td>
</tr>
<tr>
<td>For 360-degree page rotation</td>
<td>✓</td>
</tr>
<tr>
<td>Contains</td>
<td></td>
</tr>
<tr>
<td>Few pages</td>
<td></td>
</tr>
<tr>
<td>Small pamphlet</td>
<td></td>
</tr>
<tr>
<td>Up to 100 pages</td>
<td>✓</td>
</tr>
<tr>
<td>More than 100 pages</td>
<td></td>
</tr>
<tr>
<td>Has tabbed dividers</td>
<td></td>
</tr>
<tr>
<td>Must be easy to handle</td>
<td></td>
</tr>
<tr>
<td>Must be inexpensive</td>
<td></td>
</tr>
<tr>
<td>Needs durable protection</td>
<td>✓</td>
</tr>
</tbody>
</table>
HIGHLIGHTING

- "If you have an important point to make, don’t try to be subtle or clever. Use a pile driver. Hit the point once. Then come back and hit it again. Then hit it a third time — a tremendous whack." (Winston Churchill)

- Use highlighting techniques to emphasize —
  - Warnings
  - Key Words and Phrases
  - Headings
  - Examples
  - Etc.
  and to chunk information into small, more easily understandable sections.

- Don’t use too many different highlighting techniques. They may make the document look cluttered and confusing.

- Don’t highlight too much text. For instance, don’t use boldface type for entire pages. If you highlight almost everything, then the items that really need to be highlighted won’t stand out.

- Use highlighting techniques consistently. For instance, don’t use a bullet one time, and an arrow the next, to highlight the same type of information.

- Examples of Highlighting Techniques —
  - Bullets (•)
  - Arrows (→)
  - Centering
  - Indenting
  - Blank Space — Above, below, and to either side of the material
  - Underlining
  - Bold and/or Italic Type
  - Larger Size Type
  - Shaded Areas
  - Single, Double, or Broken Vertical/Horizontal Lines
  - Vertical line in the outside margin
  - Boxes
  - Color — See COLOR on page 120.
  - Also see WARNINGS on page 113.

PAPER

- Bright, glossy, or reflective paper colors suitable for posters (to attract attention), are not suitable for text paper. But bright paper colors may be suitable for the covers of a document.

- White or very lightly colored paper is best for text pages. Yellow paper is good for documents that will be read in sunlight. You can use colored paper (but not too dark) for a key section of the document, such as a summary, in order to distinguish it from the rest of the document.

- Regular paper causes some glare. Matte paper appears more fancy and minimizes glare. Shiny paper appears even more fancy, but it maximizes glare.

- Use heavier weight and/or colored paper for the cover stock, and to separate chapters.

- If printing is on both sides of the paper, ensure that the paper is opaque enough so that printing doesn’t show through. Opaqueness isn’t just a function of paper thickness. Very lightweight paper can be opaque, and heavier paper may not be opaque enough, especially if bold, dark print is used.
One study showed relative visibility of colors of ink on paper:

<table>
<thead>
<tr>
<th>Rank</th>
<th>Ink</th>
<th>Paper</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Black</td>
<td>Yellow* (Best)</td>
</tr>
<tr>
<td>2</td>
<td>Green</td>
<td>White</td>
</tr>
<tr>
<td>3</td>
<td>Red</td>
<td>White</td>
</tr>
<tr>
<td>4</td>
<td>Blue</td>
<td>White</td>
</tr>
<tr>
<td>5</td>
<td>White</td>
<td>Blue</td>
</tr>
<tr>
<td>6</td>
<td>Black</td>
<td>White</td>
</tr>
<tr>
<td>7</td>
<td>Yellow</td>
<td>White</td>
</tr>
<tr>
<td>8</td>
<td>White</td>
<td>Red</td>
</tr>
<tr>
<td>9</td>
<td>White</td>
<td>Green</td>
</tr>
<tr>
<td>10</td>
<td>White</td>
<td>Black</td>
</tr>
<tr>
<td>11</td>
<td>Red</td>
<td>Yellow*</td>
</tr>
<tr>
<td>12</td>
<td>Green</td>
<td>Red</td>
</tr>
<tr>
<td>13</td>
<td>Red</td>
<td>Green</td>
</tr>
<tr>
<td>14</td>
<td>Blue</td>
<td>Red    (Worst)</td>
</tr>
</tbody>
</table>

*Also includes cream and ivory

Another study indicated these colors:

<table>
<thead>
<tr>
<th>Paper Color</th>
<th>Good Ink Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>Black, Blue, Green, Red</td>
</tr>
<tr>
<td>Gray</td>
<td>Blue, Black</td>
</tr>
<tr>
<td>Yellow</td>
<td>Black, Red</td>
</tr>
<tr>
<td>Red</td>
<td>Black</td>
</tr>
<tr>
<td>Green</td>
<td>Black</td>
</tr>
<tr>
<td>Black</td>
<td>White</td>
</tr>
<tr>
<td>Blue</td>
<td>White</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bad Ink Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orange, Yellow</td>
</tr>
<tr>
<td>Orange, Yellow</td>
</tr>
<tr>
<td>Orange, Green</td>
</tr>
<tr>
<td>Green, Blue</td>
</tr>
<tr>
<td>Red</td>
</tr>
<tr>
<td>Red, Orange, Green, Blue</td>
</tr>
<tr>
<td>Black</td>
</tr>
</tbody>
</table>

READABILITY

- Ensure that text and diagrams will be clearly legible under the conditions of use. If the document will be used by people in a hurry or under other stress, or under poor lighting or other unfavorable conditions, printing should be larger and clearer than usual.

- Proportional spacing improves legibility. (Each letter gets a different amount of space, according to its size. For instance, w gets more space than does l. Regular typewriters don't do this.)

- With justified right margins, the ends of all lines are lined up evenly ... with unjustified right margins, the ends of lines are ragged.

- Studies indicate that unjustified right margins are easier to read than are justified right margins. Unjustified right margins do not have uneven spaces between words and do not have hyphenated words at the ends of lines, as do justified right margins.

- Also, unjustified right margins, because each line is a different width, give the eyes better cues when going from one line to the next, so that one is less likely to return to the same line or to skip a line.

- But on the other hand, justified right margins may appear neater and more professional, probably because people are so used to them in newspapers, magazines, and books.

- Avoid hyphenated words at the ends of sentences. (This isn't possible with justified right margins, unless you are willing to put up with words unevenly spread on the line, and your computer program has an option to do this.)

- Use regular lowercase type (initial capitals only) for text. ALL UPPERCASE IS HARD TO READ.

- One study estimated that all uppercase slows reading speed from 20% to 50%.

- Don't use plain italic type for text or for headings. Italic, especially in uppercase, is hard to read.

- One study estimates that italic type is 10% to 50% less readable than is regular type. It recommends using boldface type instead of italic type to show emphasis.
• Have all text/charts/examples running the same way as the text. Don't make users have to keep turning the document sideways. This is annoying, distracting, and time-consuming. And users may just not bother to read material that is printed sideways.

• Write numbers in digit, not in word form ... except, perhaps, at the start of a sentence.
• Write "There are 3 books" instead of "There are three books." "three" may be the more conventional way, but "3" is clearer.
• Use commas or spaces if there are many digits (for instance, 3,000,000), unless this would be incorrect.

• In technical material where the distinction is important, type slashes through zeroes (0s) to clearly distinguish them from uppercase letter Os.
• Have adequate blank space for margins ... and between words, lines, paragraphs, and sections. Keep the spacing uniform.

• Blank space around an item emphasizes its importance. Use this for critical information such as warnings, notices, etc.

• Separate paragraphs by skipping a line between them, whether or not you indent the first line. But don't just indent the first line without skipping a line, as this would cause the text to be too crowded.

• When the final copy is typed, specify lines so that meaningful groups of words or phrases aren't broken at the end of a line (for instance, January 1, 1984 ... page 20 ... Figure 1). Note — In the example in this paragraph, "page 20" should appear on 1 line, not on 2 lines as it now is.

• Type Sizes
  • 7 point or smaller — Don't use, except for very detailed charts that won't be used much, and where there is no alternative. In at least one city, it's illegal to have contracts in 7 point or smaller type.
  • 8-9 point — Use for reference material that will be read for only short periods.
  • 9-11 point — Use for documents that will be read continuously.
  • 11-12 point — Use for performance aids that will be used while actually performing a task under adverse lighting or other conditions.
  • Larger sizes — Use for headings.

• Examples — Examples of point sizes are shown below. But keep in mind that point sizes vary in different typefaces and on different typesetting machines.

  This is 7 point.
  This is 8 point.
  This is 9 point.
  This is 10 point.
  This is 11 point.
  This is 12 point.
• According to one study, the best line length for most text is 50-70 characters (including spaces), or about 10-12 words. Very short lines tire the eyes by making them jump back and forth too much. Very long lines tire the eyes by making them stay on one line too long.

Note — Another study summarizes optimum combinations of type size and line length —

Type Size Line Length
8 points 2-13/16 inches
10 points 3-1/8 inches
12 points 3-13/16 inches

Note — A point is 1/72 inch or 0.01384 inch.

• Still another study suggests that the ideal combination is 10-point type, 3-1/8 inch line length, and 1 or 2 points of leading (that is, space between lines ... see below).

Note — A useful item is a Type Size Finder. This is a loupe, similar to that used by watchmakers, but with type sizes engraved on it. Buy it at an Art Supply store or from H. Sherr Engravers, Inc., 7 West 22nd Street, New York, NY 10010. Phone 1-212-242-8630. (An editor, or the Art or Drafting departments in your company, may have one.)

A useful device for document designers is a circular slide rule for calculating print reduction sizes. Buy it at an Art Supply store. (An editor, or the Art or Drafting departments in your company, may have one.)

Leading is the space between lines of type. The usual thing is to set the leading 1 point larger than the type size.

• For instance, if type size is 10 point then the leading would be 11 point, and the two would be expressed as 10/11.

• Very small type and bold type may need extra leading to relieve the density of the text.

• Long lines may require more leading than short lines, to help the user follow across the long lines.

• Sans serif type (discussed on the next page) may require more leading than serif type of the same size, because it doesn’t have the serifs to carry the horizontal flow of the line.

**TYPEFACES**

• Different typefaces (and even the same typeface set by different typesetting machines) may be larger or smaller even though they have the same point size. So you cannot go by point size alone. Also, the shape of the type itself may be different, even though it has the same name. And the leading (see the preceding page) may be different, even though the same points of leading are specified. You must see actual samples of the type, set on the typesetting machine to be used, before you make your choice of type styles, sizes, and leading. For example, here are two examples of different type styles set in 10 point and in 14 point. You can see the difference in sizes.

This is an example of 10 point Souvenir type.

This is an example of 10 point Avant Garde type.

This is an example of 14-point Helvetica.

This is an example of 14-point Garamond.

• Serif Vs. Sans Serif Type —

• Serif type styles have short strokes projecting from tops and bottoms of letters. Serifs may enhance the horizontal flow of lines, perhaps making lines easier to read ... may make individual letters easier to distinguish ... and are considered to be more traditional and formal. Note — This sentence is typeset in Times Roman, a serif type style.

• Sans serif type styles don’t have serifs. They have a clean, modern, informal look. The simpler look may make these styles easier to read.

Note — This paragraph, and the rest of this book, is typeset in Helvetica, a sans serif type style.
• **Don't mix typefaces**, unless you are expert at it. This tends to give a cluttered look. Use different sizes and styles (regular, bold, italics, bold italics) of the same typeface. Most typefaces are available in the following six styles, plus a combination of bold and italic. Also, condensed and extended typefaces may have their own families of light, bold, and italic. Ask whoever does your typesetting for a book showing the typefaces that they have available, and ask an editor for guidance.

<table>
<thead>
<tr>
<th>Light</th>
<th>Regular</th>
<th>Bold</th>
<th>Condensed</th>
<th>Extended</th>
<th>Italic</th>
</tr>
</thead>
<tbody>
<tr>
<td>typography</td>
<td>typography</td>
<td>typography</td>
<td>typography</td>
<td>typography</td>
<td></td>
</tr>
</tbody>
</table>

• For more information on typefaces, in addition to that supplied by the organization doing your typesetting, you can get a book on the subject. One such book is *Type And Typography* by Ben Rosen, Van Nostrand Reinhold Co., 1976.

---

**USABILITY**

• Place essential operating and safety information right at the point of use... for instance, attached on the equipment. A document with more detailed information is useful. But the document may not be available or may be lost, or users may not bother to read it, or they may not even be aware that there is a document.

• Consider users' work space and if hands are free to use the document. If they need to refer to information while their hands are occupied, the information might be pasted or taped or attached with magnets in a convenient place... or placed on a stand... etc.

• Quality and strength of materials used for the document should be in proportion to —
  - **Importance**
  - **Length of Use**
  - **Stress of Use** — Will it have to be used outdoors in bad weather conditions? Will it have to be used when the person's hands are grimy or oily? Etc.
  - **Illumination** — Will it have to be used under poor lighting conditions? Under colored lights? Under varying lighting conditions? Etc.

• Small size (not necessarily pocket-size) cards and handbooks are both psychologically and physically more handy. They can easily be kept on a desk or other working area, or in a briefcase. People may be more likely to use them since they are less intimidating than are large, heavy, bulky documents.
PRODUCTION

TYING

- It's a good idea personally to go over your material with the editor, typist, artist, and printer before they start work on it, even if the material appears straightforward. This may help avoid having to redo it because they didn't understand what you wanted. Or, they may have a better idea than what you had in mind. If you talk with them personally, they are more likely to discuss it with you than if they never see you.

- If you want cooperation from the editor, etc., then be fair with them —
  - If you know that you'll have a Rush or a big job, tell them about it ahead of time.
  - Also tell them when your job is not "Rush."

- Spell out names and difficult words clearly.

- Specify paragraphs and punctuation.

- Number all of your pages before you give them to anyone, to make sure that everything is there when you get the job back.

- Photocopy the pages before you give them to anyone, in case —
  - They phone you with questions and you need to refer to the material.
  - You yourself need to refer to the material while they have it.
  - Your job is misplaced.

- Sometimes it may not be possible for the editor, etc. to do what you asked for. Instead of leaving it to them to decide what to do, work with them to achieve the optimum solution.

- If possible, have your job typed on a word processor. The material is stored on disk, so that changes can be made without retyping much or all of it.

PROOFREADING

The following suggestions are from an article by Carolyn Boccella Bagin and Jo Van Doren in Simply Stated, April 1986 (Document Design Center, American Institutes For Research, 1055 Thomas Jefferson Street, NW, Washington DC 20007).

How Can You Produce Error-Free Copy?

- Never proofread your own copy by yourself. You'll tire of looking at the document in its different stages of development and you'll miss new errors.

  (If you must proof your own copy, cover the paper so that you view only one line at a time. This will reduce your tendency to skim your material.)

- Read everything in the copy straight through from beginning to end: titles, subtitles, sentences, punctuation, capitalizations, indented items, and page numbers.

- Read your copy backward to catch spelling errors. Reading sentences out of sequence lets you concentrate on individual words.

- Consider having proofreaders initial the copy they check. You might find that your documents will have fewer errors.

- If you have a helper to proof numbers that are in columns, read the figures aloud to your partner, and have your partner mark the corrections and changes on the copy before proofreading.

- If time allows, put your material aside for a short break. Proofreading can quickly turn into reading if your document is long. After a break, reread the last few lines to refresh your memory.

- Read the pages of a document out of order. Changing the sequence will help you to review each page as a unit.

- List the errors you spot over a month's time. You may find patterns that will catch your attention when you proofread your next document.
If you can, alter your routine. Don’t proofread at the same time every day. Varying your schedule will help you approach your task with a keener eye.

Not everyone knows and uses traditional proofreading marks. But a simple marking system should be legible and understandable to you and to anyone else working on the copy.

Where Do Errors Usually Hide?

Mistakes tend to cluster. If you find one typo, look carefully for another one nearby.

Inspect the beginning of pages, paragraphs, and sections. Some people tend to skim these crucial spots.

Beware of changes in typeface — especially in headings or titles. If you change to all upper-case letters, italics, boldface, or underlined copy, read those sections again.

Make sure your titles, subtitles, and page numbers match those in the table of contents.

Read sequential material carefully. Look for duplications in page numbers or in lettered items in lists or outlines.

Double-check references such as, "see the chart below." Several drafts later, the chart may be pages away from its original place. (Note — I mark "Ref" for Reference) in the margin next to each such reference. Then, on the final draft, I check if the reference is still correct. I mark such notes to myself with a green marker pen, and corrections for the person typing the material with a red marker pen.)

Examine numbers and totals. Recheck all calculations and look for misplaced commas and decimal points.

Scrubalize features that come in sets, such as brackets, parentheses, quotation marks, and dashes.

Printing

Facilities, quality, and prices of printers can vary greatly. Get a few estimates. But don’t sacrifice quality. If you don’t have a regular printer, visit several to see their facilities and to talk with the people who work there. Ask for samples of their work. See how much assistance they are willing and able to give you in choosing paper, etc. (unless you yourself, or an editor in your company, has that knowledge). Prepare a detailed specification of what you want printed (giving number of pages, size/weight of paper and covers, ink colors, number of copies), and ask for price estimates.

Price per copy, especially for special physical designs, usually goes down considerably, the more copies are printed. Consider ordering more copies than are initially needed, to avoid small, expensive, time-consuming orders later. Consider —

Copies will be needed for new people.

Some (many?) people may want more than one copy.

Other areas of the company may want copies.

Lost or damaged copies will have to be replaced.

Specify for the printer (get advice from editors, artists, and printers, and opinions from potential users) —

Typesetting — Style(s) and size(s). Ask the printer for a book showing what typefaces, styles, and sizes are available. Your copy should be typed in the exact format that you want it (placement of page numbers, paragraphs flush left or indented, headings indicated).

Binding

Quantity

Paper/Card Stock — Type, weight, color. Ask the printer for booklets issued by paper manufacturers, showing what is available.

Printing — Method (for instance, Offset).

Ink Colors

Size — Original/first and percent reduction, and top/bottom and side margin sizes.

Assembly — Folding ... Binding. (Machine folding gives a sharper crease that will stay folded, than does hand folding. If the printer doesn’t have a folding machine that can handle your job, ask the printer to send your job to a bindery for folding.)

Distribution — Names and addresses.
• Ask for a proof copy before final printing. Check it carefully.
• If printing is in more than one color, ask for 2 or more proof copies — a proof of the complete text, and of the text in each color except the main one. The complete text proof should be in the physical form as for the final copy (bound, folded, etc.).
• Note — Suppose a book is printed in red and black. There would be 2 proof copies — one in red and black, and one in red only. The complete text proof (red and black) from the printer would be in the size as for the final book. But since the printer usually doesn’t do the binding, some proof copies of actual bound copies would come later from the binder; these are called tool made samples.
• Ensure that printing is dark enough. This is a function of the person who operates the printing machinery and who checks on the ink mixture. Pale print is hard to read, and also makes a poor impression on users.
• If your job is special, you may want to ask to be present when they start to print it so that you can ensure that the colors and everything else meet your requirements.

**DISTRIBUTION**

• Ensure that everyone who needs the document, gets it. Don’t consider that your job is over when you have finished writing the document. You also have to do your best to see that it gets to those who need and want it.
• Make provision for new people to get it.
• Have an address and phone number on the document from which additional copies can be requested. Ensure that it’s easy for people to order it.
• Ensure that distributed or ordered documents are delivered quickly. Not weeks after they are needed.
• Place reference copies in key areas.
• List the document in indexes. Put a notice or article about it in newsletters. Send copies to libraries. Send notices about it to mailing lists of people who might need or want it.
• Send copies to other areas of the company that might use it, or might want to develop a comparable document for their application.
• Keep a list of recipients, to whom to send updated pages, new editions, or notices of new editions.
FAIRNESS

ACKNOWLEDGEMENT

Material in this chapter on FAIRNESS (except for the last section in this chapter, MORE SUGGESTIONS) is summarized and adapted from the PRENTICE-HALL COLLEGE DIVISION GUIDELINES ON SEXISM. Reprinted by permission of Prentice-Hall, Inc., Englewood Cliffs, New Jersey.

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INTRODUCTION

Sexism in books includes sins of omission as well as of commission, and bias in thought and concept as well as in language. Those who write and edit textbooks need to be particularly sensitive to both areas. The portrayal of roles and life situations as exclusively masculine or exclusively feminine, or the more subtle omission of women as participants in the action, is just as much bias as is the general use of he or man to characterize all human beings. The purpose of establishing guidelines for nonsexist language is to help remove the conceptual and linguistic barriers that now artificially divide many aspects of life and work by gender. They are intended to sensitize both authors and editors to the many ways in which sexism may be expressed, and to give them some tools with which to attack the problem.

These guidelines therefore contain "checklists" of things to look for in reading or in editing a manuscript, as well as specific kinds of expressions to change or avoid. Eliminating sexism requires as much attention to thought and attitude, as it does to pronouns and occupation titles. Much in the same way as one can observe the letter but not the spirit of the law, one can carefully use he or she or they, and yet have a book that in fact ignores women as equal partners in the enterprise of transmitting or expanding human knowledge.

Striking a balance is tricky; women in many cultures and in many eras have been treated as second-class citizens, and certainly the laws and rhetoric of recent years have yet to become part of everyday reality. But to recognize the contributions of women, past and present, is not only to correct the record; it is to make the facts available to those who will create and live out new social realities. And to treat people as human beings, as members of a common group, without identifying them by gender, is to promote changes in attitude that can liberate both men and women and allow society to take advantage of each individual's full potential.
BIAS IN CONCEPT AND COVERAGE — OMISSION

Check the descriptive and illustrative material — the examples used to illustrate concepts, and the descriptions of processes, social structures, and typical situations. Are women simply ignored? Are they treated as exceptional cases or, on the other hand, as part of the landscape or the baggage? Are the subjects of studies all male? Is the work of women scholars cited? Certain subjects — history, the sciences, and business — are special candidates for careful scrutiny. The argument usually advanced — that there are no women involved or that women did not play certain roles in certain periods or cultures — does not justify ignoring women altogether or mentioning them only as auxiliaries or oddities.

Unbiased
Pioneer families crossed the desert carrying all their possessions.

Biased
The pioneers crossed the desert with their women, children, and possessions.

Slave families were allowed to stay together.

or Married slaves were allowed to live with their families.

Marie Curie discovered radium.

When setting up an experiment, a researcher must check for sampling error.

As knowledge of the physical world increased, old ideas and traditions were examined with a more critical eye.

or ... people began to examine ....

Unbiased

Biased
The exhausted pioneers .... or The exhausted men and women ....
The women painters of this period were ... or worked primarily in ... or Among the painters of this period, X, Y, and Z [both men and women] worked primarily in ....

She ran the business efficiently.

Jan Acton is Joe Granger's assistant.

The girls played with the boys. or The children played. or The little girls played with the little boys.

The line manager and his secretary were both upset by the mistake.

All the young people of the village took part in the festival.

Biased

The poor women could no longer go on; the exhausted men ....

There were also some women painters in this period, most of them daughters or wives of painters.

Though a woman, she ran the business efficiently.

Mrs. Acton, a statuesque blonde, is Joe Granger's assistant.

The little girls played with the boys.

The line manager was angry; his secretary was upset.

All the strong young men of the village took part in the festival, as did the young girls.
BIAS IN CONCEPT AND COVERAGE
— STEREOTYPING

Check the portrayal of roles, the description of jobs and skills, the treatment of life styles and life situations. Are people treated as human, or are all the portrayals done in male or female terms? Does the reader get the impression that only men do X and only women do Y? Are men portrayed one way and women another? Are all people in positions of authority or trust (the therapist, the politician, the scientist, the philosopher, the leader, the historian) male? In an education text, are all the teachers female and all the professors and administrators male? How is the family described and analyzed? Do "mommies" always stay at home? Does the author imply they should? What are the role models for children? How are recent changes in the family power structure treated? In a business text, are all the executives male and all the secretaries and assistants female? Can the reader instantly infer that all the participants in a meeting or conference are assumed to be male? Do examples of human behavior always reinforce the stereotyped idea that women and men are totally different kinds of creatures?

**Unbiased**

She was actively interested in sports as a child.

Current tax regulations allow a head of household to deduct for the support of a spouse and children.

The line manager is responsible for the productivity of the department; the supervisors, for that of the workers on the line.

The secretary brought the boss coffee.

The teacher should prepare a lesson plan well in advance of the day the material will be taught. or The teacher must be sure his or her lesson plans . . .

**Biased**

As a child, she was a tomboy; sports and not dolls were her main interest.

Current tax regulations allow a head of household to deduct for the support of a wife and children.

The line manager is responsible for the productivity of his department; his foremen, for the day-to-day work of the girls on the line.

The secretary brought her boss his coffee.

The teacher must be sure her lesson plans are done well in advance of the day she plans to teach the material.

Completing this "awareness checklist" should give an editor (or an author) a good idea of whether or not a particular manuscript needs more than the adjustment of pronouns or changes in language to make it unbiased or non-sexist. At this point the editor or the copy editor can evaluate the scope of the problem and make recommendations for substantive work in addition to changes in language and expression. It is the overall presentation, not so much the occasional lapse in language, that can give a book a bias the author may not have intended.
BIAS IN LANGUAGE AND EXPRESSION
— PRONOUNS

The use of *he, his, him* to denote any person or a person is
the most common problem in editing language for bias,
simply because English has no neutral pronoun in the
singular. If there is no way to reword a passage or a
sentence to avoid unnecessary pronouns or to change to
the plural, the best current solution is to use *he* or *she, his*
or *her*. Coined terms, such as *(s)he* or *she/he*, should be
avoided; they are usually distracting to the reader and
annoying to the author. In citing examples, individuals in
the examples may sometimes be male, sometimes female.
If this alternative is chosen, avoid stereotyping male and
female roles.

None of these suggestions — removing pronouns, changing
to the plural, alternating examples, or substituting *he* or *she*
— should be followed blindly as immutable rules. Context
and clarity of expression are important considerations in a
text and should not be sacrificed merely to ensure that
every pronoun has been changed. The constant use of *her*
or *she* leads to clumsy, repetitious phrases and sentence
structure. A change to the plural may be wrong in a given
context — for example, when the discussion is of
one-to-one relationships such as that between parent and
child. Alternating the *he* and *she* examples does not work
well in many contexts. Both author and editor need to use
a variety of approaches in sensitive, appropriate ways. It is
advisable for the author to include a note in the preface to
the book explaining what approach has been taken to avoid
stereotyping and sexism.

### Unbiased

Facial expression does not always indicate a person's true feelings.

Sometimes a doctor will see patients only in a hospital.

The clinician must take accurate and careful measurements.

Most children do their homework right after school.

A good lawyer will see that his or her clients are aware of their rights.

### Biased

A person's facial expression does not always reveal his true feelings.

Sometimes a doctor will see his patients only in a hospital.

The clinician must take his measurements accurately and carefully.

The typical child does his homework right after school.

A good lawyer will see that his clients are aware of their rights.
BIAS IN LANGUAGE AND EXPRESSION
— HUMAN, NOT MAN:
DESCRIBING THE WORLD

One way to establish an unbiased tone that treats people as individuals who share universal human characteristics and traits is to avoid the use of the word man to mean all people and the use of -man words in general. If such words must be used, they should be accompanied by an explanation or be set in a context that clearly does not exclude women.

Unbiased

human beings, humans, human race
human race, people, humankind, humanity
primitive people(s), primitive men and women
manufactured, made, synthetic, artificial
labor, workforce
the average citizen, the layperson, the nonspecialist

Biased

man [as in] when man first walked upon the earth
mankind
primitive man, early man
man-made
manpower
the common man, the man in the street, the layman

Non-Stereotyped Expressions
The committee decided he was the right person for the job. or ... was right for the job.

Teachers must always remember that their role in the learning process is a vital one.

Research has shown that smart consumers know what they want before they enter the store.

Jack is an extremely accurate typist; Mary is not.

Children need a parent [or parental care, nurturing].
I’ll have my secretary [or assistant] call him.

women’s room [give the occupation]
ladies’ room
career girl

Stereotyped Expressions
The committee decided he was the right man for the job.

The teacher must always remember that her role in the learning process is a vital one.

Research has shown that the smart shopper knows what she wants before she enters the store.

Mary is an extremely accurate typist; Alice is not.

Children need someone to mother them.
I’ll have my girl call him.

Note — This list originally suggested changing "girls’ basketball team" to "women’s basketball team." But as a reviewer of the draft of this book pointed out, "Females 1 to 16 years old are certainly girls and 'women's basketball team' would be silly in reference to elementary school sports. Surely the intention here is sound, but extreme examples that distort practical reality detract from impact."

Another objection that the reviewer had to the original list, was to changing (A) "Some chimpanzees in the experiment received no mothering" to (B) "Some chimpanzees in the experiment received no parental care [or nurturance]." The reviewer’s comment was that, "A is scientifically accurate. B does not convey accurate information because it implies male chimps nurture, which may not be true, or may fog the point of the experiment which might have been the effects of mothering, not of parenting. Differences can be valid."
Parallel Treatment
The men in the office took the women to lunch.
This is my secretary, Alice Smith and my aide, Jack Green.
Dr. and Mrs. Jones or
Jack and Diane Jones
husband and wife
student
college men and women
the men and the women or the gentlemen and the ladies
at a meeting between
President Nixon and
Prime Minister Gandhi
[or Richard Nixon and
Indira Gandhi, Mr. Nixon and Mrs. Gandhi]

Non-Parallel Treatment
The men in the office took the girls to lunch.
This is my secretary, Mrs. Smith and my aide, Jack Green.
Dr. Jones and his wife Diane
man and wife
college men and girls
the men and the ladies
at a meeting between
President Nixon and
Indira Gandhi [or Mrs. Gandhi]

Avoid using cliches such as the following —

the woman driver
the nagging mother-in-law
the little woman
the henpecked husband
gal Friday

Boys’ night out
dizzy blonde
catty women
female gossip
man-size job

BIAS IN LANGUAGE AND EXPRESSION
— OCCUPATIONS AND TITLES

Naming a person’s occupation has been an editorial problem, simply because so many job titles and occupations were themselves gender-linked terms. Many alternatives are now available, so that it is usually easy to use descriptive words that can apply to any person, whether male or female. Unnecessary gender identification can also be deleted.

Unbiased
actor
author
businessperson, executive, manager
chair, chairperson
household worker, cleaner
member of Congress, representative
supervisor
firefighter
servant
homemaker, consumer
mail carrier, letter carrier
police officer
sales representative, salesperson
flight attendant
nurse

Biased
actress
authoress
businessman
chairman
cleaning lady
congressman
foreman
fireman
houseboy
housewife
mailman
police officer, policewoman
salesman, saleswoman
stewardess
woman doctor
male nurse
MORE SUGGESTIONS

• When it is not relevant, do not mention characteristics as
  sex, marital status, race, age, physical appearance, etc.

• The use of they as a singular generic pronoun is
  grammatically correct and fully provided for in the Oxford
  English Dictionary. "If someone wants to go to college,
  here's what they should know," reads a line in a New
  York Times advertisement. Another example is, "When a
  soldier is firing the 105mm Howitzer, they should wear
  ear protection." No forcing of the language is necessary,
  we are simply using a form that has recently fallen into
  disuse.

• Ask colleagues of both sexes to review what you write.

• Although you may not and need not agree with a female
  ... or male ... interpretation of events, you should include
  the female or male perspective in any review of the
  possible determinants of behavior by groups or
  individuals.

• Women authors are often under-represented in text
  citations in proportion to the number of eminent women in
  a particular field. Include references to research done by
  women when it is relevant to the topic of discussion.

• Use non-sex-typed examples. Use female as well as
  male names for prototype doctors, pilots, or mechanics.
  Use male as well as female names for prototype child
  caretakers, homemakers, or clerical workers. Also, any
  discussion of occupations and career choices should not
  imply that members of only one sex have the desire for,
  or access to, a particular goal in life.

• Give attention to individuals depicted in illustrations and
  photographs so that stereotyped views of "typical male"
  and "typical female" activities are not reinforced.

• Have an independent reviewer or panel analyze your
  survey to assure that it is free of ethnic or sex role
  stereotyping, or racial bias. Your company's editorial or
  personnel department may be helpful.

GRAMMAR

ACKNOWLEDGEMENT

Material in this chapter on GRAMMAR is summarized and
adapted from Guide for Air Force Writing (AFM 10-4),
and The Language of Audit Reports by Laura Grace
1957.

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copyrighted. However, the summarized and adapted
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MODIFIERS

• Modifiers — Misplaced modifiers (see illustrations
  below) make it easy for the user to misunderstand the
  meaning of sentences, sometimes with dire results. Keep
  your modifiers close to the words they modify.

• Dangling Modifier — When a word or phrase seems to
  modify another word which it cannot logically modify, it
  has been left dangling. Usually it will be a phrase
  beginning the sentence. From its position we expect it to
  modify the subject. But the connection is illogical.

  • Say "To make a climbing turn, open the throttle wider."
    Not "Making a climbing turn, the throttle is opened
    wider."

• Misplaced Modifier — Sometimes we widely separate a
  modifier from its modified word and confuse the user.

  • Say "It was impossible in the dark to find the book I
    had been reading."
  Not "It was impossible to find the book that I had been
  reading in the dark."

• Squinting Modifier — The modifier may be placed so
  that it could logically relate to either of two words. This
  may confuse the user.

  • Say "The electrician said he would repair the stove on
    Wednesday."
  Not "The electrician said Wednesday he would repair
  the stove."
INDEFINITE REFERENCE WORDS

- We use words or pronouns such as "the latter," "the former," "this," to refer to something we have previously mentioned. This reference must be clear to the user.
- Say "The commander told the executive to handle all personnel assignments." or "The commander told the executive that she, the commander, would handle all personnel assignments." Not "The commander told the executive that she would handle all personnel assignments."

SINGULAR AND PLURAL

- Don't carelessly carry along a singular verb to a second subject in the plural, or a plural verb to a second subject in the singular.
- Say "A payroll is prepared and checks are drawn." Not "A payroll is prepared and checks drawn."
- Say "Storage facilities are inadequate and their location is undesirable." Not "Storage facilities are inadequate and their location undesirable."
- The verb agrees with its subject, regardless of other words or expressions that come between them.
- Say "The record of these valuations and changes is kept." Not "The record ... are kept."
- Say "Each of the guests was served." "Every employee of these companies is required ...." "Either of the methods is acceptable." "Neither of the departments is responsible."
• Words of quantity, such as "half," "part," "none," "remainder," "total," "percent," may take either singular or plural verbs. Where is the emphasis? When the emphasis is on the word of quantity, use a singular verb. When the word of quantity refers to a singular noun which carries the emphasis, use a singular verb. When the word of quantity refers to a plural noun which carries the emphasis, use a plural verb.
• "The total of these revenues (is, are?) shown as a reduction of expenses." — A total figure is entered in the books as a reduction. "Total" carries the emphasis. Is is probably better.
• "Half of the building is occupied." — "Building" carries the emphasis. Use is.
• "Half of the rooms are occupied." — "Rooms" carries the emphasis. Use are.
• "A series of recommendations (was, were?) presented." — What was presented, series or recommendations? "Recommendations" carries more emphasis. Were is probably better.
• "Seventy percent of the expenses (is, are?) allocated." — What is allocated, percent or expenses? "Expenses" carries more emphasis. Are is probably better.

Note — One reviewer felt that is sounds better, and I do also.

TO BE
• The verb to be in all its forms ("is," "was," "have," "been") is best used to indicate existence or location. In other meanings a better verb is needed.
• Say "Sales have been made at prices ...." Not "Sales have been at prices ...."
• Say "Control over expenditures for research is exercised principally by ..." or better "Expenditures for research are controlled principally by ...."
• Note "Control over expenditures for research is principally by ...."

ADJECTIVES IMPROPERLY CARRIED OVER
• Sometimes an adjective carries over when it wasn’t intended to carry over. A remedy is to repeat a governing word.
• "... to ascertain their financial condition and compliance with regulations." — "Financial" wasn’t intended to carry over, but it does. The writer didn’t mean "financial compliance with regulations." Repeat their: "... to ascertain their financial condition and their compliance with regulations."
• "Farmers in the 50 states and territories ..." — The 50 should apply only to "states." Repeat the: "Farmers in the 50 states and the territories ...."
• Sometimes an adjective is carried over and attached to a word that it can’t logically be attached to.
• "The Lanham and related acts ..." — "Lanham" can’t be attached to the common noun acts; besides, there was only one Lanham Act. Say: "The Lanham Act and related acts ...."

PREPOSITIONS DOUBLED UP
• Say "The present complement of 20 to 30 persons ...." Not "The present complement of from 20 to 30 persons ...."
GERUNDS
- A gerund is the "ing" form of a verb used as a noun. It takes a possessive qualifier. It is a complex and awkward form. The best thing to do is to reword the sentence to avoid using it. Often it is difficult to recognize a gerund. There is one simple test to find out whether an "ing" word is a gerund requiring a possessive modifier: try substituting the pronoun. If the pronoun must be a possessive pronoun, then the noun it replaced should be in the possessive form.
  - "This offer resulted in the office receiving many applications." — Substitute the pronoun for "office." "This offer resulted in (it, its?) receiving many applications." Obviously its is correct, so we should use the possessive form of "office." "This offer resulted in the office's receiving many applications." But it would be simpler just to say: "As a result of this offer, the office received many applications."

IDIOMS
- An idiom is a word usage that depends on the context to be understood.
  - Agree to a proposal; agree with a person.
  - Argue with a person; argue for, against, or about (but not on) a proposal.
  - Blame for (not on).
  - Compare to a standard or base previously set up; compare with another item.
  - Differ with a person; differ from anything else.
  - Independent of (not from).
  - Merge into or in (but not with).
  - Plan to or for (not on).
  - Wait on a customer; wait for a person or thing; wait at a place.

Certain verbs are idiomatically followed by to be.
- Net results continued to be profitable.
- These limitations appear to be related to the programs.

Verbs of saying, thinking, feeling, believing are idiomatically followed by that.
- We feel that the statements ....
- The manager stated that this action ....

SPLIT INFINITIVES
- An infinitive is a verb form that contains the word to.
  - to eat
  - to be going
An infinitive is said to be split when a word or phrase occurs between to and the verb.
  - to immediately eat
  - to soon be going
Split infinitives are objectionable only if they are split without reason. If it makes a sentence stronger and more natural to split the infinitive, split it!
  - The board should have the authority necessary to effectively direct the affairs ...

SPLIT PARTICIPLES
- Split participles are no more objectionable than split infinitives.
  - Every organization should carefully plan ahead ...
  - This position could best be filled by ....

END THAT SENTENCE WITH A PREPOSITION!
- A prepositional ending has never been incorrect. Often a preposition is a good word to end a sentence with.
MISCELLANEOUS

- The same words have a hyphen between them in some contexts where they are used as one word, but not in others where they are used as two words.
- The on-line system was installed.
  I wrote the book on line.
- The out-of-date magazine is here.
- The magazine is out of date.

- Use which in non-restrictive clauses (clauses that don’t change the meaning of the sentence). Use that in restrictive clauses (clauses that are essential to the meaning of the sentence).
- The boat, which was big, was at the dock.
- Boats that are big must have special lights.

- Who refers to people. That and which refer to animals and things.
- The people who came to the party ....
- The box that is on the table ....

- i.e. means that is.
- The problem, i.e., the malfunctioning clock, was attended to.

- e.g. means for example. Don’t use “etc.” at the end of an e.g. list, because the e.g. means that you are just giving a few examples and that there are more instances of the same category.
- Fruits, e.g., apples and pears, are popular.

- etc. means and the rest.
- They visited many cities, such as New York, Chicago, Los Angeles, etc.

- sic indicates that you have recognized an error in the preceding word(s) of a quotation, but that you haven’t changed the word(s) because it is in a quotation. (Enclose the word sic in brackets, to show that it isn’t part of the quotation.)
- “It’s [sic] counterpart ....”
  In this example, there should not be an apostrophe in
  It’s. It should be Its. (The apostrophe is used when
  It’s is a contraction of It is ... e.g., “It’s sunny outside.”
  Its is used in the above example in the possessive case.)

PUNCTUATION

ACKNOWLEDGEMENT


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ACRONYMS

- Show the plural by adding an s.
  - CRTs
- To make an acronym possessive, add ’s.
  - The CRT’s screen
- If the line is all capitals (as in a heading), add an ’S.
  - THE CRT’S SCREEN
- Precede an acronym with —
  - a — If it begins with a consonant sound.
    (a CRT terminal)
  - an — If it begins with a vowel sound.
    (an MBA degree)
APOSTROPHE

- Use to indicate contractions or omitted letters.
  - I've
  - It's (it is)
  - TV'ers

- Use to indicate the coined plurals of letters, figures, and symbols.
  - three R's
  - 5's and 7's
  - +'s

- Use to show possession. Add 's when the noun doesn't end with an s sound. Add 's, or only the apostrophe, to a noun that ends with an s sound (either way is ok).
  - officer's
  - hostess'
  - Co.'s
  - Cos.'
  - Jones's
  - Jones'
  - Joneses'

- To show possession in compound nouns, add the apostrophe or 's to the final word.
  - secretary-treasurer's

- To show joint possession in nouns in a series, add the apostrophe or 's to the last noun.
  - soldiers and sailors' home

- To show separate possession in nouns in a series, add the apostrophe or 's to each noun.
  - Diane's, John's, Thomas', and Mary's

- To show possession in indefinite pronouns, add the apostrophe or 's to the last component of the pronoun.
  - someone's desk
  - somebody else's books
  - others' homes

- Do not use to form the possessive of personal pronouns.
  - theirs
  - yours
  - hers
  - its

- Do not use to form the plural of spelled-out numbers, of words referred to as words, and of words already containing an apostrophe. Add 's, however, if it makes the plural easier to read.
  - twos and threes
  - yeses and noes
  - which's and that's
  - ifs, ands, and buts
  - do's and don'ts

- Do not use to follow names of countries and other organized bodies ending in s, or after words more descriptive than possessive (not indicating personal possession), except when the plural doesn't end in s.
  - United States control
  - merchants exchange
  - children's library
BRACKETS

- Use to enclose a correction.
  - They arrived at 13 [12] o'clock.
- Use to supply something omitted.
  - Adams [arrived] late.
- Use to explain or to identify.
  - The president [Arnold] spoke briefly.
- Use to instruct or to add comment.
  - The report is as follows [read 1st paragraph]: ....
- Use to enclose sic when it is used to show that an error in a quotation has been recognized but not changed.
  - "It's [sic] counterpart ...."
- Use a single bracket at the beginning of each paragraph, but only at the close of the last paragraph, when extensive material is enclosed.

COLON

- Use to separate an introductory statement from explanatory or summarizing material that follows.
  - The board consists of: ....
- Use to introduce formal statements, questions, or quotations.
  - The committee stated that: ....
  - The following question came up: ...?
  - He said: [If quotation is just one sentence, use a comma instead of a colon; e.g., He said,]
- Use to follow a formal salutation.
  - Dear Ms. Jones:
- Use to separate hour and minutes.
  - 8:15 a.m.
- Use to separate parts of citations.
  - Journal of Education 3:342-358
- Use to indicate proportion (use double colon as ratio sign).
  - 1:2::3:6
• Use to separate words or figures that might otherwise be misunderstood or misread.
  • Instead of hundreds, thousands came.
  • Out of each 20, 10 are accepted.
• Use to set off introductory or explanatory words that precede, break, or follow a short direct quotation. The comma isn’t needed if a “or” if it is already part of the quoted matter.
  • I said, “Don’t you understand?”
  • “Why?” they said.
• Use to indicate the omission of understood word(s).
  • Then they were enthusiastic; now, indifferent.
• Use to separate a series of modifiers of equal rank.
  • It is a young, eager, intelligent group. but That is a clever young person. (No comma when the final modifier is considered part of the noun modified.)
• Use to follow each of the members within a series of three or more, when the last two members are joined by “and,” “or,” or “nor.”
  • horses, mules, and cattle
  • by the bolt, by the yard, or in remnents
  • neither snow, rain, nor heat
• Use to separate an introductory phrase from the subject it modifies.
  • Reset by the enemy, they retreated
• Use before and after Jr., Sr., academic degrees, and names of states preceded by names of cities, within a sentence.
  • H. Smith, Jr., Chairperson
  • Washington, D.C., schools
• Use to set off parenthetic words, phrases, or clauses.
  • The new model, developed by the XYZ project, was first used on that project.
  • but The person who gave that talk is undoubtedly a good speaker. (No comma necessary, since the clause "who gave that talk" is essential to identify the person.)
• Use to set off words or phrases in apposition or in contrast.
  • Pat Smith, attorney for the plaintiff, asked for a delay.
  • You will need work, not words.
• Use to separate the clauses of a compound sentence if they are joined by a simple conjunction such as “or,” “nor,” “and,” or “but.”
  • The United States will not be an aggressor, nor will it tolerate aggression by other countries.
• Use to set off a noun or phrase in direct address.
  • Ms. President, the motion has carried.
• Use to separate the title of an official and the name of the organization, in the absence of the words “of” or “of the.”
  • Chief, Insurance Branch
  • Chairperson, Committee on Appropriations
• Use to separate thousands, millions, etc., in numbers of four or more digits.
  • 4,230
  • 50,491
  • 1,000,000
• Use to set off the year when it follows the day of the month in a specific date within a sentence.
  • The reported dates of September 11, 1943, to June 12, 1955, were erroneous.
• Use to separate a city and state.
  • Cleveland, Ohio
  • Washington, D.C.
• Do not use to separate the month and year in a date.
  • Production for June 1955
Do not use to separate units of numbers in built-up fractions, decimals, page numbers, serial numbers (except patent numbers), telephone numbers, and street addresses.

- 1/2500
- Motor No. 189463
- 1.9047
- 639-3201
- page 2632
- 1727-1731 Broad Street
- 1450 kilocycles, 1100 meters (no comma unless more than four digits, radio only)

Do not use to precede an ampersand (&) or a dash.

- Greene, Wilson & Co. (except in indexes: Jones, A.H., & Sons)
- There are other factors — time, cost, and transportation — but quality is the most important.

Do not use to separate two nouns one of which identifies the other.

- The booklet "Infant Care"
- Wilson’s boat The Maria

Do not use to separate the name and the number of an organization.

- Western Legion Post No. 12

Do not use as the sole connection between two independent clauses (this is known as a comma fault).

Use a period or a semicolon instead of the comma.

- Say "The picnic is an annual event. This year it will be held at the park."
- Not "The picnic is an annual event, this year it will be held at the park."

**DASH**

- A dash may or may not be preceded and followed by a space. I feel that it looks better if it is preceded and followed by a space, as in the examples below (and elsewhere in this book).

- Use to mark a sudden break or abrupt change in thought.
  - She said — and no one contradicted her — "The battle is won."

- Use to indicate an interruption or an unfinished word or sentence.
  - He said, "Give me liberty —"
  - Q. Did you see — ?

- Use instead of commas or parentheses, if the meaning is clarified by the dash.

- These are shore deposits — gravel, sand, and clay — but marine sediments underlie them.

- Use to introduce a final clause that summarizes a series of ideas.
  - Freedom of speech, freedom of worship, freedom from want, freedom from fear — these are the fundamentals of moral world order.

- Use to follow an introductory phrase leading into two or more successive lines and indicating repetition of that phrase.
  - I recommend —
    - That we accept the rules
    - That we publish them

- Use instead of a colon when a question mark closes the preceding idea.

  - How can you explain this? — "Fee paid, $5."

- Use to precede a credit line or signature.

  - Still achieving, still pursuing,
    - Learn to labor and to wait.
    — Henry Wadsworth Longfellow
ELLIPSIS

- Ellipsis consists of 3 dots, with a space before the 1st dot and after the last dot. If it occurs at the end of the sentence, add a 4th dot.
- Use to indicate an omission within a quotation.
  - They said, "One two three ... seven eight."
  - They said, "One two three ...."
- Use instead of a dash if you want to. (See DASH on the preceding page.)
  - She said ... and no one contradicted her ... "The battle is won."

EXCLAMATION POINT

- Use to mark surprise, incredulity, admiration, appeal, or other strong emotion, which may be expressed even in a declarative or interrogative sentence.
- How beautiful!
- "Great!" they exclaimed.
- Who shouted, "All aboard!" (Question mark omitted)
- O Lord, save Thy people!
**HYPHEN**

- Use to connect the elements of certain compound words.
- mother-in-law
- self-control
- ex-governor
- walkie-talkie

- Use to indicate continuation of a word divided at the end of a line.
  - This line is continued on the next line.

- Use to separate the letters of a word which is spelled out for emphasis.
  - d-o-i-l-a-r-s

- Use to modify a letter or number.
  - 10-cent charge
  - 32-bit computer

- Use to avoid doubling a letter.
  - re-evaluate

- Use if the main word begins with a capital letter.
  - post-World War II

- Use to avoid awkward pronunciations or ambiguity.
  - co-worker
  - re-read

- Use after a series of words with a common base.
  - small- and medium-sized companies

**NUMBERS**

- Spell out numbers at the beginning of a sentence. Also spell out numbers under 10, except when expressing time, money, and measurement. *Note* — In my opinion, it may be clearer to put all numbers in number form — e.g., 4 — especially in technical material.

  - Four days ago ....
  - There are two items ....
  - There are 15 items ....
  - There are 2 items ....

- For numbers less than one, precede the decimal point with a zero to emphasize the decimal point.
  - 0.03
  - 0.4

- Prefer Arabic numerals to Roman numerals.
  - *Say* "10"
  - *Not* "X"

- Except in legal documents, avoid repeating a number which has been spelled out.
  - *Say* "There are two items ....*
  - *Not* "There are two (2) items ...."
PARENTHESES

- Use to set off matter not part of the main statement or not a grammatical element of the sentence, yet important enough to be included.
- Kelley (to the chairperson).
- Q. (Continuing.)
  A. (Reads:)
- The result (see figure 2) is most surprising.

- Use to enclose a parenthetic clause where the interruption is too great to be indicated by commas.
- You can find it neither in French dictionaries (at any rate, not in Littré) nor in English dictionaries.

- Use to enclose an explanatory word that is not part of the statement.
  - The Erie (Pa.) Ledger but The Ledger of Erie, Pa.

- Use to enclose letters or numbers designating items in a series, either at the beginning of paragraphs or within a paragraph.
  - You will observe that the sword is (1) old fashioned, (2) still sharp, and (3) unusually light for its size.

- Use to enclose a reference at the end of a sentence. Unless the reference is a complete sentence, place the period after the parenthesis closing the reference. If the sentence contains more than one parenthetic reference, the parenthesis closing the reference at the end of the sentence is placed before the period.
  - The specimen exhibits both phases (pl. 14, A, B).
  - The individual cavities show great variation. (see pl. 4.)
  - This sandstone (see pl. 6) occurs in every county of the State (see pl. 1).

- Put an open parenthesis at the beginning of each paragraph, but a close parenthesis only at the close of the last paragraph, when extensive material is enclosed.
- (This is paragraph 1.
  ...
  (This is paragraph 2.

  (This the last paragraph.)
QUESTION MARK

- Use to indicate a direct query, even if not in the form of a question.
- Did they do it?
- They did what?
- Can the money be raised? is the question.
- Who asked, "Why?" [Note single ?]

- Use to express more than one query in the same sentence.
- Can they do it? or you? or anyone?

- Use to express doubt.
- They said the table was 8(?) feet tall.

- Do not use if the sentence is really a request rather than a question.
- Will you enter my subscription to your magazine.

QUOTATION MARKS

- Use to enclose a direct quotation. Single quotation marks are used to enclose a quotation within a quotation.
  - The answer is "No."
  - "Your order has been received," they wrote.
  - They said, "Pat said 'No.'"
  - "Pat," said Diane, "why are you late?"
  - "The equipment will be forwarded promptly."

- Use to enclose any matter following the terms "entitled," "the word," "the term," "marked," "endorsed," or "signed."
  Do not use to enclose expressions following the terms "known as," "called," "so-called,"... unless such expressions are misnomers or slang.
  - Congress passed the act entitled "An act ...."
  - It was signed "Mary."
  - After the word "treaty," insert a comma.
  - The so-called investigating body.

- Use to enclose misnomers, slang expressions, nicknames, or ordinary words used in an arbitrary way.
  But don't overdo this usage; it could result in an affected writing style.
  - Some "antiques" might better be described as junk.

- Limit quotation marks, if possible, to three sets (double, single, double).
  - "The question is, in effect, 'Can a person who obtained a certificate of naturalization by fraud be considered a "bona fide" citizen of the United States?'"

- Type the comma and the final period inside the quotation marks. Other punctuation marks are placed inside only if they are a part of the quoted matter.
  - "The President," they said, "will veto it."
  - The conductor shouted, "All aboard!"
  - Is this what we call a "Correspondex"?
  - "Have you an application form?
  - Who asked, "Why?"
• Put open quotes at the beginning of each paragraph, but close quotes only at the close of the last paragraph, when extensive material is enclosed.
• "This is paragraph 1.
  ...
  "This is paragraph 2.
  ...
  "This is the last paragraph."

SEMICOLON
• Use to separate independent clauses not joined by a conjunction, or joined by a conjunctive adverb such as "hence," "therefore," "however," "moreover," ...
• The report is not ready today; it may be completed by Friday.
• The allotment has been transferred; hence, construction must be delayed.
• Use to separate two or more phrases or clauses with internal punctuation.
  • If you want your writing to be worthwhile, give it unity; if you want it to be easy to read, give it coherence; and, if you want it to be interesting, give it emphasis.
• Use to separate statements that are too closely related in meaning to be written as separate sentences.
  • No; we receive one-third.
  • War is destructive; peace, constructive.
• Use to precede words or abbreviations which introduce a summary or explanation of what has gone before in the sentence.
  • A writer should adopt a definite arrangement of material; for example, arrangement by time sequence, by order of importance, or by subject classification.
• The industry is related to groups that produce finished goods; e.g., electrical machinery and transportation equipment.
MORE PUNCTUATION RULES

• Periods and commas always go inside double quote marks. The only allowable exception is a single character in quotes. Note — If you are specifying information to be entered into a computer, you had best put the period outside the close quotes, or users might think that the period is part of the command (see 3rd example below). Better still, don’t use quotes at all — use a dash ... skip a space ... specify the information (perhaps in italics or bold italics) ... and then skip a space before the period (see 4th example below). In England, they always put the periods and commas outside the close quotes.
  • “We want to go to the fair,” they said.
  • Use a tilde “”.
  • Enter into the computer, “go”.
  • Enter into the computer — go .

• Semicolons always go outside double quotes.
  • They knew what was meant by "hardcopy"; they didn’t know about "software."

• Question marks and exclamation marks go inside or outside double quote marks depending on the sentence sense.
  • "Where are you going?" they asked.
  • What is meant by the word "firmware"?

• When a quote ends with a question mark that ends a clause, and a comma would normally appear at the end of the clause, it is standard to leave the comma out.
  • "Where are you going?" they asked.

• When using single quote marks instead of double quote marks, the same rules apply. (Single quotes are considered incorrect, except inside a quotation enclosed in double quotes.)

• When a sentence is enclosed in parentheses, the period goes inside the closing parenthesis.
  • (This is a sentence.)

• If the words inside parentheses do not constitute a sentence, but are at the end of the sentence, the period goes after the closing parenthesis.
  • This is a sentence (but not this).
**ACTION VERBS/ABSTRACT NOUNS**

**ACKNOWLEDGEMENT**


<table>
<thead>
<tr>
<th>Action Verb Abstract Noun</th>
<th>Action Verb Abstract Noun</th>
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<tbody>
<tr>
<td>abandon</td>
<td>establish</td>
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<td>adjust</td>
<td>improvement</td>
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<td>agree</td>
<td>invest</td>
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<td>enact</td>
<td>settlement</td>
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<td>enforce</td>
<td>treat</td>
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<td>entitle</td>
<td>(some of the <em>ment</em> family)</td>
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<td>allocate</td>
<td>absorb</td>
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<td>anticipate</td>
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<td>explore</td>
<td>divert</td>
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<td>formulate</td>
<td>emerge</td>
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<tr>
<td>implement</td>
<td>(some others)</td>
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</tbody>
</table>

*inform information*  
*justify justification*  
*limit limitation*  
*minimize minimization*  
*negotiate negotiation*  
*observe observation*  
*operate operation*  
*prepare preparation*  
*preserve preservation*  
*reactivate reactivation*  
*reconcile reconciliation*  
*record recording*  
*regulate regulation*  
*relate relation*  
*represent representation*  
*segregate segregation*  
*standardize standardization*  
*stipulate stipulation*  
*tax taxation*  
*utilize utilization*  
*verify verification*  

*execute execution*  
*exhaust exhaustion*  
*expend expenditure*  
*include inclusion*  
*inspect inspection*  
*instruct instruction*  
*intend intention*  
*issue issuance*  
*maintain maintenance*  
*perform performance*  
*prefer preference*  
*produce production*  
*recognize recognition*  
*reduce reduction*  
*refer reference*  
*remit remittance*  
*remove removal*  
*render rendition*  
*renew renewal*  
*restrict restriction*  
*retain retention*  
*review revision*  
*supervise supervision*  
*transact transaction*
REFERENCES

For those interested in some basic books on writing, I suggest the following. In addition, see the Index (next page) for books that I have referenced. Also, I would suggest that you go to a large library or, even better, a large bookstore (which is more likely to have the most popular and newest books) and see which could be of use to you. Also, ask your friends, professors (if you are in college), and others for their recommendations.

- Simply Stated — This is an interesting and very useful newsletter published by the Document Design Center (see page 36 for address and phone). It reports on developments in the writing field, including the Plain English movement (to rewrite contracts, laws, etc., in more readable language), has articles on writing, and reviews of new books on writing. The Center also publishes some useful books on writing. There is no charge for the newsletter.

- Computer Programs — If you use a computer to write, there are probably dictionaries, thesauruses, and perhaps writing style programs for your computer that you might want to look into.


- Webster's New International Dictionary, Merriam-Webster, Inc. An excellent unabridged dictionary.

- Webster's New Collegiate Dictionary, Merriam-Webster, Inc.


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Basics

- **Abstract** — Tell for whom your document is intended ... **why** ... etc.
- **Accuracy** — Check everything yourself, and with experts.
- **Active Tense** — Say "Pat will do it." Not "It will be done by Pat."
- **Clarity** — Make your document be clear and simple. Also make it appear so.
- **Completeness** — Ensure that your document has all of the information needed.
- **Conciseness** — Omit unneeded information. But don’t be cryptic.
- **Concreteness** — Talk of "blood, sweat, and tears." Not of "courage, ...."
- **Consistency** — Be consistent in format ... accuracy ... detail ... terms ... etc.
- **Consultation** — Consult a lot with **experts** and with **potential users**.
- **Contents/Index** — Have a Table of Contents and Index, with page numbers.
- **Covers** — Put **useful information** on the outside front and back covers.
- **Examples** — Have many examples. Make them **realistic**.
- **Fairness** — Use language that is **fair** to everyone.
- **Familiarity** — Use terms that are **familiar** to users. Define them if needed.
- **Format/Notation** — Use a **consistent** format and notation for similar items.
- **Highlighting** — **Emphasize** key points with bullets, bold italic type, etc.
- **Identification** — Put on your, and your organization’s **name, address, date**.
- **Integrity** — Tell the truth, the whole truth, and nothing but the truth.
- **Lists** — Don’t write out list-type information. Use **lists**.
- **Organization** — **Combine** related information. Use many **headings**.
- **Page/Section Numbers** — Number pages **consecutively**. Don’t number sections.
- **Personality** — Tell users, **What does this mean to me?**
- **Preciseness** — Use **specific** names, dates, numbers, facts, etc.
- **Purpose** — Your purpose is not to describe objects. It’s to **help people**.
- **Readability** — Use **clear typeface, wide margins**, etc.
- **References** — Tell to whom or what "you," "we," "they," and "it" refer.
- **Simplicity** — Use **simple and short** words, sentences, paragraphs, sections.
- **Summary/Conclusions** — Have a summary, and conclusions.
- **Terms** — Use the **same term throughout** for the same thing.
- **Testing** — Test the draft with **experts** and with **potential users**.
- **Timeliness** — Issue a draft **as soon as possible**.
- **Title/Headings** — Make them **clear, meaningful, complete, consistent**.
- **Warmth** — Write with **feeling**. Be informal. Say "I," "you," etc.