

Streamlining Your Documentation Using Quick References

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Abstract—You know one when you see one, even though they come in all shapes and sizes. The titles of these small, hand-held publications usually contain the word *guide*, *summary*, or *reference*. Many of us in the documentation business have coined the terms *job aid* or *quick reference* to identify these small packages of information that readers can refer to at a moment's notice. Quick references are small, portable packages of information that can be seen in the pockets of programmers, high-tech equipment operators, and even shoppers at the grocery store. But where did they come from? What strange breed of documentation is this? Is there rhyme or reason in the design of quick reference documentation? This paper presents a description of various quick references and discusses their design.

WHAT ARE THEY, AND WHERE DID THEY COME FROM?

During this 20th-century age of miniaturization, almost every household and office item has become smaller. The spirit of human invention has been hard at work making everything in our lives more compact and easier to manage. From automobiles to zero population growth, we are becoming a society of smaller sizes.

Even those things that we read are becoming fewer in pages: novelettes, short stories, picture magazines. The trend is no different with high-technology instructional material. As technical writers in the 1980s, we are acutely aware of our readers' demands for fewer pages and the echoing of that demand by our managers and our accountants. While learning to do our job better, we have become well drilled in the proverbial practice of "cut, cut, cut."

Economy, fashion, and good writing are three forces working together, bringing about the quick-reference genre. The popularity of this new packaging of information is growing, and professionals in the field commenting on user documentation are saying things like the following:

- 90% of the time, 90% of the needs of 90% of the readers can be covered in a simple summary card [1].
- Quick references are a big time saver [2].
- User-friendly means having a quick reference card [3].

In support of the shrinking document, research shows that

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today's reader hardly reads any instructional material at all [4], and in response, writers of instructional material have offered an alternative to the fat manual—the quick reference. What is a quick reference? What does it look like and what does it do?

To better understand quick reference documentation, we can group quick reference documents into several different types, and then examine each type for insights into their construction.

The following types of quick reference documentation are discussed:

- Slide rules
- Syntax summaries
- Informational guides
- Posters and templates

Slide Rules

Reminiscent of the engineer's slide rule (and perhaps a direct descendent), this type of quick reference is mechanically operated and contains tabular data. The tabular data are arranged in such a manner that cross-table relationships can be recognized quickly. For example, in the table below there are two columns of numbers. What is their relationship to each other?

0	– 18
– 10	– 23
– 20	– 29
– 30	– 34
– 40	– 40
– 50	– 46

The relationship only becomes obvious when overlaid with a template that provides the missing information. The table is produced on a card that can slide through the template, performing temperature conversions for the user (figure 1). The user needs no mathematical concepts—only the tool.

This type of documentation is interactive and helps the reader perform specific tasks.

This quick reference is not read from "cover to cover" but is looked at only when needed, making it task-oriented

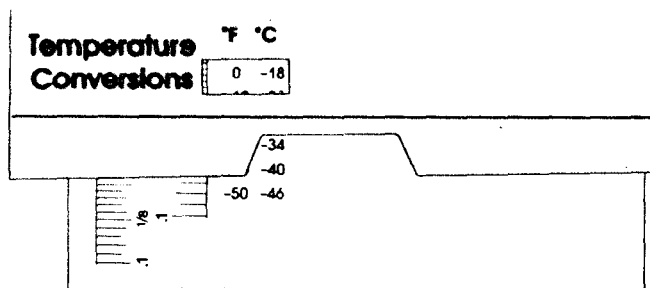


Figure 1. Slide Rule for Fahrenheit/Celsius Conversion

for the reader. The guide eliminates the need for bulky look-up tables.

Are there any drawbacks to this type of all-in-one tool? This nonstandard design may be a problem for a physically-impaired reader. Some people turn pages without the full use of their hands, and a mechanical design may not be usable. Also, the layout for a complex slide rule type guide is more complicated than that for a typed page. The pasteup is tricky, and printing costs rise as die cuts and assembly requirements are added.

Still, a little effort from both the reader and the writer can overcome these problems. Incidentally, a poll conducted among a group of 50 computer users, programmers, and analysts revealed that only four percent of the population surveyed had ever used such a tool. This relative obscurity can work in favor of a writer who has the desire to give readers something new; renewed interest in a boring product is always a feature that writers are encouraged to add.

Syntax Summaries

Often included with today's software packages, syntax summaries help the user work with the software. The syntax for the program is explained and the program's commands (that is, subroutines, control words, key words, field names) are usually diagrammed, allowing the reader to scan the command of all its possible parameters.

Typically, the commands are arranged in alphabetical, functional, or numeric order and appear in a consistent format. Sometimes unique program information is included along with the syntax diagrams. In figure 2 the command summary presents a listing of subroutine names and specific information about each subroutine.

One look at the subroutine JARSET shows that this subroutine is used to "reset the primitive attributes to their default values" and has no parameters (indicated by { }).

Summaries of this type eliminate the need for a user to refer to a more complete reference manual while operating the program.

A poll taken among 50 users of quick reference documentation shows that most users look for syntax in a syntax

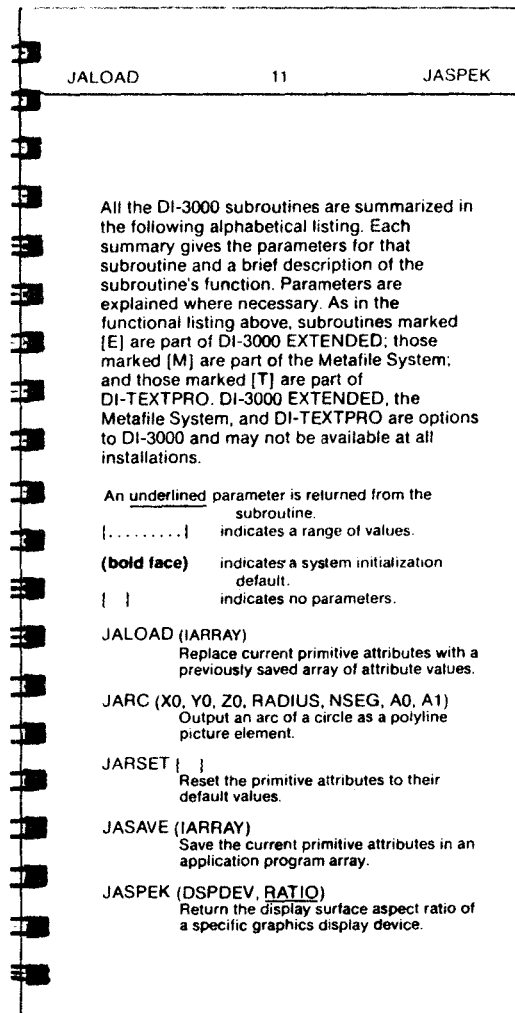


Figure 2. DI-3000 Quick Reference Guide. (Precision Visuals Incorporated, 1985)

summary first (if available), then turn to the user's manual. In response, writers should

- Group syntax logically
- Include only relevant information
- Allow easy access to syntax information by designing a quick reference or putting the information on line

Informational Guides

Informational guides have been around as long as the printing process itself, in the form of flyers and brochures. Advertisers and politicians have used this form of communication for years, and now technical communicators are jumping on the band wagon. A technical information guide can outline a new product or announce a new service; it is often used to shortcut the reader through miles of other, less task-oriented information.

This type of guide offers a fast path for a particular task by providing a quick summary of information (much like the syntax summary described above). Informational guides also serve as reminders and planning tools, keeping the reader on track with just a glance.

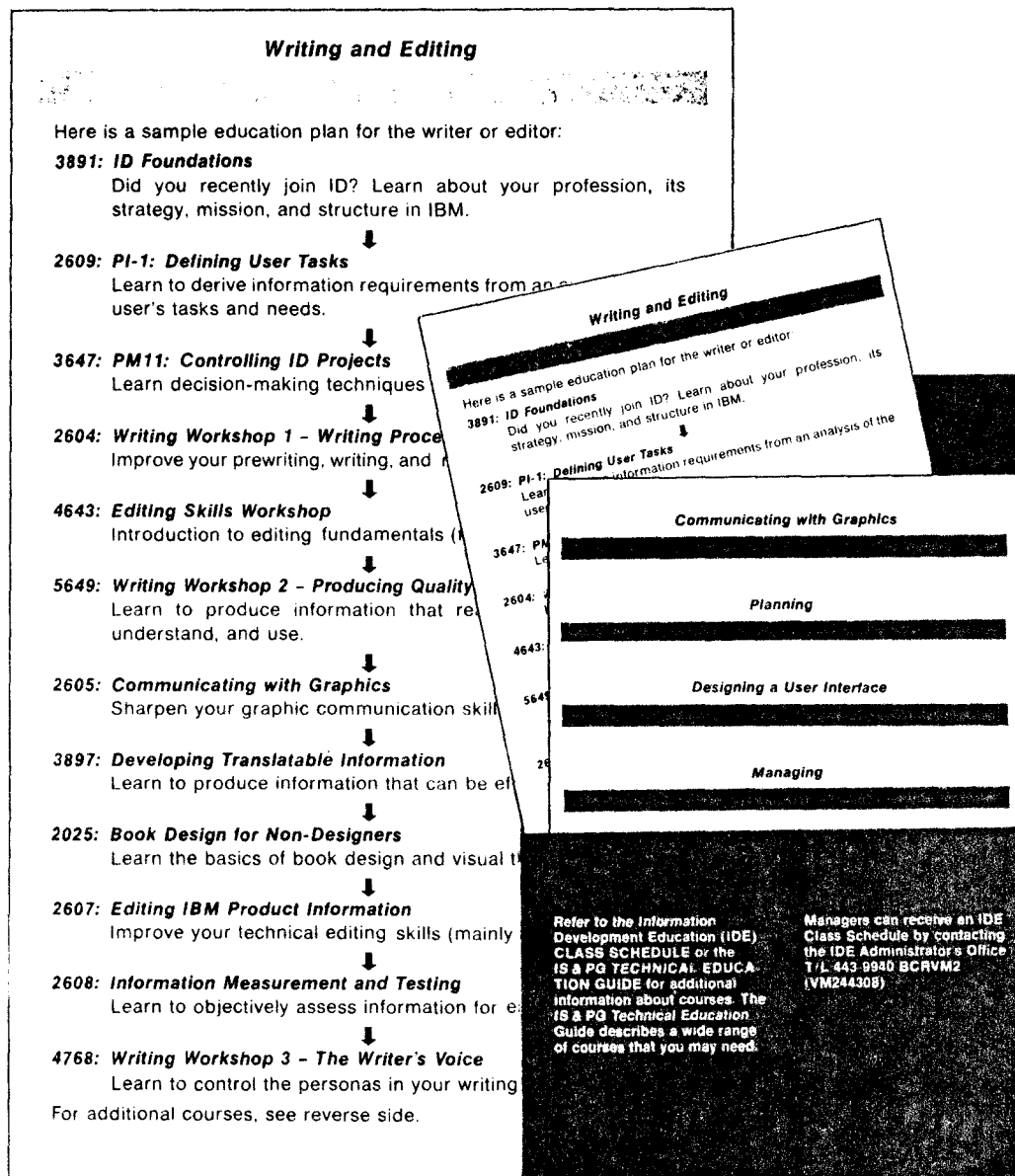


Figure 3. Information Development Education (IBM Corporation, 1986)

Figure 3 illustrates a planning guide given to employees to aid them in planning their corporate education. In this guide, readers take a shortcut through a catalog of course descriptions, class schedules, and other information, leading them down a quick career path.

Informational guides come in all shapes and sizes. Take, for example, the Flexible Computer Corporation's information guide (see figure 4). This polygon shaped guide is made of flexible material that can be twisted and folded to reveal different panels of information. Information is the *only* limitation in preparing a memorable guide.

Quick Procedure Guides

With the arrival of sophisticated household and office equipment, we have become increasingly dependent on

manufacturer-supplied operating instructions. From grinding with our Cuisinarts to desktop publishing with our laser printers, we follow more and more procedures supplied by manufacturers.

The format for these procedures varies from instructions printed directly on the product to a 500-page product manual. As a cook in a hurry, or a desktop publisher with a deadline, which would you choose? As a manufacturer paying for all the printing costs, which would you choose? The answers should be obvious.

Consequently, many procedures for today's products come as quick procedure guides. Found on pay telephones, bank teller machines, and sophisticated office equipment, these aids prompt us through life by using a mixture of text and graphics for their presentation.

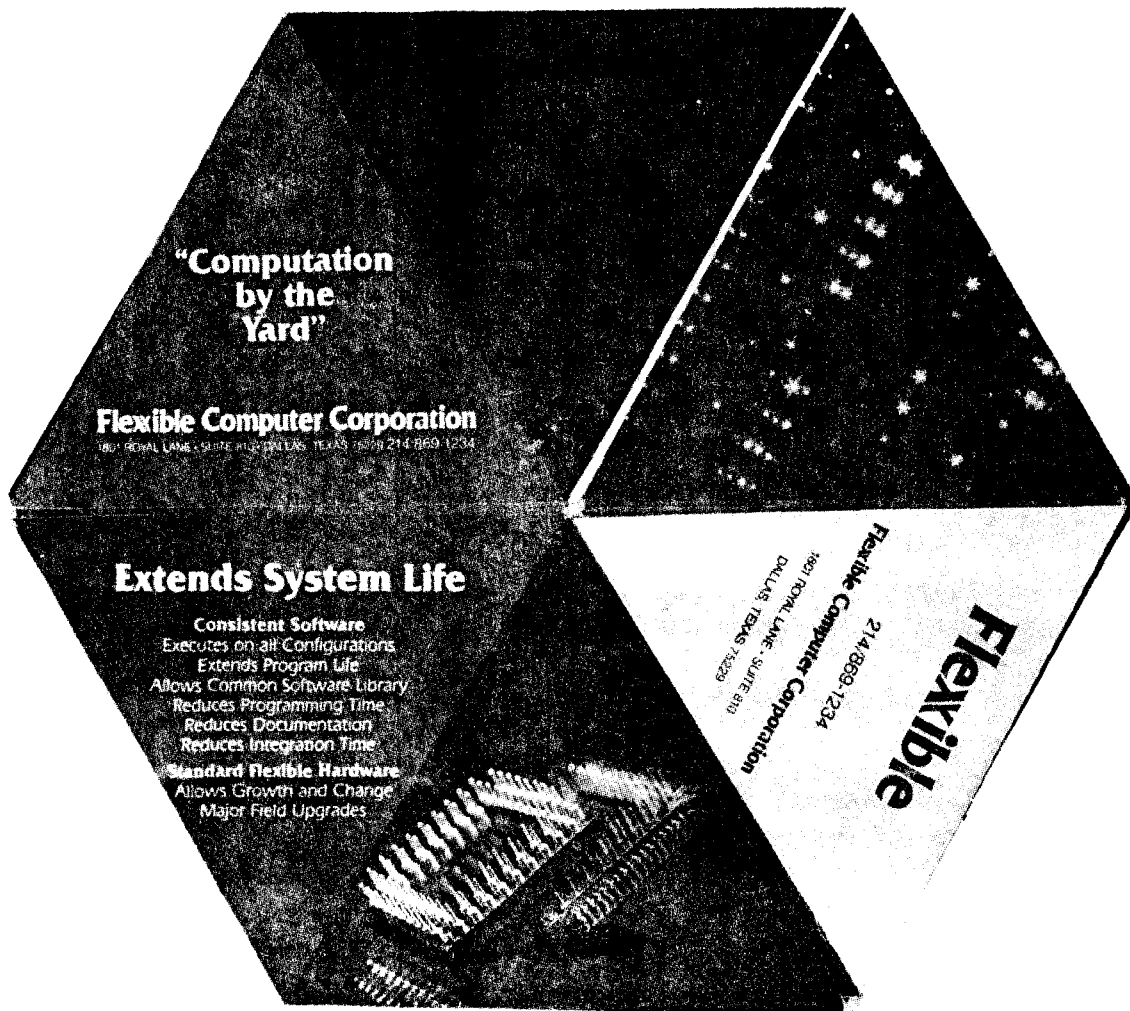


Figure 4. FLEX/32 Computer Brochure (Flexible Computer Corporation, 1984)

The example in figure 5 shows a procedural guide for placing paper in a large office printer. A mixture of procedural instructions and graphic illustrations guide a user through the task of adding paper to the input bin. The rest of the small booklet details how to turn the machine on and off, cancel a print job, restart the printer, and decipher any error messages encountered.

A survey of 20 users, taken from people as they collected their output from the IBM 3820 printer, revealed that 30 percent of the users had read the booklet; no one had ever read anything else about the printer, even though many other publications (user and diagnostic manual, paper reference manual, etc.) for the printer were readily available.

Short, task-oriented procedures packaged in a quick reference save the user from wading through hundreds of pages of product information and also give the impression that the product is easy to use. Take, for example, instructions found inscribed on the face of a bank teller machine:

1. Place your bank card in the slot below.

2. Key in your password.
3. Select a transaction from the menu.

This instruction set is short, sweet, and to the point.

Another attractive feature of a quick procedure guide is that it can be attached directly to the equipment in either label or booklet form. Copier guides, for instance, are often built into the copiers themselves.

Posters and Templates

Posters and templates replace taped notes stuck on computer terminals and crumpled crib sheets tacked on walls. Office graffiti of this nature is often vital information for the worker, but usually an eyesore for the office manager and others as well. Tastefully designed graffiti, a poster or template quick reference can be both attractive and functional.

In poster form, the "writing on the wall" provides a lot of information in one quick look (figure 6).

WordPerfect programs helps a user keep track of key assignments between the two programs, especially when the user must switch back and forth from one program to another.

DESIGNING A QUICK REFERENCE

Is quick reference documentation designed any differently than other documentation? The answer is yes and no. As you have seen from the previous classifications of quick reference documentation, there are distinct design differences among slide rules, syntax summaries, informational guides, and posters/templates. Size, use, placement in the work area, and audience are all factors that appear to set quick reference documentation apart from its full-blown predecessor, the manual. However, quick reference documentation still fits well within the technical documentation family.

A writer experienced with traditional document design should feel equally comfortable designing quick reference documents. Many design strategies that work well with large user manuals, long reports, and heavy catalogs also work well with the quick reference.

Creating Computer Software User Guides: From Manuals to Menus, a recently published book on user documentation by Doann Houghton-Alico [5], contains the following design tips:

- Allow adequate white space.
- Print for legibility.
- Group information logically.
- Include only relevant information.
- Give readers easy access to information.
- Design effective headings.

What do these proverbs mean in quick-reference design?

White Space

Houghton-Alico calls on writers to allow "adequate" white space, as do most researchers in this field. What does this mean to someone working with small pages and miniature type sizes? Does the guideline of 40 percent print and 60 percent space [1] apply here? Or is the application of white space more important than the ratio?

Brockmann [1] states that the emphasis should be placed on *active* white space (space that separates units of information and allows the reader to discriminate between sections) rather than *passive* white space (space that simply rings the perimeter on the page). Active white space is also different from white space controlled by the selection of type style and type size.

When working with active white space in quick references, writers need to take extra care to position the space effectively, regardless of traditional ratios. Keep like informa-

tion together while separating groups of information with small, carefully measured parcels of white space. Use white space with type style and type size to create a visual hierarchy on the quick reference page.

Legibility

Pocket Pal [6] reminds us that readability and legibility are *not* synonymous. "Readability is the ease of reading the printed page whereas legibility refers to the speed at which each letter or word can be recognized."

Our goal as writers of "fast track" information is to remove debris from the page and to use well-oiled type. Small typefaces often slow readers down but larger typefaces take up more white space on an already reduced page size. What should a designer of quick references do?

- Avoid typefaces that have long ascenders and descenders; they require more leading.
- Print your quick reference on paper with a texture that does not interfere with a small typeface (rougher textures often cause broken type).
- Select a typeface that is legible at small point sizes. Remember that the actual size (x-height) of the letter is what counts and not the point size. For example, 9-point Century is more legible than 9-point Garamond; 9-point Helvetica is in the middle of the legibility range.

Logical Organization

Houghton-Alico suggests that we organize our information logically. We must then ask, "logical for whom?" Information written for Captain Kirk probably needs to be structured differently than information written for Mr. Spock. In their exploratory research, Flowers, Hayes, and Swarts [7] conclude that functional documents should be organized around actions, rather than terms. This immediately brings to mind one type of quick reference that defies such pioneering research.

In over 30 cases surveyed, syntax summaries were found built around key terms (commands, subroutine names, control words, key words, fields, etc.) used within the software program. These key terms were listed in alphabetical or numeric order. In figure 2 the program's key terms (commands) are listed alphabetically. The writer organized the information without regard for any possible actions that the user operating the software might take. Dr. Spock, a specialist from the advanced planet of Vulcan, might understand this "logical" grouping; the nonspecialist Captain Kirk will experience technical difficulties.

To make a syntax guide useful to both types of users, the specialist and the nonspecialist, the key words should be grouped together according to the user's actions and then listed alphabetically within each action group.

Flowers, Hayes, and Swarts also suggest that we organize information around the reader's questions and around the

user's actions. Anticipate what the reader might ask first: What is this all about? To whom does it apply? What do I have to do first?

For example, consider figure 3. The question, "What do I do first?" is answered by using the document's structure; the courses are listed in the order they must be taken. The question, "Where do I get more information?" is answered up front—right on the front panel.

Are these temporal orderings the only way to go? Elizabeth Harris suggests not. Harris [8] suggests that patterns derived from discourse semantics are also useful. The use of spatialization by classification is one alternative, according to Harris. This concept stems from the phenomenon that spatial relationships exist between some groups of information. For example, in a business letter the salutation comes before the closing remarks and in a manual, the footnotes appear at the bottom of the page.

Put into practice, spatialization by classification is exemplified by a font poster (a poster pictorially listing all the fonts manufactured for a phototypesetter), grouped by listing all the fonts used for headings at the top of the poster, all the fonts available for body text in the middle of the poster, and all the fonts commonly used for footnotes at the bottom of the poster. This spatialization helps organize the information for retrievability.

Another way to logically group information is to take a *directional* approach. For example, if describing the operation of a pasta machine, use the pasta as a guide, and describe each part of the machine beginning where the pasta enters the machine and closing with a description of where the noodles come out of the machine.

In support of the directional approach, Britton [9] suggests we use a "control statement" that logically places the reader within the material and then helps guide the reader through the remaining maze of information presented. Britton contends that an unfamiliar object is less difficult to handle if a statement is made on the item's function, thus telling us what it is. For example, "an injection molding machine heats thermostatic granulate to a fluid state and forces the fluid into a mold under pressure."

The injection mold machine quick reference could then go on to describe the major parts of the machine by function (heater, injector, granulate feeder). The information is grouped logically within the document using the machine's functions as organizational headings.

Relevant Information Only

With our quick reference information surrounded by white space, typographically correct, and presenting a logical grouping, we can then concern ourselves with what is included and what is left out. Since we plan to put our quick reference information into a small apartment with one

small closet and no garage, we must be very careful not to collect excess baggage. As suggested by Britton [9], a control statement may function as a takeoff point; what comes next needs to be scheduled and tested for its appropriate place in the material.

Britton concludes that technical information is often "confusingly conclusive; much is clarified by omission." Engineers and scientists often want to tell everything there is to know, and all at once. While writing the quick reference, our job is to cut and trim any excess information. Test each sentence for relevance and importance. The quick reference document should not be an all-inclusive document.

Complicated or dangerous tasks might be better left in the manual, allowing readers to absorb any background information they might need. Don't be afraid to refer the user to the manual. It is important that quick references offer a road map to another, more complete source of information.

Information Accessibility

The reader's ability to maneuver within the quick reference is so important that we either design maneuverability in or design usability out. Take, for example, the 16-panel folding command summary for the AlphaBeta program—400 syntax diagrams, all in an illegibly small typeface, listed alphabetically on both sides of a folded strip of card stock that resembles an accordion. Readers quickly retreat.

In a recent poll of 30 programmers, who were given the choice of a short booklet-style command summary or a long folded-card stock format, 80 percent voted in favor of the booklet-style summary. The physical format of the quick reference can make or break its popularity in reader opinion polls.

As a result of pay-phone research, Riley, Schoeffler, and Karhan [4] suggest dividing detailed information into related categories and using the category labels to construct an index.

The RolmPhone Quick Reference shown in figure 8 (a quick procedure guide) does exactly that, using die-cut pages as a visual and physical indexing mechanism.

We should also note recent research in cognitive psychology, where Huckin [10] tells us to make the topic of each section visibly prominent by using headings and subheadings and by placing topic sentences at the beginning of each paragraph.

Riley, Schoeffler, and Karhan [4] also suggest providing visually obvious cues that are redundant with the text (for example, colors, pictograms, and other symbols). In the RolmPhone example, the procedure again does exactly that, highlighting the procedure with icons for each step of the individual procedure.

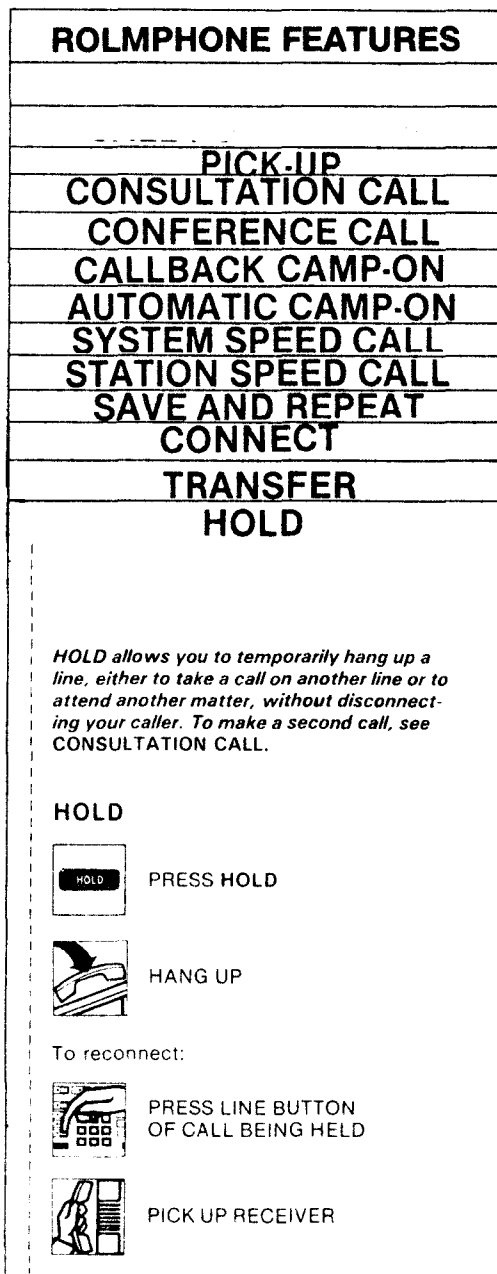


Figure 8. RolmPhone 120/240/400 Quick Reference Guide (Rolm Company, 1985)

Effective Headings

Headings in quick reference should accommodate the reader's search for needed information [7]. They can only do that if they

- Contain an action or agent
- State or answer a question

In figure 9 there are four heading statements that answer the following questions for the user:

- How do I start?
- How do I save?
- How do I clear the screen?
- How do I exit?

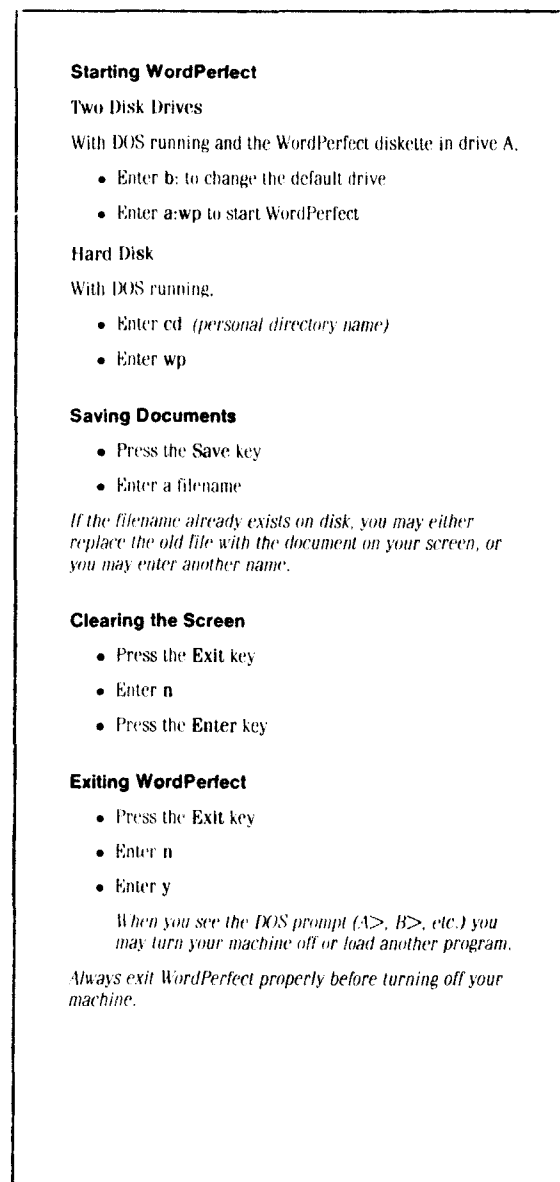


Figure 9. WordPerfect 4.0 Quick Reference for the IBM PC, XT, AT, and Compatibles (SSI Software, 1984)

Robert I. Williams, a document designer interested in evaluating the effectiveness of technical documentation, reminds us that headings have other objectives. Titles have nuances [11]. Williams suggests that we can use titles to emphasize subject matter and also bury material by giving it skimpy billing. For example, a typical user's guide for a software program may be broken down and titled by function. The "raciest" functions are often given larger headings than those functions of the program that are not bug-free at the time of the product's release. For another example, take the software product that converts data from a competitor's product into a usable form. If the competitor is a *close* competitor, the heading given the competitor's product may be minuscule.

Williams concludes that every element of first impression counts: every filling in or leaving out shapes the message.

CONCLUSION

With the economics of publishing joining forces with the fashionable demand for quick and clean documentation, we can expect to see the quick reference message continue to be reshaped into even more compact forms. As today's technical writers become more experienced with working clear writing techniques into quick-reference documentation, the shape of quick references will become even sharper, better able to cut through the growing mire of information.

The shapes described in this paper (the slide rule, syntax summary, informational guide, quick procedures guide, posters and templates) will continue to change as this decade marches on. Human factors testing on quick reference documentation is also evolving, and will soon reveal the usability of the forms within this genre.

For now, by practicing Houghton-Alico's proverbs:

Print for legibility
 Group information logically
 Include only relevant information
 Give readers easy access to information
 Design effective headings,

we can build on what we know works, while at the same time experimenting with different types of communication aids for our readers.

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When You're Editing Copy ...

- Don't guess; look it up.
- Never be afraid to question a word or phrase that makes no sense to you.
- Always ask whether something sounds dumb.
- Remember that just because something looks right doesn't mean it is.
- Keep in mind that an overlooked error is always easy to spot in the published copy.

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