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Pamphlet 25-36

Military Publications

# Design and Production of INSTRUCTIONAL PUBLICATIONS

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Department of the Army  
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**UNCLASSIFIED**

# ***SUMMARY of CHANGE***

DA PAM 25-36

Design and Production of INSTRUCTIONAL PUBLICATIONS

**RESERVED**

## **FOREWORD**

Publications produced within the Army-wide Doctrinal and Training Literature Program (ADTLP) are primarily instructional in nature. They present doctrine developed in response to Threat actions, lessons learned under similar situations, and new equipment development. The doctrine and ideas are presented with the expectation that readers will eventually relate the information to their own situations and apply the knowledge accordingly. The material presented is more than reference in that it expects intelligent action to occur from the principles advanced.

Considering all this, presentation format becomes very critical. Not only must complex concepts be conveyed, but the very presentation method must stimulate and motivate readers to accept the idea, plus help them to retain the information.

The individual most qualified and most responsible for meeting these goals is the visual information specialist (VIS). This pamphlet has been written to assist VISs in preparing doctrinal and training literature.

## Military Publications

# Design and Production of INSTRUCTIONAL PUBLICATIONS

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**By Order of the Secretary of the Army:**

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**Official:**

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**History.** This publication has been organized to make it compatible with the

Army electronic publishing database. No content has been changed.

**Summary.** This pamphlet applies to publications that are part of the Armywide Doctrinal and Training Literature Program (ADTLP). It is for use by all visual information specialists (VISs), illustrators, phototypesetter operators and all other production team members who produce ADTL publications. It covers design and production of these publications and explains the roles of the design and production team. Changes to this pamphlet are not official unless authenticated by The Adjutant General.

**Applicability.** Not Applicable.

**Proponent and exception authority.** The proponent agency of this pamphlet is

the U.S. Army Training and Doctrine Command.

**Suggested Improvements.** Submit changes for improving this publication on DA Form 2028 (Recommended Changes to Publications and Blank Forms) to Commander, U.S. Army Training Support Center, ATTN: ATIC-ETL-D, Fort Eustis, VA 23604-5168.

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*ARNG:* D, E.  
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## Chapter 1

### Team Expertise

Instructional publications do not merely communicate information as magazines and newspapers often do; nor do they serve as reference documents full of raw data like catalogs. Military instructional publications impart knowledge soldiers need to retain if they are to fight and win.

#### A. GENERAL

People who produce instructional publications must be capable of performing more than the usual graphic arts requirements. They must exercise their knowledge of motivational factors and, in effect, analyze the project almost as they would if they were teaching a class. That means giving full consideration to three basic requirements:

1. *Accuracy of information:* A good teacher would not knowingly present incorrect information. The developmental process followed in the production of Army doctrinal and training literature assures both the concepts and the words that express them are correct. But, all visual efforts involved should also be correct. Graphic depiction consistently produces a much greater impact than the written word alone. It is, therefore, imperative that all visual representation and presentation be completely accurate.

2. *Presentation of information:* Most instructors and teachers know that the methods they select to present their information can literally result in success or failure of the project. They are fully aware that the presentation of material must be so planned as to ensure rapid understanding and be enjoyable or interesting enough to capture the student's complete attention. These are the same basic objectives that must be considered when planning the presentation of material in an instructional publication.

3. *Retention of information:* Information does not truly become knowledge until it is consigned to memory. Therefore, presentation of the material must be planned to both aid retention and trigger instant recall of important information. The importance of the retention factor cannot be emphasized too much. Marshal Ferdinand Foch put it succinctly in saying, "It's too late to study combat tactics during the heat of battle. Then, soldiers can only apply what they have learned. Therefore, they must know a lot and know it thoroughly."<sup>1</sup>

(a) Providing that knowledge is the proper function of instructional publications.

(b) Discussions of the team concept invariably concentrate on the lead players; the subject-matter experts (SMEs), editors, and visual information specialists (VISs). Very little has been written about the expertise of the people that make up the design and production portion of the doctrinal and training literature team. This team consists of the visual information specialist, the illustrators, and the phototypesetter operator. These people create the designs and visualizations, and produce the illustrations, graphics, and type for the publications. They are also the resident experts on print reproduction requirements, equipment, procedures, and processes. Their common interests bind them into a cohesive and highly proficient team. In fact, empirical data show that the closer these individuals are physically located to each other, the better the results of their labor. This chapter discusses each member of the design and production team; their individual attributes, and how they use their talents when interacting with each other.

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<sup>1</sup> Ferdinand Foch, *The Principles of War* (New York: H.K. Fly, 1918): 11.

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## THE DOCTRINAL AND TRAINING LITERATURE TEAM

**Quality doctrinal and training literature requires continuous interaction among SMEs, editors, VISs, and illustrators. This is achieved by forming a doctrinal and training literature team and collocating its members for utmost efficiency. The minimum module consists of an SME, an editor, a VIS (printed material), and two illustrators. The SME may be assigned to the team on a temporary basis. When it is possible to locate typesetting equipment with the team, a phototypesetter operator is included. The phototypesetter operator and the illustrators work under the direct supervision of the VIS. The team works together to produce instructional publications.**

Figure 1.

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### B. VISUAL INFORMATION SPECIALISTS

1. VISs assigned to a literature production activity are specialists operating within a specialty. The subspecialty appears as a parenthetical addition to the title; visual information specialist (printed material), for example, or (print media) or sometimes just (PM). VISs are the designers. They are also experts on print reproduction requirements, equipment, procedures, and processes. They convert typewritten manuscripts into publications that aid both retention and recall of important information, and present material in an interesting and comprehensive manner.

2. The title, *visual information specialist* is virtually unknown outside of Government. In the private sector, normally more than one individual might perform the tasks and duties required of a VIS. These counterparts to VISs may specialize as designers, art directors, layout artists, and typographers.

3. Designers might strive to aesthetically, artistically, and cosmetically enhance the appearance of a project. **VISs would give primary consideration to elements of essentiality and functionality.**

4. Art directors might call for artistic representation, renderings, and subject matter purposely planned to attract attention. **VISs would insist on only factual representations and precise depictions that clarify, augment, or emphasize the accompanying text.**

5. Layout artists might concentrate on pleasing and attention compelling arrangements of elements in a space. **VISs would concentrate on merging the text and graphics on every page of a publication, while maintaining a sense of consistency and continuity throughout.**

6. Typographers might seek the unusual, intriguing, and/or tricky, when planning a heading or caption. **VISs strive for legibility in every number, word, and sentence.**

7. While VIS concerns might sometimes differ from those of commercial designers, sales and advertising experts share a common goal with VISs; they are both tasked with selling products, ideas, or concepts.

8. Along with editors, VISs meet with SMEs starting with the initial planning sessions. SMEs write the manuscripts. VISs assist both SMEs and editors in all stages of manuscript development by providing advice and assistance on basic design concepts, effective use of graphics, integration of written and visual material, technical and reproduction processes, and similar matters.

9. VISs begin their close relationships with illustrators and phototypesetter operators when they receive the approved final edited draft manuscript. At this time, the design and production team becomes fully operational. As team leaders, VISs provide the necessary guidance and direct the efforts of the other design and production team members. At the same time, VISs maintain a close liaison with the SMEs and editors.

### C. ILLUSTRATORS

1. In the private sector, those who produce accurate and precise drawings or paintings are more often referred to as illustrators. Artists are more often thought to produce imaginative representations or interpretations of subjects. Realistic and interpretive art are very different. In Government, the term illustrator applies to those who produce precise drawings, as well as to those who produce artistic representations. However, illustrators on design and production teams must be illustrators in the realistic sense and must also be highly skilled draftsmen. Very little need exists for artist skills on the team.

2. Competent illustrators possess a knowledge of anatomy to aid them in constructing human figures and employing

them convincingly. At the same time, they can make complex drawings which they create, more often than not, from rough draft copy or word descriptions. The nature of the work requires a mastery of drafting techniques and the execution of precise, hard-line pen-and-ink renderings. Subjects range from depictions of battles, tactical vehicles, weapon systems, and figures in action to scenes of cities, towns, and rural areas. Illustrators work in a variety of media, both line and tone. They create the style or mood to fit the main theme of the publication.

3. In the final production step, illustrators set aside their illustrating and drafting duties and concentrate on using their skills as print media production specialists. Illustrators must have a thorough knowledge of all the tools and materials of their craft and must be completely familiar with printing production requirements and procedures.

4. During the initial stages of design and production, illustrators might inform VISs on illustrating styles and techniques locally available, photo-retouching capabilities, and production problems that may surface during the initial concept development.

5. While VISs produce comprehensive (comp) dummies, illustrators, adhering to both written and oral instruction from VISs, create rough illustrations and conceptualizations for inclusion in the comp.

6. In the absence of a junior VIS, illustrators assist VISs by researching source material, such as photographs and existing illustrations; producing photoprints for size and fit determination; and by assembling comp dummies.

7. Although illustrators work very closely with VISs during the design stage of production, they do not normally get involved with phototypesetter operators until the camera-ready mechanical (CRM) production phase.

#### **D. PHOTOTYPESSETTER OPERATORS**

1. Phototypesetter operators, sometimes referred to as typesetters, should not be confused with typists or word processor operators. Fully proficient typesetters can interact successfully with the VIS and illustrators because they possess a technical knowledge of typography that includes full comprehension of typographic markup symbols, type mixing, type styles and sizes, leading, copy fitting, proper line lengths, and formatting. They are also capable of making aesthetic decisions, such as where to break lines in a ragged-right composition.

2. VISs usually prepare type markup sheets during the planning phase of design. The VISs and typesetters go over the markup sheets together to ensure they have considered all situations and to see if any impractical demands are indicated. Most typesetters have a good understanding of the most commonly used printing processes. They can evaluate rough draft copy and usually visualize how the type will look when set as specified.

3. Typesetters must know the equipment well enough to detect malfunctions, identify problems, make corrections, and perform minor repairs. This knowledge and ability is helpful in avoiding long periods of equipment downtime. However, typesetters must possess more than a mechanical aptitude, as phototypesetting is also a photographic operation. Therefore, they must know how to mix chemicals and control chemical temperatures to properly develop photographic paper and ensure production of high-contrast, good quality phototype. Improper mixtures or temperatures can result in poor quality or loss of image. Experienced typesetters can determine if a distortion in the color of the developed paper is a problem in the paper, in the water or chemical temperature, or in the processor's drying temperature.

4. During the initial typesetting phase, typesetters work directly with VISs and produce galley proofs according to specifications prepared by VISs. The specifications are recorded in two places: on the type markup sheets and on the approved final edited draft, a double-spaced typewritten manuscript. The manuscript is normally a word processor printout of the draft as it appears on the floppy disk given to the VIS. The floppy disk contains only words—no phototypesetting coding or specifications.

5. Before turning galley proofs over to a VIS, typesetters check them carefully for accuracy and for machine errors such as wrong fonts and improper hyphenation. The VIS, in turn, double checks the proofs to ensure that all typesetting was done according to the specifications. When satisfied, he or she proceeds with the design and preparation of the comp dummy.

**NOTE: Occasionally a phototypesetter operator will have to keystroke an entire publication because, for one reason or another, a floppy disk was not available. Arrangements should be made to give the galley proofs to the editor for proofing before they are turned over to the VIS.**

## **Chapter 2**

### **Design Essentials**

To produce effective instructional publications, the VIS must successfully blend four ingredients—format, typography, graphics, and color when used.

#### **Section I**

##### **Format**

The VIS establishes the format by settling on a basic plan for the visual and typographic layout of the publication. The

format may be one that is widely recognized, vaguely familiar, or never seen before, although the latter is highly unlikely. Regardless, it is the approach the VIS feels will best communicate the information in the manuscript.

## A. BASIC FORMAT

Most Army-wide Doctrinal and Training Literature Program (ADTLP) publications have been following the general style and page-by-page layout developed for the old how-to-fight publications. Precise specifications were necessary for those books, since they required a format that soldiers were familiar with, a format that facilitated both legibility and readability, and a format that enabled soldiers to make quick identifications. The requirement to produce how-to-fight publications no longer exists. What does exist, however, is a need for a carefully planned approach to solve specific problems that occur in specific publications. Although one format might serve the cause of publication X, it may be entirely wrong for publication Y. (Neither can it be considered the *only* format that will serve publication X.) Although some degree of standardization in formatting military publications is both necessary and desirable, it should not be so restrictive that it prevents the use of the designer's better judgement in some instances.

1. *PUBLICATION SIZE* Publications produced through the ADTLP deal with a variety of units, locations, and user requirements. These user needs affect the format of the products and normally, their sizes. However, it should be noted that ADTLP sizes were determined by printers—not user needs. Designers are encouraged to request exceptions whenever they can be justified.

(a) *Full Size*— $8 \frac{3}{8}$  by  $10 \frac{7}{8}$  Inches This is the standard size for the majority of ADTLP publications because it easily meets most user requirements. Publications such as field manuals (FMs), training circulars (TCs), soldier training publications (STPs), and Army Training and Evaluation Programs (ARTEPs) use this size. This size is particularly suitable for publications that might contain abnormal amounts of tables and charts that require broadside layout, or when many foldouts are essential.

Most printing of publications is done with the binding on the long dimension. Although virtually all printers can bind along either side, some charge a premium for binding on the short dimension. This should be kept in mind when thinking about a broadside (horizontal) format. If the story can be told with single pages printed broadside backed up head-to-foot, the binding must occupy the long dimension.

However, if the full  $21\text{--}\frac{3}{4}$ " ( $10\text{--}\frac{7}{8}$ " plus  $10 \frac{7}{8}$ ") expanse is needed, the binding must be on the short dimension and the pages must be printed in the conventional head-to-head manner. See page 2-3 for additional information on binding.

(b) *Intermediate Size*— $5 \frac{3}{8}$  by  $8 \frac{3}{8}$  Inches This is the least-used size for ADTLP publications. It is too large to fit comfortably in most pockets and too small to accommodate graphics, tables, and charts that require large display areas. If the publication being designed has lots of foldouts, this size should not be used. On the other hand, it can be used for publications that will be used in conjunction with aircraft and tactical vehicles. Intermediate size is ideal for publications that will be carried on and stowed on vehicles and aircraft.

(c) *Pocket Size*— $4 \frac{1}{8}$  by  $6 \frac{1}{4}$  Inches Although most ADTLP publications are produced in the full size format, pocket size is the most popular. The main reason: many proponents believe soldiers should have *their* book with them most of the time, plus soldiers do not have large enough pockets to carry full size publications. Pocket size publications should be restricted to those that soldiers *must* carry into the field and refer to frequently. The VIS can estimate the number of printed pages that will be in the finished publication. Publications with more than 554 pages are too thick to fit in soldiers' pockets. When a publication will contain more than 544 pages, the VIS should either ask the editor and SME to do some additional editing or ask the SME to reduce the amount of doctrine or training being covered. If the text is as short as possible, the VIS should consider making the publication either intermediate size or full size.

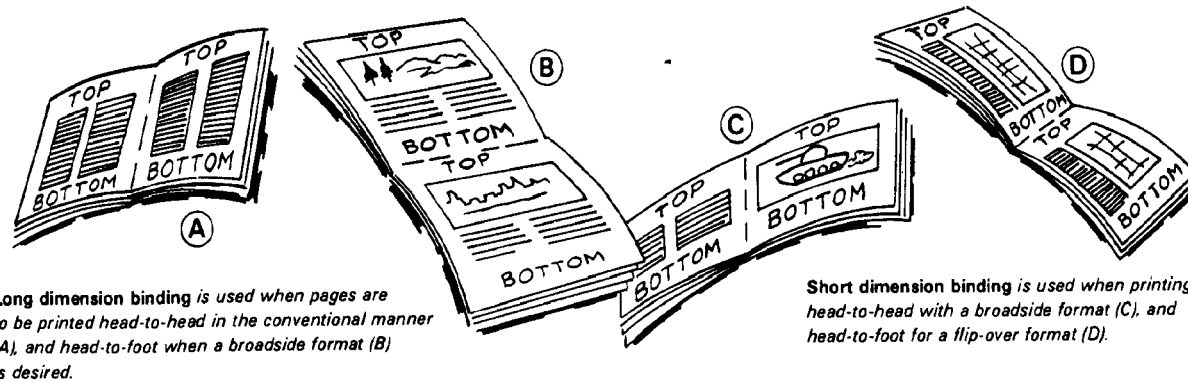


Figure 2.

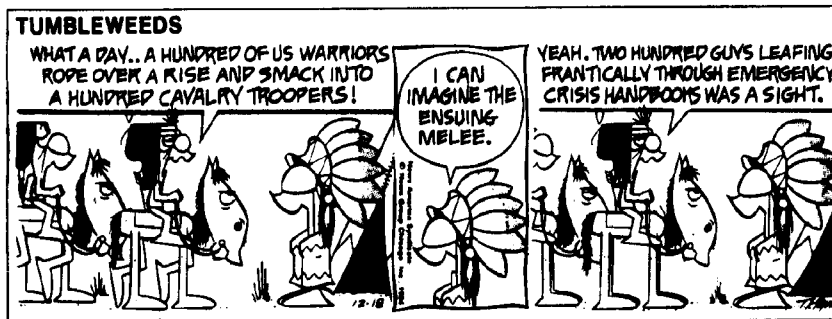
## 2. BASIC GRIDS

(a) A centralized system for design and production of literature allows for all publications to be designed and produced at one location. This centralized concept requires very little in the way of precise specifications and standards. However, in a decentralized system the designers and producers are widely dispersed and subjected to various degrees of supervisory proficiency and experience. It is this situation more than anything else that dictates the need for establishing standards and specifications that will help provide solutions to problems, as well as achieve standardization.

(b) The most logical solution for format problems is to create a series of grids. A wide variety of design problems have been satisfactorily resolved through application of the grid concept. When used in planning the basic format of a publication, this concept can, among other things, establish a sense of continuity that would otherwise be difficult to obtain.

(c) There is much pro and con about grids and grid systems. Some designers say no design skill is required when working with a grid; that the designer simply drops the various elements into prescribed slots. Others say attractive and effective layouts can be achieved when a system is used by skillful and artistically sensitive designers; that the grid helps to create a feeling of continuity and flow without stifling creativity.

(d) However, it is also agreed that when used by a less than skillful designer, the grid system could very easily cause dull and rigid layouts. Basic page grids for every approved size of publication in the ADTLP are shown in appendix A. VISs can adapt these grids or variations of them to accommodate the requirements of any particular project.



TUMBLEWEEDS by Tom K. Ryan. Copyrighted by and printed with permission of News America Syndicate.

Overuse of pocket size publications and handbooks has helped make them a frequent cause for humor.

Figure 3.

(e) *Sinkage*

(1) All three publication sizes share certain requirements. One of these is the need for consistent sinkage. By definition, sinkage is the distance from the top of a page to the first line of text.

(2) The sink line is the heavy horizontal line shown on the illustrations. It marks the position of the first line of body copy. Headings, subheads, cutlines, running heads, and all other similar type elements project into the white band of space above the sink line. Graphics may or may not project, depending upon the page composition. Properly applied sinkage forms a horizontal white band that helps achieve continuity between facing pages by creating a visual alignment. The grids in appendix A show the amount of sinkage suggested for each format.

(f) *Columns*

(1) To determine how many columns will fit on a basic page, the VIS needs to know the size of the page, the desired width of the columns, and the required width for margins and gutters between the columns. Few problems would occur if all columns were the same width. *But, the size of type used for the text controls the width of the columns.* ADTLP publications have four different approved sizes of type for text, and each type size has ideal maximum and minimum line lengths. All this is explained in detail in Section II.

(2) Several factors control column width, but column length is primarily a matter of choice. This is part of the VIS's decision-making process. VISs can choose to plan for either even column endings or uneven (ragged) column endings.

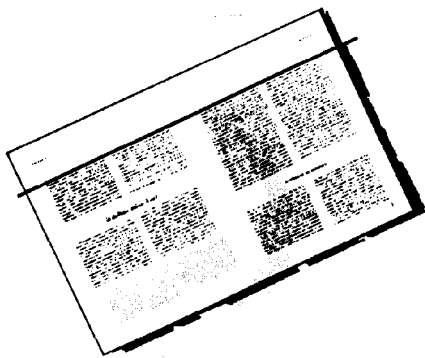
(3) *Even Column Endings.* In an even column ending format (also known as even bottoms) each column of text should reach the lower limits of each page unless stopped by a graphic. In this case, the space should not be less than  $\frac{1}{8}$  nor more than  $\frac{1}{4}$  inch from the graphic. Spacing should remain consistent throughout the publication.

a. When body text on the last page of a chapter is not sufficient to cover the entire page, it does not have to extend to the bottom limits of the page. However, the number of columns should be consistent with the rest of the chapter. As with all the basic pages, the text starts at the sink line at the page top. Or, if a graphic begins at the top of the page, the columns should be within the prescribed  $\frac{1}{8}$ - or  $\frac{1}{4}$ -inch distance from the bottom of the graphic.

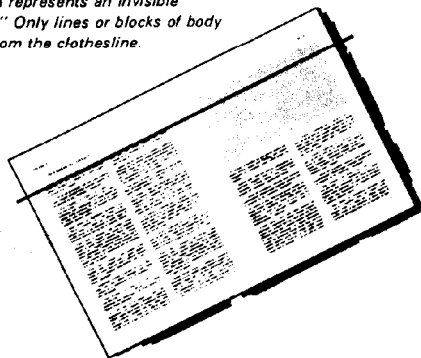
b. If the designer is seeking a tight, blocked, formal appearance, then even column endings is a good starting point. The designer can further tighten the format by squaring off the column endings at other locations such as before a main heading, before a section title, or before a graphic.

(4) *Uneven [Ragged] Column Endings.*

a. The terms "uneven" and "ragged" are unfortunate choices of words. To some they imply a lack of aesthetics.

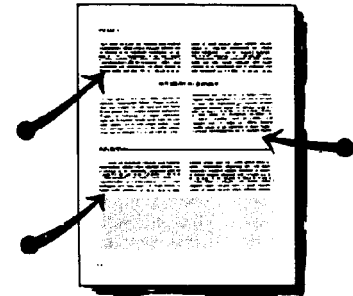


The sink line represents an invisible "clothesline." Only lines or blocks of body copy hang from the clothesline.



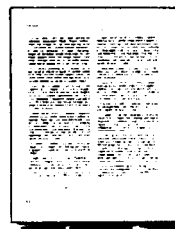
The sink line should occupy the same position on every page in the main body of the book. Notable exceptions are right-hand pages that fall opposite chapter starts. In instances such as these, where a fixed sink line position cannot be used, a competent designer will strive for a visual alinement at some other point.

Popular "squaring off" points.

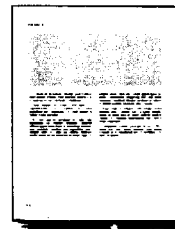


The last page in a chapter . . .

can look like this . . .



or like this . . .



or even like this . . .

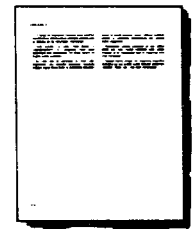


Figure 4.

b. Actually, if uneven column endings are carefully planned, the effect can be aesthetically pleasing. It is an excellent way to inject white space into a page and eliminate a cramped, squared-off look. It also helps to eliminate some copy-fitting problems that are particularly troublesome when working with even column endings. Although ragged bottoms are more suitable to three-column than two-column formats, the latter can be equally effective if planned so that the inside column (next to the binding edge) is slightly longer than the outside column. For a three-column format, some experts contend that the center column should be slightly longer than the other two. For the best results, the designer should try to manipulate the lines of type so that no two columns on a facing-page spread are the same length.

3. **PUBLICATION BINDINGS** A publication is planned to be produced either bound or loose-leaf. The decision should be based solely on the expected frequency of change. If the publication will be subject to frequent changes, it should be designed in a loose-leaf format. Otherwise, it should be bound. Periodically, changes to specifications or regulations will require a book to be either bound or loose-leaf, regardless of which binding is best. When this happens, VISs have no choice but to comply.

While three-hole drilling is generally reserved for loose-leaf publications, bound publications can also have three-hole drilling. If a bound publication is to be part of a set or package and put in a binder, it will require three-hole drilling.

(a) *Bound* Designers should become familiar with the different binding styles, all serving special purposes. They include saddle stitch, side stitch, case bound-sewn, plastic comb, spiral wire, paste-on-fold, and perfect bound. The most commonly used styles for ADTLP publications are—

- Saddle stitch.
- Side stitch.

- Perfect bound.

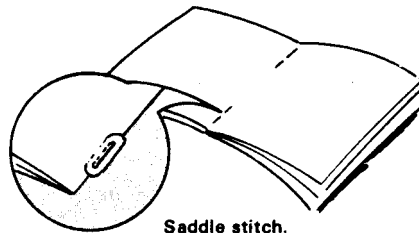
(1) In the saddle stitch style, the folded pages are gathered together, nesting one inside the other, and held together by wires forming staples through the centerfold. Before planning for saddle stitch, consider the weight of the paper and the number of pages in the publication. If the publication uses lightweight paper (below 40 lbs.), it is best not to exceed 128 pages. If the publication uses heavier paper, around 80 pages should be the limit. Books that are saddle stitched have wraparound covers. Publications containing a very small number of pages normally use the paste-on-fold style. Usually, the decision to saddle stitch or paste-on-fold is left to the printer's discretion.

(2) In side stitch, the folded pages, or signatures, are stacked one set upon another and stapled from front to back cover parallel to the gutter edge. A side stitched book does not have a wraparound cover. Instead, the cover will normally consist of one piece of page-size cover stock for the front and a duplicate for the back.

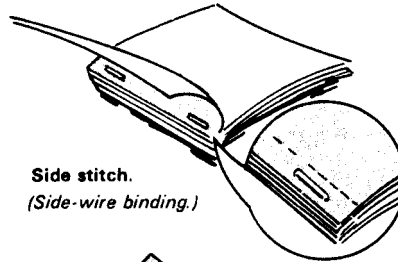
(3) A perfect bound book can contain any number of pages. The folded pages, or signatures, are stacked one set upon the other, similar to the side stitched conformation, and fixed to the wraparound cover with a flexible adhesive. The perfect bound book is the only one of the three styles described that has a spine or backbone.

(a) *Loose-Leaf* In loose-leaf publications, the pages are not bound; they are drilled, usually with three holes, about  $\frac{5}{8}$  inch away and parallel to the gutter edge. The folded pages are slit or perforated for easy separation. Like a side stitched book, loose-leaf publications have a single-sheet cover. When shipped, the pages are held together either by shrink wrap, banding, staple, or side stitch. The user removes the shrink wrap, banding, staple, or side stitch and encloses the publication in a suitable ringed binder.

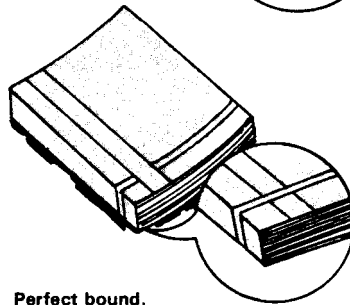




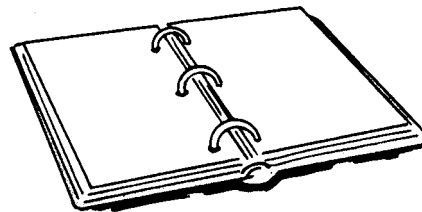
**Saddle stitch.**  
*(Saddle-wire binding.)*



**Side stitch.**  
*(Side-wire binding.)*



**Perfect bound.**  
*(Adhesive-bound binding.)*



**Loose-leaf pages in a binder.**

**Figure 5.**

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## **B. MAJOR COMPONENTS**

Presentation of information in instructional publications requires both textual and visual formats. Some components may require only a separation of text, while others may require visual assistance. This portion concerns itself primarily with the visual formatting of major components. The following components of ADTLP publications appear in the sequence in which they are listed:

1. Cover
2. Title page
3. Foreword
4. Table of contents
5. Preface
6. Introduction
7. Parts

8. Chapters
9. Sections
10. Special segments
11. Appendixes
12. References
13. Glossary
14. Index
15. Authentication page

Whether part of a page, a single page, or multiple pages, each major component should be designed to maintain its individuality and, at the same time, not appear foreign to the design characteristics of the basic pages.

### 1. COVER

(a) Besides providing a measure of protection, a cover performs three primary functions:

- **It accurately relates the book's title by use of wording and illustrations.** For example, if the book is about air assault maneuvers, portraying a parachute would be more accurate than portraying a tank.
- **It conveys the presentation style of the book.** A cover with words and lines at different angles is out of place on a book that is formatted in a tight and sedate style.
- **It motivates individuals to look inside.** A book is initially judged by its cover. Poor cover design and amateurish illustrations can reduce the book's credibility.

(b) VISs must consider administrative requirements when they plan covers. Some of these requirements pertain to all publications, and some pertain only to particular publications.

(c) All publication covers should—

- Display the official publication number and title.
- Display the distribution restriction statement on all unclassified publications.

**NOTE: Markings for classified publications must be in accord with the provisions of AR 380-5. This pertains to the defense classification of each paragraph, section, chapter, appendix, illustration, table, or other portion, as well as the marking of each page and the overall classification of the publication.**

- Not display service school insignia or similar insignia; however, branch insignia may be displayed on ADTLP covers. Other Army-wide publications can display only the DA seal on the cover.

(d) Bound publication covers should—

- Display the publication number and title in addition to the month and year of issue.
- Have a backbone between the front and back covers of perfect-bound publications.
- Display the publication number and title and the month and year of issue on the backbone of all perfect-bound publications containing more than 100 pages.

(e) Loose-leaf ADTLP publication covers remain blank on the inside front and back. This is not a requirement for other Army-wide publications.

(f) Multivolume publication covers should—

- Be consistent (same format) from volume to volume.
- Display the overall publication title in addition to the individual title.

(g) In addition to all pertinent requirements listed above, joint and multiservice publication covers must display the publication number for each participating service.

2. **TITLE PAGE** The title page is always the first right-hand page in a book. The top portion contains the publication number, the appropriate heading, the date, the title, and, when appropriate, a supersession statement at the bottom of the page. The remainder of the page may contain either the foreword, table of contents, or the preface.

Title page elements. Proper placement is important.

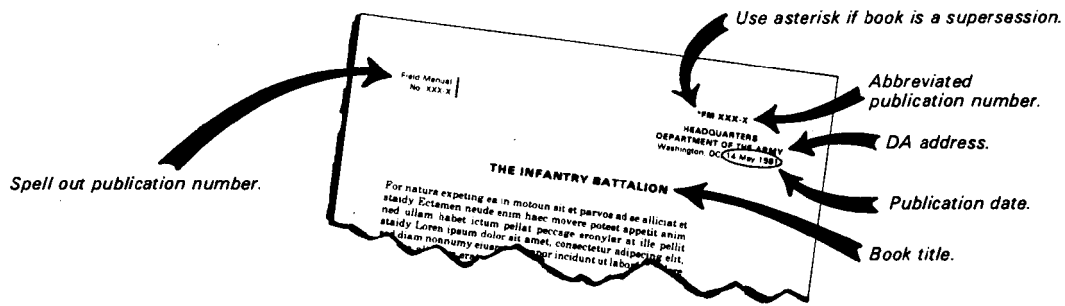


Figure 6.

3. **FOREWORD, PREFACE, AND INTRODUCTION** The primary formatting requirement for these three components is almost entirely textual. Seldom are all three components found in any one publication. Only the preface is required. When any of them do appear, their order of sequence in relation to other components is the same as described on page 2-4. Design considerations for these three components will be almost always confined to typographic formatting.

#### 4. TABLE OF CONTENTS

(a) The table of contents plays an important role. Although it may not contribute to the information retention requirement, it does provide an outline of the information contained in the book and a means for rapidly locating the information. If a book contains a foreword, start the table of contents on a new page and continue on for as many pages as necessary. The table of contents does not have to start on a right-hand page. If the first available page is a left-hand page, it may start there. Parts, chapters, and sections are listed in the table of contents. Main paragraphs and, if considered necessary, first subparagraphs may also be listed. Any further extension could make the table of contents too busy to be functional. To be truly effective, each level of subordination should be quickly and clearly identifiable.

(b) There are times when a writer plans to provide the reader with compact segments of information. These are frequently equipped with second, and sometimes third, subheads in order to pinpoint the exact location. When confronted with this kind of manuscript, the VIS must make a judgmental decision: should he or she increase the length and bulk of the table of contents by including first and second subheads, or should the table of contents be limited to chapter titles and main headings, with the first and second subheads listed in supplemental tables of contents at the beginning of each chapter?

(c) The wise designer will discuss the issue thoroughly with the editor before settling on a course of action. Both approaches are in common use. The choice must be based on what will best suit the publication.

5. **PARTS** The editor decides whether to organize a book into parts. If it is, the VIS will have to resolve any problems involving visual format. In this regard, a two-part page-numbering system will cause the most problems.

(a) **Two-Part Page Numbering** In this page-numbering system (also described as the loose-leaf numbering system), the first numeral identifies the chapter, and the second numeral identifies the page. Both loose-leaf and bound publications may use this system. When using two-part numbering, the VIS can avoid problems by not using a separate division page to indicate the beginning of each part. Instead, the part number and title can be placed at the top of the first chapter-start page in that part.

(b) **Consecutive Page Numbering** In this system, pages are numbered with consecutive Arabic numerals starting on the first page, the title page. Page numbers in books with consecutively numbered pages carry no reference to chapter numbers. Therefore, including a separate division page at the beginning of each part, although not recommended for all books, is a possibility.

#### 6. CHAPTER-START PAGES

(a) Chapters always start at the top of a new page. They should not be on the same page with text from a previous chapter or component. In loose-leaf publications, chapters start on right-hand pages. A loose-leaf format indicates that frequent changes are anticipated. By having right-hand page chapter starts, changes can be confined to the affected chapter and not affect other chapters in the book.

(b) A chapter start on the left-hand page of a consecutively numbered book creates no problem. However, a minor adjustment is necessary if the book uses two-part page numbering. If, for example, this occurs in Chapter 6, the page would be numbered 6-0 instead of 6-1. The next page, the first right-hand page in the chapter, would be numbered 6-1.



TUMBLEWEEDS by Tom K. Ryan. Copyrighted by and printed with permission of News America Syndicate.

*The table of contents cannot be expected to fill every need, but a good one is a definite asset to any publication.*

Figure 7.

(c) All chapters within a publication should be in the same format. The first page of each chapter displays the chapter number and the chapter title. Chapter-start pages may also contain introductory material such as untitled introductory paragraphs and mood-setting illustrations. However, if one chapter includes an introductory paragraph, then all should. Likewise, if one chapter has a mood-setting illustration, then all should. When introductory paragraphs and mood-setting illustrations are included, they occupy the same positions on each chapter-start page.

(d) There is only one first page to each chapter, and it is formatted as described in the preceding paragraphs. The use of additional pages for the purpose of enhancement or other cosmetic reasons is not advisable.

7. **SECTIONS** When sections are used, Section I begins at the start of the chapter. The only information that may precede it is a brief untitled and unnumbered introductory paragraph that pertains to the chapter as a whole. Second and succeeding sections can begin anywhere on a page directly following the preceding text. A section would start on a new page only when the preceding page is full.

#### 8. **SPECIAL SEGMENTS**

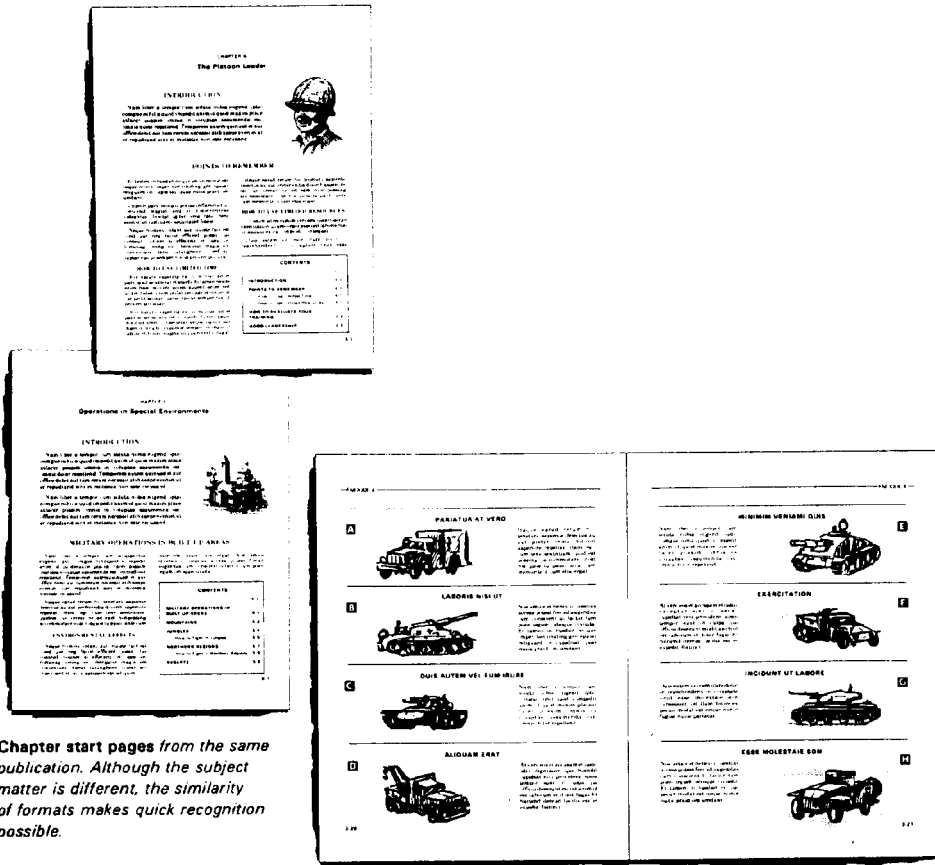
(a) A *special segment* is that portion of an instructional publication that differs in format from both normal text and graphics. Almost every doctrinal publication contains information that does not fit into normal book divisions and subdivisions. Some of these include—

- Segments that identify weapon systems and equipment, both friendly and Threat.
- Situations that call for visualization of progressive actions.
- Special foldouts, foldins, and forms.
- Scenarios.

(b) Special segments do not have specific design requirements. However, they should be consistent in the types of elements used and in their positioning. Formats that are foreign to the basic design characteristics of the publication should not be used.

(c) When designing special segments, VISs should design both left-hand and right-hand pages. Otherwise, the segments will appear as a series of only left-hand or only right-hand pages instead of the facing-page layouts found in better planned publications.

9. **APPENDIXES** Appendix pages should follow the same basic format as the rest of the publication. This is not always possible when working with appendixes that consist mainly of illustrations, laundry lists, examples of typewritten or handwritten orders, or extracts. To ensure consistency, the VIS should examine the appendixes both individually and collectively. He or she can then develop formats that will present the information legibly and comprehensively while maintaining the integrity of the design in relation to the rest of the book. VISs should ensure that all appendix headings are displayed the same in both the typography and the position they occupy on the page.



Chapter start pages from the same publication. Although the subject matter is different, the similarity of formats makes quick recognition possible.

Facing pages in a special segment. Note how balance is achieved through design of a format for a left-hand page that can be reversed for use on a right-hand page.

Figure 8.

10. FORMS

(a) Blank copies of Army-wide forms that are stocked, and command and agency forms may not be included in Department of the Army (DA) publications. If it is necessary to use an Army-wide form as an example, it must be completely filled in. To further protect against use and/or any misunderstanding, the word EXAMPLE or SAMPLE can be superimposed. The text should reference the prescribing directive from which the form originated, stating where it can be obtained and instructions for its intended use.

(b) Forms authorized for local reproduction by HQDA are known as “-R” forms. An illustration of a blank “-R” form, in its exact image size, must be included in the publication prescribing its use.

(c) Department of Defense (DD) forms are used by two or more departments or agencies of the Department of Defense. If DA has been authorized by Office of the Secretary of Defense (OSD) to locally reproduce a DD form, the following statement must be included in the prescribing directive: “DD Form \_\_\_\_\_ is authorized for local reproduction on 8-1/2 by 11 inch paper (or other pertinent size). A copy for reproduction purposes is located at the back of this manual.”

11. GLOSSARY, REFERENCES, AND INDEX

(a) Although these divisions do not contain the same type of material found in the rest of the publication, they should follow the publication’s basic format. Anything other than the simplest, most direct method of delivery can lead to overdesign. The material in the glossary, references, and index is purely referential in nature. As such, it does not have to meet the same requirements described earlier for presentation and retention. Also, smaller type is permissible which, in turn, permits shorter line lengths and narrower columns.

(b) Considering all this, VISs may find their efforts to achieve similarity to the rest of the book limited to the typeface and positioning used for the appendix letter and title. In such cases, ensure the heading arrangements duplicate those in the rest of the book, and ensure the body of the glossary, references, and index match one another as closely as

possible.

**NOTE: References should be listed in Appendix A. However, in publications produced in the TRADOC portion of the ADTLP, references are identified as such and located after the glossary and before the index.**

12. **AUTHENTICATION PAGE** All ADTLP publications are authenticated as being official by the inclusion of an authentication page that contains the signature blocks of the Chief of Staff and the Adjutant General of the United States Army. The authentication page is normally the last page in the publication. However, if necessary, it may be printed on the inside back cover of bound publications. In loose-leaf publications, the authentication is always printed on the last page, never on the inside back cover. VISs should ensure that the typefaces and sizes used on the authentication page are compatible with the rest of the publication.

## **Section II Typography**

The design of any publication cannot be considered complete if little or no thought has been given to typography. In the field of publication design, a visual information specialist, or any other designer, lacking in his or her knowledge of typography will face a good deal of difficulty. This section will provide helpful information and guidance.

The reason for using any printed material—not only instructional publications, but any printed material—is to deliver a message; to communicate. But a random sampling of all kinds of Army literature will reveal an embarrassing amount of printed matter that fails to fully communicate. One main reason is a lack of organization and sound typographic design.

### **A. AIDING ORGANIZATION**

1. If we were asked to name one outstanding deficiency that could be shared equally by writer, editor, and VIS, it would be the lack of organization. A good writer knows that a well-written publication depends on proper organization.

2. A good editor will ensure the proper organization of a manuscript before proceeding further. And a VIS can enhance or damage an entire project depending on how competently and conscientiously he or she organizes the visual presentation of the material.

3. Too many people involved in military publishing think of design only in the aesthetic sense—art oriented. Informed individuals know that all organization is achieved by planning. And even though the design of a publication can be consistent and organized in itself, if that organization bears no relation to the text, it is useless.

### **B. ACHIEVING LEGIBILITY AND READABILITY**

1. In the world of typography, art and science combine to present a printed message in a way that makes it easy to read. This is readability in its most basic sense. To achieve legibility, designers must select the proper typefaces. Then, to achieve readability, they specify the correct measurements for type size, column widths, and leading; and control type contrast to alleviate monotony, without interrupting the flow of the copy.

2. The terms *legibility* and *readability* are often interchanged when used by some leading experts in the area of typography. However, as the readability of a publication encompasses much more than typography, many experts will limit their usage to *legibility* when discussing only the typography of a publication.

3. Good typography can also be passive: Experienced designers exercise restraint in using arrows, boxes, bullets, dingbats, ornaments, and other obvious gimmicks that may disrupt a smooth thought flow and hinder legibility. They know that proper use of white space is very important, and they are subtle in the way they use it to either separate a series of unrelated thoughts or to tie related thoughts together. As part of the typographic organizational process, experienced VISs consider the relative importance of each paragraph, of each element, as well as proper emphasis, and maintain consistency in matters of presentation. They also observe the principles of functional typography.

4. The principles of functional typography began with investigations conducted primarily by psychologists. As the studies developed, the psychologists began to discover patterns in how readers respond to printed type both physiologically and psychologically. Their findings interested educators, graphic arts practitioners, journalists, and recently, computer scientists.

5. We now understand that the interaction between readers and printed information involves the *ergonomics of typography*. Today the ergonomics of typography is more important than ever because—

- The world has become an information-oriented society.
- Business and industry have become saturated with electronic and print media information.
- Ever-growing stacks of paperwork go unread, or if scanned, the information is immediately forgotten.

6. This concern has generated a revival of interest in research dealing with effective typography. Researchers are

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<sup>2</sup> H. Griffing and S.I. Franz, "The Conditions of Fatigue in Reading," *Psychological Review* 3 (September 1896): 513-530; cited in *Typography: How to Make it Most Legible*. Rolf F. Rehe (Carmel, IN: Design Research International, 1981): 69.

now looking for ways to—

- Increase reading speed and comprehension.
- Capture reader attention.
- Generate positive reader response.
- Enhance the appearance of printed materials.

7. Graphic industry standards evolved directly from the results of many intensive and far-reaching projects and studies. Because ergonomics plays such an important role in perception and legibility of type, typography has been extensively studied and researched. Rolf F. Rehe of Design Research International references 184 such studies, some going as far back as 1896.<sup>2</sup> As with all scientific research, these studies were researched using prescribed tests, procedures, and methods. The eight basic methods established for measuring legibility of typography are—

- Speed of perception.
- Fatigue in reading.
- Perceptibility at a distance.
- Perceptibility at peripheral vision.
- Visibility.
- Reflex-blink technique.
- Rate of work.
- Eye movement.

### **C. COMPARING TYPESET TO TYPEWRITTEN TEXT**

1. Instead of saying that communications set in type are more reader friendly than those produced on a typewriter, researchers declare that typeset copy is in itself an ergonomically superior form of communication. Studies that compared typeset with typewritten text have proven that readers of typeset copy were able to instantly recognize thousands of words by their shapes. However, when reading typewritten text, these same readers experienced difficulties. Their eyes took longer to identify word shapes. This was caused in part by the letters being more widely spaced when produced on a typewriter.

2. Readers are more likely to read and remember a well-designed typeset text while the same text in typewritten or word processor form will more likely go unread, or forgotten soon after it is read.<sup>3</sup> Despite an abundance of data supporting typesetting, most literature-producing activities in the Army have probably been told at one time or another to produce a publication with typewritten copy instead of typeset. The reasons almost always involve cost and time. The notion that it can be produced cheaper and fielded quicker is not entirely true.

3. Objective studies prove it is not cost-effective to produce a publication with typewritten text instead of typeset text. (See table below.) The case study in the example following concentrated solely on time, material, and cost factors. An analysis of this study revealed the following:

- A typewritten soldier training publication (STP) will require approximately 40 percent more pages than one that is typeset. What might normally be a 200-page book when typeset becomes a 280-page book when typewritten.
- Thickness of the book will increase from about one-half of an inch for a typeset 200-page book to approximately three-fourths of an inch for the same number of typewritten words.
- Producing the 80 more pages of camera-ready mechanicals (CRMs) that will be needed will increase the in-house cost for labor by at least 28 percent.
- Printer's charges will increase because the job will require 40 percent more materials such as paper, film, press printing plates, and printing ink. Additional printer's charges will reflect the 40 percent increase in camera, stripping, press, and bindery time.
- Shipping costs will increase because of the additional weight.
- Storage requirements will increase by 40 percent.

4. Proponents of typewritten text considered the time required for keystroking. They assume that the text would have to be typed twice, once by a typist and again by a phototypesetter operator. Although that may have been true 10 to 15 years ago, it is not so today.

5. In the publishing field, typewriters are becoming obsolete; word processors are in. Even in the most basic of integrated systems—one containing only a word processor and a phototypesetter—the two units are normally compatible so that the text is keystroked on the word processor and recorded on a diskette. The diskette is used to transfer the text to the phototypesetter. Other than inserting the typesetting codes, which can also be done on some word processors, the phototypesetter operator does very little keystroking.

**Table 1  
PRODUCTION LABOR COSTS**

PRODUCTION STEP	AVG RATE PER HOUR	AVG HOURS PER PAGE		FOR CAMERA-READY COPY TOTAL LABOR COST	
		TYPEWRITTEN	TYPESET	280 PAGES* TYPEWRITTEN	200 PAGES TYPESET
Type (Clean copy)	\$6.41	.5	—	\$ 897	—
Typeset	\$7.20	—	.8	—	\$1,152
Page Paste-up	\$9.97	2.5	2.5	\$6,979	\$4,985
		3.0	3.3	\$7,876**	\$6,137

Notes:

\* Typewritten text requires approximately 40 percent more space (pages) than typeset.

\*\* In-house labor cost increases by 28 percent.



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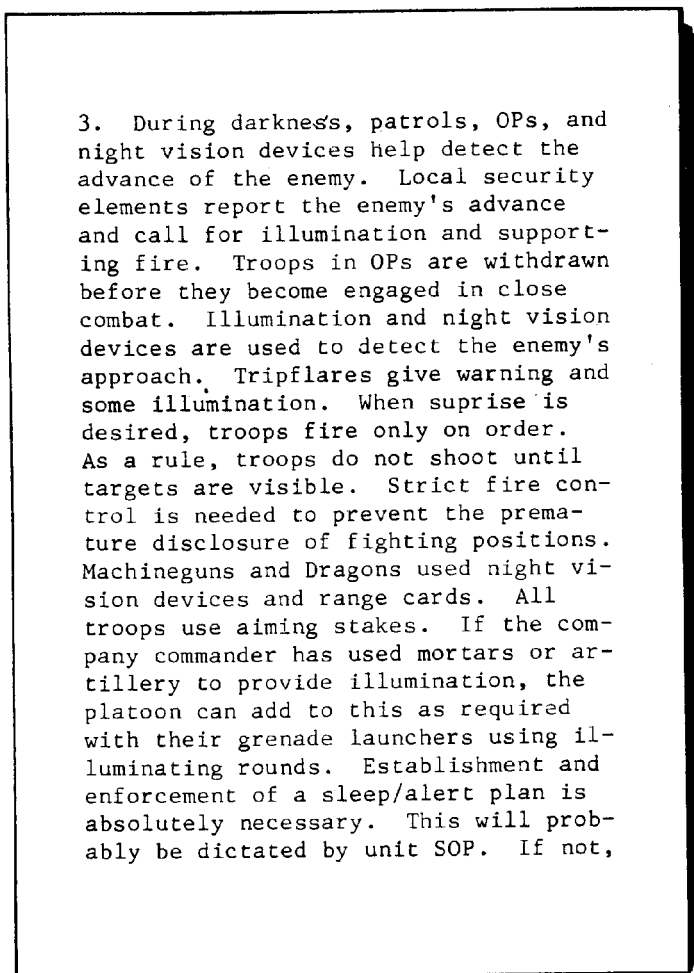
CASE STUDY

**Typewritten Text Versus Typeset Text**

*For ease of comparison, study the same passage of text on a 4 by 5 3/4 inch page with an image area measuring 3 3/16 (or 19 picas) by 4 9/16 inch deep. Notice the quantity of text each sample can accommodate. The last word appearing in the typewritten sample is highlighted in the typeset sample.*

**TYPEWRITTEN**

The following typewritten paragraph is in 10-point size, 12-pitch, single-spaced elite type. The maximum number of characters per line is 38; the maximum number of lines is 27; the maximum number of characters is 1,026.



3. During darkness, patrols, OPs, and night vision devices help detect the advance of the enemy. Local security elements report the enemy's advance and call for illumination and supporting fire. Troops in OPs are withdrawn before they become engaged in close combat. Illumination and night vision devices are used to detect the enemy's approach. Tripflares give warning and some illumination. When surprise is desired, troops fire only on order. As a rule, troops do not shoot until targets are visible. Strict fire control is needed to prevent the premature disclosure of fighting positions. Machineguns and Dragons used night vision devices and range cards. All troops use aiming stakes. If the company commander has used mortars or artillery to provide illumination, the platoon can add to this as required with their grenade launchers using illuminating rounds. Establishment and enforcement of a sleep/alert plan is absolutely necessary. This will probably be dictated by unit SOP. If not,

Figure 9.

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CASE STUDY

**Typewritten Text Versus Typeset Text**

**TYPESET**

The following typeset paragraph is in 10-point Univers Medium typeface. The average number of characters per line is 47.5. Although as many as 33 lines per page are possible, this sample is set at a recommended 30 lines (11-point leading). The maximum number of characters is 1,425 with 30 lines or 1,568 with 33 lines.

3. During darkness, patrols, OPs, and night-vision devices help detect the advance of the enemy. Local security elements report the enemy's advance and call for illumination and supporting fire. Troops in OPs are withdrawn before they become engaged in close combat. Illumination and night vision devices are used to detect the enemy's approach. Tripflares give warning and some illumination. When surprise is desired, troops fire only on order. As a rule, troops do not shoot until targets are visible. Strict fire control is needed to prevent the premature disclosure of fighting positions. Machineguns and Dragons use night vision devices and range cards. All troops use aiming stakes. If the company commander has used mortars or artillery to provide illumination, the platoon can add to this as required with their grenade launchers using illumination rounds. Establishment and enforcement of a sleep/alert plan is absolutely necessary. This will probably be dictated by unit SOP. If not, the platoon leader must establish one. The ideal plan would allow for each fighting position to be manned by at least two soldiers. In this manner, you not only help to ease the fear of being alone at night, but one soldier can be alert while the other is sleeping/resting. The PEWS has nine ground-emplanted sensors. They transmit a radio or wire signal to a receiving set. The signal indicates movement in the area, whether it is foot or vehicular, and which sensor is

Figure 10.

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### Typewritten Text Versus Typeset Text

#### TYPEWRITTEN

##### Advantage

The only advantage of using typewritten copy is that it's fast. Copy can be pasted up as it comes out of the typewriter.

##### Disadvantages

Some disadvantages of using typewritten copy are—

- Copy smears more easily when handled. The image is produced by the strike-on method; that is, the paper receives carbon impressions produced by metal characters striking a carbon ribbon and transferring the image to the paper.
- No flexibility because leading is fixed at 12 points minimum line spacing, making it impossible to get more than 27 lines in the sample image area (6 lines per vertical inch and 12 characters per lateral inch is maximum).
- Minimum versatility because all typefaces are the same size, with methods of emphasis limited to all caps, underlining, and quotation marks. In typewriter and some of the older word processing systems that

can inject bold or italic characters, the conversion procedure is cumbersome and time-consuming.

- A right-justified margin, if desired, would require tedious counting in most instances, and may result in undesirable word spacings.

#### TYPESET

##### Advantages

Some advantages of using typeset copy are given below.

- Depending on the number of lines (30 or 33), 39 to 53 percent more text (399 to 542 more characters) can be put on a page.
- A typewritten book of 200 pages would be reduced to 130 pages, using 33 lines per page, or to 144 pages, using 30 lines per page.

##### Disadvantage

The only disadvantage of using typeset copy is that it takes from slightly to moderately more time to produce the copy for pasteup.

Figure 11.

## D. ANATOMY OF TYPE

The information described here provides the essentials necessary for developing a good working knowledge of typography. But what is covered represents only the tip of the typographic iceberg. It can't possibly cover all that can be learned from a good book on typography. There are books on the market that will provide additional guidance, and some that can also double as a desk encyclopedia on the subject. Individuals should select the book or books that best meet their requirements.

1. *UNITS OF MEASURE* Inch measurements should not be used when referring to type size. Regardless of position—designer, editor, illustrator, or clerk—if working in the publication production field, they should take the time to learn the basics of type and typesetting. In so doing, they should learn more than just marginal information. For example: Editors may learn that 72 points equals one inch. But should they order some 72 point size capital letters—expecting them to be 1 inch high—they're going to be surprised when they come up short; about 5/16 inch short.

There are two primary units of measure in typography; the *pica* and the *point*. Designers usually specify vertical measurements in points, horizontal measurements in picas. Another unit of measure is the em, a term primarily used to indicate the amount of indentation existing or desired in the first line of a paragraph. The en is one-half the width of the em. Occasionally the term inch might creep into the discussion. But when it does, it invariably is in reference to artwork, photos, image areas, and similar large areas. About the only time it is used in conjunction with type is to indicate the length or depth of columns of type.

(a) *Picas* A pica measures .1656 of an inch, approximately one-sixth. There are six picas in an inch. Many typography books fail to mention the half-pica. This measurement is used frequently. Virtually every system of

<sup>3</sup> William Sydłowski, "Improve Business with Ergonomics," *Graphic Arts Monthly* (October 1983).

typesetting has the capability to provide lineal dimensions using the half-pica. Some also provide quarter-pica measurements. VISs shouldn't forget the half-pica; it will provide additional flexibility.

(b) *Points* A point measures .0138 of an inch, approximately one seventy-second of an inch. There are 72 points in an inch and 12 points equals a pica. The point can easily be one of the most useful measurements, mainly because of its smallness. Without the point, it would be extremely difficult to obtain precise measurements of type size and leading. On occasion, a VIS will need to convert existing measurements, displayed or expressed in inches, to picas or points. See the conversion chart below.

(c) *Ems* This measurement is equal to the square of any given type size. For example, when using 10-point type, an em represents a square space that measures 10 points on each of its four sides. Although a phototypesetter operator will use em spaces in a variety of ways, the VIS generally uses them to indicate the amount of paragraph indention (usually one em, seldom more than two).

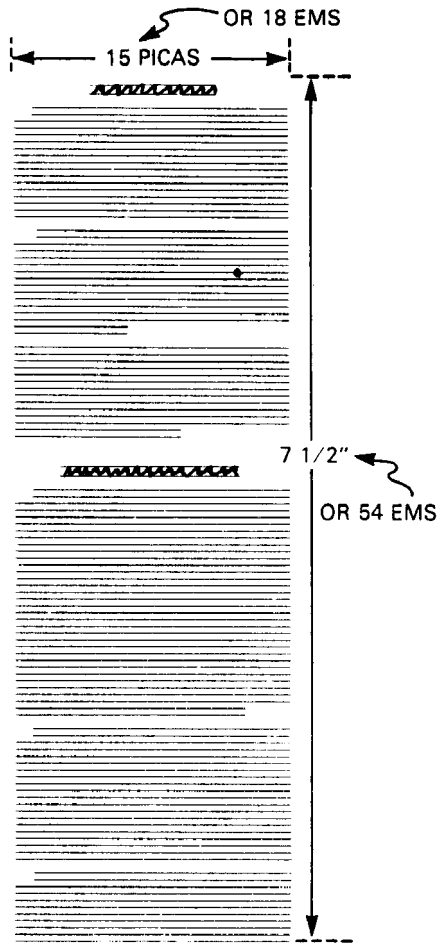
When purchasing typesetting services, some designers will find that the typographic suppliers' bills for the galleys of body copy are based on an em count of the total area covered. For example, a galley containing a single column of 10-point type set with a 15-pica line length (column width) and measuring 7 ½ inches deep would be billed based on an em count of 972. The total amount would be reached in the following way:

- (1)  $15 \text{ picas} \times 12 = 180 \text{ points}$   
 $180 \text{ points} \div 10 \text{ (type size)} = 18 \text{ ems}$
- (2)  $7 \frac{1}{2} \text{ inches} \times 72 = 540 \text{ points}$   
 $540 \text{ points} \div 10 \text{ (type size)} = 54 \text{ ems}$
- (3)  $18 \times 54 = 972 \text{ ems}$

Typesetting costs normally are based on an agreed-upon unit price, one unit being 1,000 ems. In the above example, if the unit price was set at \$17, the charge would be \$16.52 plus markup or composition charge-usually around \$5. The total charge could be figured in the following manner:

$$\$17.00 \times .972 = \$16.52 + \$5.00 = \$21.52$$

(d) *Ens* An en is a measurement equal to one-half the width of an em. When using the 10-point type example above, an en would be a space measuring 5 points wide and 10 points high.



Calculating the number of ems in a column of 10-point type. Step 1 in the text shows how the 15-pica width is converted to points and then to ems. Step 2, from inches to points to ems. And step 3 multiplies the two figures to arrive at the total number of ems.

Figure 12.

CONVERSION CHART								
INCHES	1	7/8	3/4	5/8	1/2	3/8	1/4	1/8
PICAS	6	5 1/4	4 1/2	3 3/4	3	2 1/4	1 1/2	3/4
POINTS	72	63	54	45	36	27	18	9

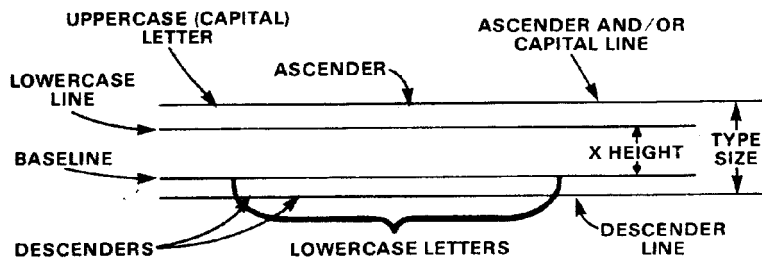
Converting inches to picas and picas to points, or any combination of the three, can be simplified by using this handy chart.

Figure 13.

### TYPE NOMENCLATURE

The size of type might not always turn out to be what might have been expected: If there are 72 points to an inch, why then is 72-point type not one inch tall? The diagram here readily shows why the height of a 72-point capital letter is appreciably smaller. The 72 points are measured from the ascender line to the descender line, whereas the capital letter's height is measured from the baseline to the capital line.

The following diagram shows the nomenclature of a word set in type. It will help to understand some of the peculiarities connected with size and explain some typographic terms.



The x height (distance between the baseline and the lowercase line) is one of the most critical dimensions when evaluating the legibility of typefaces. Different typefaces, all the same size, can appear larger or smaller depending on the x height.



What is it? Is it a C, an E, a G, or could it be a T or possibly an F?

Figure 14.

## 2. TYPE CLASSIFICATIONS

(a) Some experts estimate that approximately 2,000 to 5,000 typefaces are in use today. That's a lot of typefaces to consider when trying to make a selection. Attempting to organize a selection process, experts developed classification systems. Most of the systems start with the major divisions—serif (Roman) and sans serif (Gothic). These two divisions are further reduced to subcategories based on general and then specific use.

(b) These systems were devised primarily for designing everything from stationery to annual reports and from package labels to magazine ads. We simplified the selection process because our concerns lie solely with the design of instructional publications. Our most important type is used for body copy. As such, it must be the most legible and ergonomically adaptable typeface.

(c) Serif type is often referred to as Roman, primarily because most serif styles match the thick vertical and thin horizontal strokes of the old Roman alphabet. However, some serif typefaces have more or less uniform strokes (Stymie), and some sans serif typefaces have thick and thin strokes (Optima). The term Roman is also used to indicate an upright letter as opposed to an italic.

(d) Some typefaces cannot be classified as either serif or sans serif. Virtually all of these can be described as either script, special, or text. However, some are so decorative that they are hard to read.

## D. BODY COPY

With rare exception, the greatest portion of military publications is made up of body copy, the part of the publication that carries the message. Everything else is designed to emphasize it, augment it, or clarify it. Therefore, VISs must carefully analyze every suggestion and carefully weigh every decision regarding typography. They must be careful not to overuse reverse type, tint blocks, ornate rules, mortises, and display lettering. Excessive line lengths are out, as well as the overuse of bullets, squares, dingbats, and other similar ornaments. If the VIS doesn't take extreme care, he or she will end up designing clutter instead of a means of communication.

Much care must be taken when selecting a typeface for body copy. The typeface must be one that will help readers quickly grasp what is being said. The best typeface for the job will be one that can be easily read and, at the same time, be visually subtle enough so the reader is conscious only of the message and not the typeface.

### 1. SERIF OR SANS SERIF

(a) Virtually every legibility expert agrees that a serif body type is easier to read than a sans serif. Studies conducted on the quick recognition factors of words in all uppercase letters versus those with caps and lowercase letters resulted overwhelmingly in favor of the latter. These same studies revealed that words are recognized by their shapes; that is, their outlines. Some of the decisions favoring serif type were predicated on this observation. The conclusion was that serifs give letters more distinctive outlines than sans serif. This is difficult to ignore. Even though the scientifically measured data revealed minimal differences in the legibility of the two type classifications, the majority of readers tested (two-thirds in some cases) indicated a preference for the serif typefaces.

(b) The indicated preference for serif type for body copy does not, however, mean that sans serif is on the way out. On the contrary, sans serif provides a necessary contrast to body copy when used in graphics and cutlines. Additionally, sans serif can help when the publication requires a more modern style and legibility is not of utmost importance. In the absence of extenuating circumstances, use serif type for body copy and sans serif for graphics.

### 2. LIGHT, MEDIUM, OR BOLD

(a) Ideally, type for body copy should have a medium weight or equivalent. Boldface type causes eye fatigue rather quickly. Lightface type, on the other hand, is inadvisable because it is difficult to distinguish against the bright contrast of the paper. Boldface is good for emphasis; lightface works well in some advertising layouts; medium weight type helps instead of hinders the readability designed into a publication.

(b) For emphasis, italic type is backed by tradition. However, consider the fact that italic reduces reading speed and is weaker looking on the page. Boldface is more legible than italic but can cause eyes to tire quickly. If a publication contains very little need for emphasis, the VIS can use boldface. If emphasis is required often, he or she can use medium italic. Whichever the VIS selects, it should be consistent and used for emphasis throughout the publication.

(c) Italic or boldface type shouldn't be used in large blocks of copy if it can be avoided. Italic or boldface type may be desirable at times, such as in an introductory paragraph. However, this must be a planned, consistent use that will actually help readers. It will bring about quick recognition of a portion of text that has a different scope.

## Typefaces Approved for Use in ADTLP Publications

SERIF		SANS SERIF
Alexandria	Griffo	Alphatura
Andover	Hanover	Avant Garde
Aster	Highland	Boston
Auriga	Janson	Chelmsford
Ballardvale	Jewel	Claro
Baskerville	Laurel	Futura*
Beaumont	League Text	Galaxy
Bem*	London Roman	Geneva
Bembo*	Lubalin	Gill Sans
Bodoni	Mallard	Grotesque
Bodoni Book*	Medallion	Helios
Bookman	Melior	Helvetica
Brunswick	Memphis	Megaron
Bulmer*	Modern No 8	Musica
Cairo	Paladium	News Gothic
Caledo	Palatino	Newton
Caledonia	Patina	Optima
California	Plantin	Oracle
Cambridge Light	Pontiac	Orleans
Camelot	Primer	Spartan*
Caslon Old Face*	Regal Berlin	Suave
Caslon 540	Schoolbook	Techno*
Century Schoolbook	Scotch Roman	Toledo
Century Text	Souvenir	20th Century
Century Textbook	Sovran	Univers
Cheltenham Old Style*	Stymie	Utica*
Clarendon	Tiffany*	Vega*
Clarique	Times New Roman	Versatile
Crown*	Times Roman	Zenith
Deepdene*	Trump Mediaeval	
De Vinne	Uranus	
Edelweiss	Ventura	
Edinburg	Vladimir	
Egmont	Windsor	
Egyptian	Zapf Book	
Electra		
Elegante		
Empira*		
English		
Excella		
Fairfield		
Garamond		
Goudy Old Style		
Grenada		

Periodically, a visual information specialist will hear about, or be attracted to, a particular typeface but be unsure as to its serviceability. Checking it out or gaining approval for its use can be a time-consuming exercise. This list contains 108 typefaces (79 serif and 29 sans serif) that are approved for use in ADTLP publications. Some of the typefaces named are indigenous to just one particular phototypesetting system but are included because they are comparable to a similar face in other systems.

Names followed by an asterik (\*) are typefaces having an x height other than what is considered normal. This, in itself, should be no bar to their use. If used, the VIS should ensure that the type size and leading selected will compensate for the abnormal x height.

Figure 15.



### 3. TYPE SIZE

(a) One of the most frequently researched aspects of typography, along with line length, is the matter of ideal type size. Most researchers accept the validity of established methods for measuring legibility. The top print media designers and acknowledged experts in typography agree that body copy should be 9-, 10-, 11-, or 12-point type. These sizes provide maximum legibility. Type smaller than 9 points hampers word recognition creating an obvious reduction in comprehension. On the other hand, type larger than 12 points forces readers to slow down because the words are seen in sections instead of whole.

(b) The reading requirements for informative texts and referential texts differ. Readers can spend long periods reading informative texts. However, most readers read referential texts in small portions. In the interest of saving space, referential texts such as glossaries and indexes can be set in 8-point type and, at most, not larger than 9-point type.

(c) It sounds fairly simple to select an attractive typeface, mark it up for 10 points, and then forget it. But the VIS shouldn't forget the one factor that can make 10-point type look like 8-point type, and 8-point type look like 10-point type; the x height. The x height of a selected typeface should be checked carefully. If the requirement is for 10-point type, and the VIS selected a typeface with an x height that looks like 8 points, that 2-point difference is going to represent a loss in legibility. However, a particular typeface should not be discarded just because of a small x height. It can be used in 11- or 12-point size. For a large x height, a 9- or 10-point size can be used.

### 4. LINE LENGTH

(a) Is the proper term *line length* or *line width*? When speaking of a line of type, we refer to its lateral dimension as its length. When speaking of a column, we refer to its lateral dimension as its width. So, it's line length and *column* width.

(b) A column of type that is too narrow is just as difficult to read as one that is too wide. Experts say that short-line difficulties are caused by the eye's inability to make full use of certain signals involved with horizontal perception. That is, the eye reaches the end of one line before it's ready to return to the starting point of the next line. This has a tendency to throw the type momentarily out of focus.

(c) Readers encounter difficulty when reading overly long lines. The eye has to travel such a long distance that it has difficulty locating the beginning of the next line. To determine the ideal line lengths for text set in 9-, 10-, 11-, and 12-point type, use one of the following formulas:

1.  $1 \frac{1}{2} \times$  length of lowercase alphabet = minimum line length.
2.  $2 \times$  length of lowercase alphabet = maximum line length.
2. 39 characters per line = minimum line length.
- 52 characters per line = maximum line length.
3. 10 to 12 words per line.
4.  $1 \frac{1}{2} \times$  type point size = minimum length in picas.
2.  $2 \times$  type point size = maximum length in picas.

(d) Using 10-point Schoolbook Medium as an example, the above works out to—

1. 18 to 24 picas.
2. 17 to 22  $\frac{1}{2}$  picas.
3. 18 to 24 picas.
4. 15 to 20 picas.

(e) The first, second, and third formulas result in differences of no more than 1 pica on the minimum line length and 1  $\frac{1}{2}$  picas on the maximum length. However, all of these formulas are rules of thumb. They allow VISs to make reasonable variations to accommodate the different trim sizes and to get the greatest use out of the least paper. With this in mind, the specifications have been worked out as shown below.

### 5. LEADING

(a) The spacing between lines of type is called leading (pronounced led-ing). When working with body copy, the leading between each line in a paragraph is referred to as *primary leading*. The space between two paragraphs (that is, the space between the last line of one paragraph and the first line of the following paragraph in the same column) is known as *secondary leading*. The space between the heading and first line of text is also described as secondary leading. *Tertiary leading* is the term most often applied to the space between the last line of the last paragraph in a column unit and the heading over the unit below it.

## IDEAL LINE LENGTHS FOR ADTLP PUBLICATIONS

TYPE SIZE	MINIMUM LENGTH	MAXIMUM LENGTH
9-point	12 picas	20 picas
10-point	13 picas	27 picas
11-point	16 picas	30 picas
12-point	18 picas	32 picas

Figure 16.

### SUGGESTED LEADING FOR BODY COPY

TYPE SIZE	LEADING	COLUMN WIDTHS			
		12 TO 13 1/2 PICAS	14 TO 17 1/2 PICAS	18 TO 28 1/2 PICAS	29 TO 32 PICAS*
9-POINT TYPE	PRIMARY	SOLID OR 10 POINTS	10 POINTS	11 POINTS	
	SECONDARY	14 OR 15 POINTS	15 POINTS	16 OR 17 POINTS	
	TERTIARY	17 POINTS PLUS TYPE SIZE OF NEXT LINE	19 POINTS PLUS TYPE SIZE OF NEXT LINE	21 POINTS PLUS TYPE SIZE OF NEXT LINE	
	REMARKS	<i>Ideal minimum length is 12 picas.</i>		<i>Ideal maximum length is 20 picas.</i>	
10-POINT TYPE	PRIMARY	SOLID	11 POINTS	12 POINTS	
	SECONDARY	15 POINTS	16 POINTS	18 POINTS	
	TERTIARY	18 POINTS PLUS TYPE SIZE OF NEXT LINE	20 POINTS PLUS TYPE SIZE OF NEXT LINE	23 POINTS PLUS TYPE SIZE OF NEXT LINE	
	REMARKS	<i>Ideal minimum length is 13 picas.</i>		<i>Ideal maximum length is 27 picas.</i>	
11-POINT TYPE	PRIMARY		12 POINTS	13 POINTS	13 POINTS
	SECONDARY		18 POINTS	19 POINTS	20 POINTS
	TERTIARY		23 POINTS PLUS TYPE SIZE OF NEXT LINE	25 POINTS PLUS TYPE SIZE OF NEXT LINE	26 POINTS PLUS TYPE SIZE OF NEXT LINE
	REMARKS		<i>Ideal minimum length is 16 picas.</i>		<i>Ideal maximum length is 30 picas.</i>
12-POINT TYPE	PRIMARY			13 POINTS	14 POINTS
	SECONDARY			20 POINTS	21 POINTS
	TERTIARY			26 POINTS PLUS TYPE SIZE OF NEXT LINE	27 POINTS PLUS TYPE SIZE OF NEXT LINE
	REMARKS			<i>Ideal minimum length is 18 picas.</i>	<i>Ideal maximum length is 32 picas.</i>

*\*Isolated lines of 11-point type longer than 32 picas should have 14 points primary and 21 points secondary leading, and 12-point type should have 15 points primary and 22 or 23 points secondary leading.*

Figure 17.

(b) The size of the primary leading establishes the basis for determining the size of the secondary and tertiary leadings. The initial problem then is to work out the requirements for the primary leading. To arrive at an acceptable conclusion, consider type size and line length. If the x height of the selected typeface is abnormal, it should also be a factor.

(c) Secondary and tertiary leading specifications require as much thought as that given to primary leading. Some VISs are convinced they require even more. They believe the strategic use of white space, as applied to type, becomes more critical in areas relative to these two leading categories.

(d) It is the judicious use of secondary leading that makes a series of paragraphs on a page appear as a column of type; a column that helps to maintain a smooth, unbroken continuity of thought. A workable rule-of-thumb for determining the point size of secondary leading is 1 ½ times the primary leading. For example, if the primary leading is 12 points, secondary leading of 18 points works extremely well.

(e) The chart shown above displays the four type sizes used for body copy in ADTLP publications. It also shows four sections presenting column widths ranging from the 12-pica minimum to the 32-pica maximum line lengths. The first column width section (12 to 13 ½ picas) indicates that primary leading for 9- and 10-point type can be set solid—no leading added. The ascenders and descenders will not touch, as type has a “built in” leading to prevent it. Adding leading usually generates an increase in reading speed, but it can have an adverse effect when the line length is too short. The remaining three column-width sections start out with a 1-point increase in leading and continue to increase as the column width or line length grows longer.

**NOTE: This is one of the many instances where a VIS must let his or her best judgment rule. The designer of this publication felt that the typeface used (Schoolbook) was not sufficiently readable when set solid on a 13-pica line. Therefore, he specified 9-point type on 10-point leading instead of 9 on 9.**

(f) Some magazines and newspapers have adopted a technique that does away with secondary leading. They use the same amount of spacing between lines and between paragraphs. This decreases readability and makes it imperative that all paragraphs be indented. If not, the division between paragraphs can be difficult to spot and reading speed is affected. One of the main reasons for adopting this technique (of no secondary leading) is that it eliminates some of the trauma caused by quick copy changes, additions, and deletions. To be completely workable, however, this technique requires the use of multiples of the primary leading. For example, if the primary leading is 11-points, all other spacing must be in increments of 11 points. An additional help would be to adjust the depth of any graphics used also in 11-point increments.

(g) Using multiples of primary leading makes it easier to make the required changes and still keep everything (lines of text, head, and subheads) aligned. However, this technique should not be used unless the VIS is prepared to go all the way with it as necessary. Otherwise, the elimination of the secondary leading between paragraphs might not be worth the reduction in legibility and reading speed.

6. *INDENTIONS* VISs familiar with reading speed tests know that a one- or two-em indent in the first line of each paragraph helps increase reading speed. However, if the format is not indented, secondary and tertiary leadings must be used to offset the loss of quick paragraph recognition afforded by an indent. One instance when most VISs will choose to go without an indent is when ragged-right composition is used with a short line length. The result is more aesthetically satisfying; the left margin remains unbroken in contrast to the ragged right margin.

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## FACTORS CONTRIBUTING TO LEGIBILITY AND READABILITY OF TEXT MATTER

- **Width of individual letters.**  
Condensed type increases reading difficulty. Alphabets with letters slightly extended increase legibility.
- **Space around individual letters.**  
White space in and around letters with similar shapes, such as *c*, *e*, and *o*, increases readability. However, too much white space can be detrimental.
- **Design of individual letters.**  
Serif typefaces are easier to identify than sans serif. Legibility of fine strokes is reduced in lightface type. Medium weight is better as a rule.
- **Size of type.**  
Most legible type sizes are 9, 10, 11, and 12 points in most typefaces. Abnormal x heights require special consideration.
- **Line length.**  
Lines that are too short or too long for the selected type size, cause reading difficulties.
- **Leading.**  
Primary leading is based on type size, type weight, line length, and x height. Secondary and tertiary leadings are based on the primary leading. Primary and secondary leadings must be consistent. Tertiary leading should be in like instances.

Figure 18.

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7. *MARGINS* Is a ragged-right margin more acceptable to readers than a justified margin? Is justified text more effective than ragged-right? No clear cut answer exists. Researchers do not favor one approach over the other in any significant way. Also, readability does not differ. Studies revealed that neither comprehension nor reading speeds showed any appreciable differences. Reader preference was also inconclusive. One study, however, revealed that poor readers experienced considerable difficulty in reading justified text.<sup>4</sup> However, good readers were not affected.

VISs should use the style that best suits their purpose. If the VIS is looking for the traditional military approach—tight, blocked, and squared-off—justified text is the answer. However, if a less formal look with a loose or open feeling is the goal, explore the possibility of using ragged right.

(a) *Justified* Justified text is text set in the traditional blocked manner so predominant in newspapers and military publications. By definition, it is the spacing out of typeset lines in a column of type so that they align at both left and right margins.

(b) *Ragged Right* In ragged-right composition—also known as unjustified columns—the typeset lines are set in a flush-left arrangement. A standardized word spacing is used (prevents excessive letter and word spacing on some line lengths), with no attempt made to create an even right margin. The lines end up in varied lengths. This forms a ragged or uneven effect on the right side of the text. Proponents of ragged-right present some good points for consideration:

- Lower production costs.
- No difference in the amount of printing space (paper) required.
- Less cost for corrections.
- Less hyphenation.

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<sup>4</sup> M. Gregory and E. C. Poulton, "Even Verses Uneven Right Margins and the Rate of Comprehension in Reading," *Ergonomics* 13 (1970): 427-434.

- Uniform word spacing.

### 8. LAUNDRY LISTS

(a) When laundry lists appear as part of the text, they are treated exactly the same throughout the publication. This includes typeface, style and weight, size, line length, use of caps and lowercase letters, and ornaments. When laundry lists are framed, boxed, or paneled in any manner, they become a display item—a graphic. As such, they should be treated the same as all other graphics in the publication.

(b) VISs should take care not to overemphasize laundry lists. They should consider that the very nature of a laundry list—bullets, shorter line lengths, additional white space—all combine to add emphasis. In most instances, nothing more needs to be done.

(c) However, VISs must remember to present important information in a manner that will aid retention. The list might warrant presentation as a graphic. If so, the VIS should have the editor supply a lead-in line or paragraph. If the degree of importance is in question, it can be discussed with the editor.

(d) Ornaments such as bullets, squares, boxes, circles, and so forth are decorative typographic devices. In ADTLP publications, use of anything more decorative than a bullet is usually unnecessary. The bullet should be no larger than 6 points, and preferably 4 points. When a square is more suited to a particular style or format, the VIS should use it. But make sure it is a square and not a box. A box is open, leaving a place for someone to put a check mark or an X. That's why it is often referred to as a ballot box. They are made to order for check lists, but not laundry lists.

(e) Bullets and squares are not normally mixed in the same list. Ornamentation should be consistent throughout the publication. A well-planned publication should not have laundry lists within laundry lists. However, if this problem is unavoidable, the VIS can use large and small bullets or squares. The smaller bullet should be half the size of the original or larger one (6 points and 3 points or 4 points and 2 points).

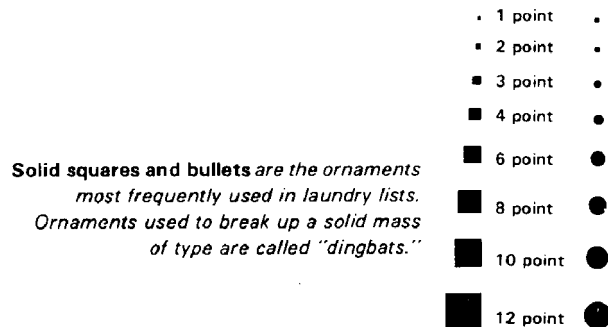


Figure 19.

### 9. WARNINGS, CAUTIONS, AND NOTES

(a) Notes are frequently buried in the body of the text. However, warnings and cautions must be more noticeably displayed. Warnings are used to indicate conditions that might be dangerous to life, limb, or health. Cautions are indicators of conditions dangerous to equipment. Notes normally carry general information that is not of a threatening nature.

(b) These three items should be given visual prominence in line with the seriousness of their nature: warnings outstandingly visible, cautions less visible than warnings, and notes the least visible of the three.

(c) Regardless of the method used to give prominence to these items, all must be consistent throughout the publication. And the methods should be sufficiently different so that readers can tell which is which at a glance.

### 10. FOOTNOTES

(a) Footnotes are further explanations or details related to a statement or item appearing in the text or in graphics. When footnotes pertain to graphics, they are placed at the bottom of the graphic (not the page) and normally enclosed within the graphic's border, if there is one. In graphics, it is not necessary to place a solid horizontal line above the footnotes as is done with textual footnotes.

(b) Footnotes should be set in the same typeface as the host material. When using footnotes—

- Use 6-point type size.

- Use upper and lowercase letters—do not set in all caps.
- Do not use symbols, such as the percent sign or number sign, that have other meanings.

## E. HEADS AND SUB HEADS

Derivations of the journalistic terms *headlines* and *subheadlines*, heads and subheads play an important role in organizing the presentation of material. VISs must select typefaces and type sizes for heads and subheads based on how they relate to the various subdivisions of the publication being designed. Readers become confused if they do not quickly recognize portions of the text as being subordinate or equal to the preceding or subsequent copy.

A well-organized presentation of the material allows readers to absorb information easily. If the material is presented in a logical sequence and visually aided by properly planned heads and subheads, the thought processes of readers will not be disrupted.

### 1. PLACEMENT

(a) The VIS must work out a plan for the heads and subheads. The plan must be specific in its identification of the typeface, size, weight, capitalization, and location of every level of head and subhead used. Consistency throughout the publication is difficult to achieve without such a plan.

(b) When readers study publications with well-planned typographic formats, they are exposed to a subtle method of information transfer. They establish a quick association between the heading or subheading and its relationship to the rest of the book. Consistency in the use of heads and subheads supports the organization. A lack of consistency in this respect greatly impairs comprehension of the organization.

### 2. DIVISION

(a) When a heading or caption is too long for its intended position, divide it into two or more lines. For example, if a 22-pica-long subhead is to go over an 18-pica-wide column, break the head at a logical point—phase, connective, or the like—and then center (or flush left, if appropriate) each line over the column.

(b) Some VISs can let their phototypesetter operators decide where to break headings. The operators make such decisions because they are knowledgeable about the requirements. However, an uninformed operator might set the headings in the same manner as the body copy. That is, the type is set to the limits of the column width (18 picas in an 18-pica-wide column) and then return to a flush left starting position for the second line and remainder of the copy. When this happens, it is not unusual to find the second line containing only one word or part of a word. This is unacceptable when a heading consists of four or more average length words.

(c) The principal rules when setting type for headings, titles, and captions are as follows:

- Do not hyphenate.
- Break lines on the basis of cohesive word groupings as well as length.
- Do not use a lowercase s in a title or heading that is otherwise entirely uppercased.
- Do not use a pluralized acronym. Write it out.

### 3. NUMBERING

(a) No requirement exists to number the paragraphs in ADTLP publications. To number or not to number is a decision left up to each preparing agency. However, that decision should not be based on habit: “We do all our books this way.” The decision should be based solely on user needs.

(b) The editor will have organized the publication logically. An experienced VIS can enhance the organization and display subordination by using properly planned typography. Adding numbers to paragraphs when they are not needed serves only to harm the smooth flow of information. However, if the publication is one that really needs the paragraphs numbered in order to fulfill the user’s needs, then the VIS should develop a numbered paragraph format.

## F. TEXT FOR GRAPHICS

Everyone concerned—writer, editor, and designer—takes a great deal of care to ensure the integrity of body copy. Nothing should break the flow of the text. When other textual elements such as special segments or word graphics are included, designers should ensure they are treated differently from the regular text to keep readers from getting confused. That is one of the reasons why designers must use a different type style for graphics than for body copy.

### 1. CUTLINES

(a) Cutlines are the text in graphics, including photographs. Except for rare instances, the typeface used in graphics should be sans serif. The size of type for most cutlines can range from a minimum of 7 points to a maximum of 10, depending on the size of text in the main body of the publication.

(b) The experts recommend 8 points as the maximum regardless of the size of the main text. Occasions when VISs would have to use anything larger than the 8-point maximum size recommended are few. In any event, the size, weight, and style of type must remain consistent throughout the publication.

(c) The font the VIS selects for tables and charts does not have to be the same as that selected for illustrations, photos, and scenarios. The VIS might elect to take advantage of the space-saving features of the condensed version of

the selected typeface, when planning tables and charts, and ignore its use for the other graphics. Again, the key is consistency. All similar purpose graphics must contain similar typography.

## 2. CAPTIONS AND SUBCAPTIONS

(a) The title or heading for a graphic is called a *caption*. Captions are explanatory comments, and should not be confused with the heads and subheads displayed in the main body of the publication. Normally, captions are centered at the top of graphics or at the bottom when figures are numbered. However, if you can make a good design better by putting the caption and any accompanying cutlines on either side of the graphic you may do so throughout the book. If you place them at the bottom or on the side, also try to be consistent.

(b) Situations do exist in which caption positions and cutlines can and should change from left to right. One such situation occurs when the book is formatted to treat left-hand pages differently than right-hand pages.

(c) When selecting type for graphics, VISs have to decide what sizes of type to use for words other than those in captions and cutlines. Column headings in tables and charts are examples. Remember graphics follow the same rules of subordination of headings that apply to body copy. Think of the caption as being the main heading of the graphic. Therefore, all remaining type—subcaptions, call-outs, and cutlines—must be visually subordinate to it.

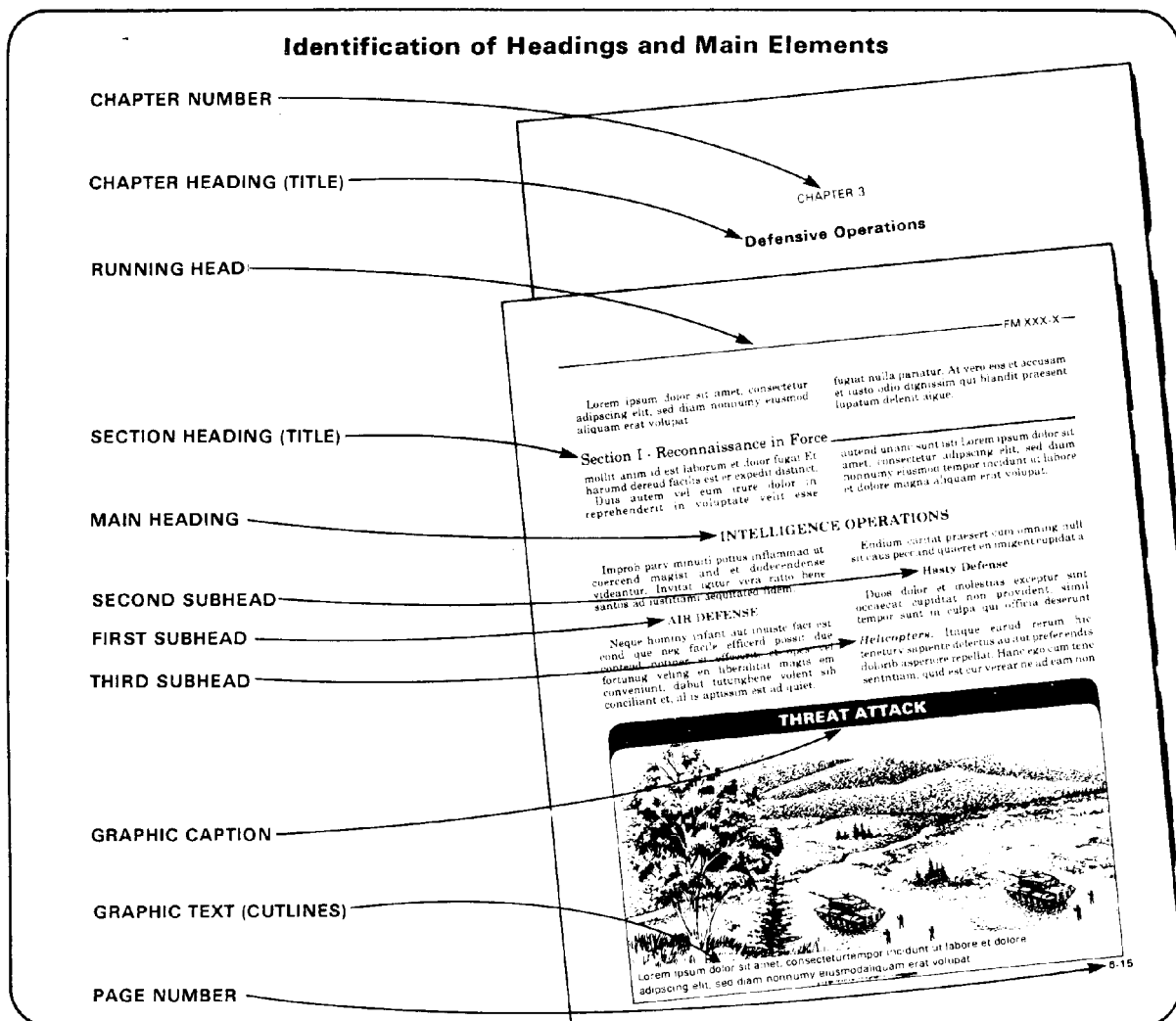


Figure 20.





## G. COVER TYPOGRAPHY

1. Rules for subordination of titles and subtitles on covers of ADTLP publications are the same as those for captions and subcaptions in graphics and for headings and subheadings in the main body. Many Army manuals have long titles. However, emphasizing the entire title is not always necessary. Some titles can be broken into several levels of prominence. For example, the title *Communications-Electronics Fundamentals: Basic Principles of Alternating Current* can be easily separated into two levels—the most prominent being *Basic Principles of Alternating Current*.

2. When unsure as to what wording should be given prominence, the VIS should consult the editor. In fact, the editor and VIS should be in accord on every decision regarding subordination or prominence.

3. Use either serif or sans serif or both on the cover, providing they have been used in the main body of the publication. Also, the exact typeface used in the publication does not necessarily have to be used on the cover but should be comparable. For example, if you use Cheltenham Bold Extended for headings in the main text, Cheltenham Bold Open on the cover would be acceptable. Like wise, in the case of Caslon Old Face in the text, Caslon Openface or Caslon Shaded would work well on the cover.

4. Do not enlarge everything on the cover. Standard lines like “Headquarters, Department of the Army,” and the date of issue do not warrant prominence. neither do standard inserts like distribution statements. This type of information appears on the cover because regulations say it must. These lines and statements contribute nothing to identifying contents for readers. In fact, type for distribution restriction statements should not be larger than 10 points and preferably 8 or 9 points.



Examples of existing publication covers with long or multiple titles that are broken into various levels of prominence.

Figure 22.

## H. TYPE MARKUP

1. How do VISs communicate their requirements for typesetting to phototypesetter operators? How do operators know what typefaces, type styles, weights, and sizes to use? The process the VISs use is known as *specing* (a short term for specifying) type. It is also known as *guidelining*, *manuscript markup*, and *type markup*.

2. Do not confuse type markup with copy editing. Although many type markup and proofreaders' marks are virtually identical to editorial marks, their use is entirely different. Editorial marks are used to change wording, punctuation, and spelling and to alter or correct a host of other traditional editorial concerns. They are used primarily during the editing process on double-spaced typewritten draft manuscripts.

3. Proofreaders' marks are used to correct typographical errors and direct typographical changes. The key word is *typographical*, which immediately tells you that the product is typeset.

4. VISs must be able to specify typographic instructions quickly and accurately for all components of publications. Although some methods of organizing the process are better than others, no one method is best for everyone. Some methods that have proved successful are described on page 2-26, and in appendix B.

**Proofreaders' Marks**

Meaning	Mark	Usage	Desired Result
Boldface type	<i>bf</i>	Publication <u>Design</u>	Publication Design
Lightface type	<i>lf</i>	Publication ( <u>Design</u> )	Publication Design
Italics	<i>ital</i>	<u>Publication</u> Design	<i>Publication</i> Design
Roman type	<i>rom</i>	Publication ( <u>Design</u> )	Publication Design
Capitalize	<u>caps</u>	<u>Publication</u> Design	PUBLICATION Design
Lowercase letters	<i>lc</i>	Publication <del>DESIGN</del>	Publication Design
Caps and lowercase letters	<i>c + lc</i>	<u>publication</u> <u>design</u>	Publication Design
Large caps and small caps	<i>c + sc</i>	<u>publication</u> <u>design</u>	PUBLICATION DESIGN
Period	0	Publication Design <sub>^</sub>	Publication Design.
Comma	/	Publication Design <sub>^</sub>	Publication Design,
Colon	:/	Publication Design <sub>^</sub>	Publication Design:
Semicolon	;/	Publication Design <sub>^</sub>	Publication Design;
Apostrophe	∨	Publication Designer <sup>∨</sup> s	Publication Designer's
Hyphen	-/	Publication Designer <sub>^</sub> of the <sub>^</sub>	Publication Designer- of-the
Question mark	?	Publication Design <sub>^</sub>	Publication Design?
One-em dash	$\frac{1}{m}$	Publication Design <sub>^</sub> the	Publication Design—the
Two-em dash	$\frac{2}{m}$	Publication Design <sub>^</sub> the	Publication Design—the
Open quote marks	∨∨	<sup>∨</sup> Publication Design"	"Publication Design"
Close quote marks	∨∨	"Publication Design <sup>∨</sup>	"Publication Design"
Parentheses	(/)	Publication <sub>^</sub> Design <sub>^</sub>	Publication (Design)
Insert superior character (number)	∨3/	Publication <sup>∨</sup> Design	Publication <sup>3</sup> Design
Insert inferior character (number)	∧2	Publication on H <sub>∧</sub> O	Publication on H <sub>2</sub> O
Equalize spaces	<i>eq</i> #	Publication <sub>^</sub> on H <sub>2</sub> O	Publication on H <sub>2</sub> O
Insert space	#	Publication <sub>^</sub> Design	Publication Design

Figure 23.

Proofreaders' Marks			
Meaning	Mark	Usage	Desired Result
Close up space	○	Publicat <sup>o</sup> ion Design	Publication Design
Less space	∪	Publicat <sub>∪</sub> ion Design	Publication Design
Flush left	<i>fl L</i>	Publication Design	Publication Design
Move left	☐	☐ Publication Design	Publication Design
Flush right	<i>fl R</i>	Publication Design	Publication Design
Move right	☐	Publication Design☐	Publication Design
Center copy	☐☐	Publicat <sub>☐☐</sub> ion Design	Publication Design
Indent 1 em	☐	☐ Publication Design	Publication Design
Indent (number of ems)	☐2	☐2 Publication Design	Publication Design
Make paragraph	¶	¶ Publication Design	Publication Design
No paragraph - run in	<i>no ¶</i>	Publication Design <sub>At the</sub>	Publication Design At the
Flush paragraph - no indent	<i>fl ¶</i>	Publication Design <sup>^</sup>	Publication Design
Align horizontally	══	Publicat <sub>══</sub> ion Design	Publication Design
Align vertically		Publication Design	Publication Design
Push letter down	⊥	Publicat <sup>⊥</sup> ion Design	Publication Design
Transpose	<i>tr</i>	Publicat <sub>tr</sub> ion Design	Publication Design
Spell out	Ⓢ	Publicat <sub>Ⓢ</sub> ion Design	Publication Design
Take out - delete	∂	Publicat <sub>∂</sub> ion Design	Publication Design
Insert here	^	Publication Design <sup>^</sup>	Publication Design:
Let it stand	<i>stet</i>	Publicat <sub>stet</sub> ion Design	Publication Design
Verify	(?)	(Publication) Design	(word or phrase checked for spelling and accuracy)
Wrong font	<i>wf</i>	Publicat <sub>wf</sub> ion Design	Publication Design
Defective letter	X	Publicat <sub>X</sub> ion Design	Publication Design
Omitted-see copy	<i>out/see copy</i>	Publication <sup>^</sup>	Publication Design

Figure 24.

### Sample Type Markup Method

The editor provides the VIS with an outline of each chapter, listing every heading and subheading in the chapter. The headings in the outline must duplicate exactly the headings in the manuscript. Having already decided on the format for body copy (typeface, weight, size, line length), the VIS is now ready to plan the specifications for the heads, subheads, and other elements of display type.

a. The VIS assigns a letter of the alphabet to each level of subordination (in descending order) as indicated on the outline. The VIS assigns the same letter to all equal headings; for example, on the sample shown here, the letter C has been assigned to all the main heads, the letter D to all the first subheads, and the letter E to all second subheads. The same letter-level combination is carried out for all the other chapters in the publication to ensure consistency in heads and subheads.

b. Next, the VIS assigns the basic typesetting specifications to each of the letter-level combinations. These specifications need be no more than the typeface code number, size, font (weight), and location. They are indicated only once for each letter, as shown on the sample. Although it is necessary to write the letters on the outlines for each chapter, the VIS does not need to repeat the type specifications.

c. Having assigned key letters and established the basic specifications, the VIS then prepares instructions to the phototypesetter operator. This information can be provided on an informal coding sheet, like the one shown here. The instructions can be as simple as showing each letter with its typesetting specifications, to include line length and leading. Or, it can be as formal as a copy of the type specifications chart on page 2-22, which could also be expanded by adding a column on the left with the code letters. The VIS might add other elements, such as laundry lists, at the bottom.

d. Once the specification sheets are completed, the VIS starts marking up the final manuscript. In doing so, the VIS appraises each page, reading every word, using the letter codes where applicable, using proofreaders' marks when appropriate, and inscribing instructions when not covered by any of these methods.

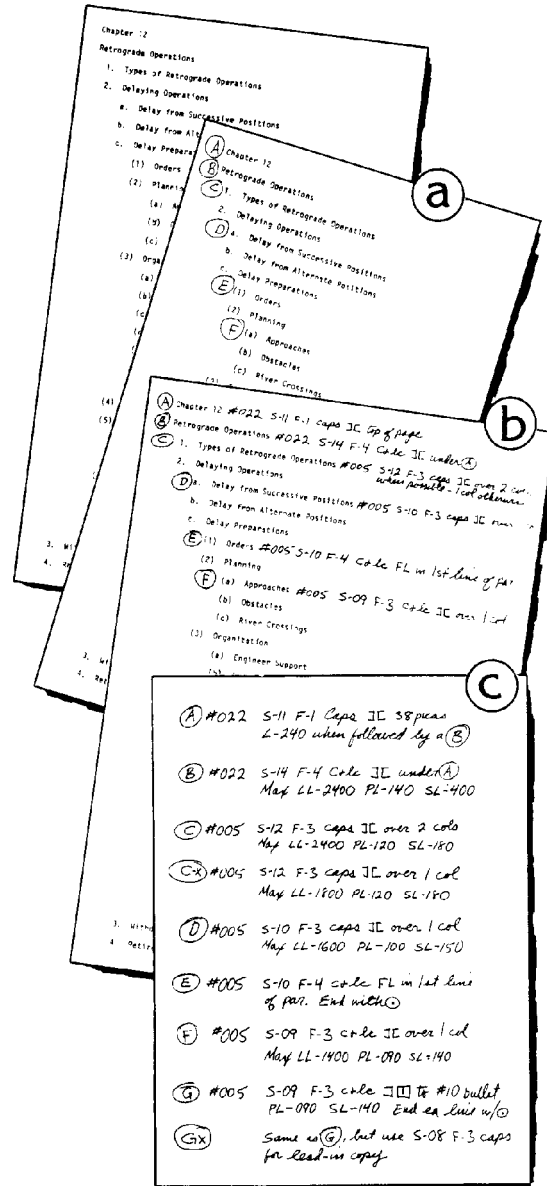


Figure 25.

5. When preparing type specification sheets and marking the manuscript, the VIS should find out who the phototypesetter operator will be, if appropriate. The methods the VIS uses to communicate requirements to in-house operators and operators who work for other organizations or contractors can be vastly different. Use familiar coding for in-house operators; spell it out for others. The adjoining chart shows the abbreviated codes that may be familiar to in-house operators and the same information that must be spelled out when dealing with outside operators.

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<b>INSTRUCTIONS FOR A COLUMN OF BODY COPY</b>		
<b>Item</b>	<b>For In-House Operators*</b>	<b>For Outside Operators</b>
<b>Typeface</b>	005	Schoolbook
<b>Type size</b>	S-09	9 point
<b>Style or weight</b>	F-1	Medium
<b>Line length</b>	LL-1600	Line length: 16 picas
<b>Primary leading</b>	PL-100	Primary leading: 10 points
<b>Secondary leading</b>	SL-150	Secondary leading: 15 points

\*Sample shown is for an AM system

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Figure 26.

### Section III Graphics

If a formula could be devised that would reveal comprehensibility levels in the same manner that reading grade levels are determined, we could then offer clinical proof regarding the value of graphics. For example, we could start with a manuscript that was written at a 12th grade reading level and, by incorporating properly designed graphics, conceivably lower the comprehensibility level to ninth grade.

Frequently, we see examples of how graphics aid comprehensibility—and how they do it rather quickly. A good example is the editorial cartoon in your daily newspaper. A newspaper editor can write a long editorial extolling the virtues of a favored political candidate. However, an editorial cartoonist with an opposing viewpoint can graphically devastate the very same candidate. The writer's words can include line after line of eloquent phrases and flattering descriptions. But the cartoonist can make an impression in a fraction of the time it takes to read the editorial. And the visual impression will remain in the readers' minds long after the eloquent wording has faded.

There is a place and a time for words, and a place and a time for using graphics. The place for graphics is definitely in instructional publications, and the time is when you want to—

- Clarify the information.
- Make the information easy to absorb.
- Help the reader retain the information longer.
- Trigger instant recall of important information.

Not all graphics are illustrations, but technically all illustrations are graphics. Illustrations could probably be referred to

as pictorial graphics. Even photographs fit into this category. When used in ADTLP publications, graphics include drawings, photographs, maps, charts, tables, graphs, diagrams; just about anything other than text. The importance of having only graphics that relate entirely and directly to the subject matter is addressed in AR 310-3.

## A. DETERMINING NEED

Artwork is expensive. It is costly in both time and effort. If for no other reason than the economics of the matter, preparing agencies must review all proposed graphics for essentiality and functionality prior to preparation of costly artwork. This is but one of the many advantages of producing a comprehensive (comp) dummy—a means by which this and many other checks can be made.

The designer of the publication, the VIS, produces the comp dummy. He or she makes the decisions as to what graphics should be developed, where they are to be located, and how they are to be used. Consequently, the VIS must remain ever mindful of essentiality and functionality factors. But what are those factors? What should VISs think about and look for when they plan graphics and review proposed or finished art?

1. *IS THE GRAPHIC ESSENTIAL?* An essential graphic performs a necessary service. One reason for including a graphic with a particular passage is to further clarify the passage. To determine if a graphic is essential, the VIS should ask—

- Will the graphic being planned contribute to a clearer understanding of the subject matter?
- Will reader comprehension be impaired if the graphic is removed?
- Will the graphic permit a substantial reduction in the narrative portion of the text?

If the answer to any of the above questions is “yes,” the graphic is essential.

### 2. *IS THE GRAPHIC FUNCTIONAL?*

(a) Although all essential graphics must be functional, a graphic can be functional without being essential. Lack of essentiality in itself is not sufficient reason to discard a graphic. If the graphic performs a beneficial service, such as enlarging upon or adding another dimension to the text, use it. It is functional if it augments the text by contributing additional relevant information to benefit readers.

(b) Graphics can emphasize important points. Pictorial graphics (illustrations or photographs) aid retention. Additionally, a well-planned graphic can serve as a memory jogger; that is, it can help readers recall information.

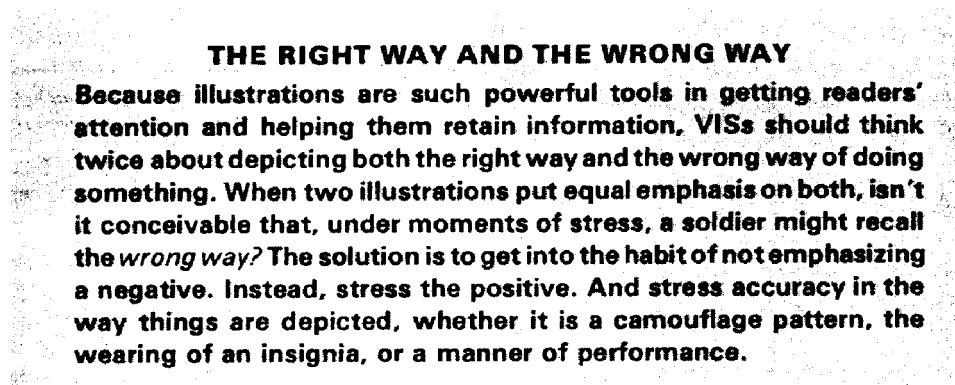


Figure 27.

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3. *IS THE GRAPHIC SELF-EXPLANATORY?* Functional graphics should be easily understood by readers. Readers should not have to look elsewhere for an explanation. That is why VISs should not use montages, mural-type illustrations, or graphics that lean heavily on symbolism. In virtually every instance, the only person who can fully and accurately interpret a symbolic piece is the originator. Good graphics help readers understand what is being communicated. The more functional the graphic, the quicker readers comprehend.



An excellent example of a well-planned memory jogger—a graphic that will help bring about instant recall of information when needed. Anyone seeing this illustration will forever recall that batteries should be stored in a warm place as opposed to a cold location.

Figure 28.

#### 4. *IS THE GRAPHIC COSMETIC?*

(a) Illustrations used solely to attract attention or enhance the publication have no business in military instructional publications. Decoration and attention-grabbing graphics are not functional. They do not justify the extra time and money it takes to produce them. In fact, artwork produced for these reasons often detracts from the text by breaking the continuity, which is detrimental to learning. VISs must recognize that illustrations are not selective; all illustrations attract attention regardless of whether or not they are functional. Illustrations that depict operations or objects of common knowledge and have no informational significance are cosmetic. For example, a drawing of a claw hammer, regardless of how well executed, has no instructional value in a book for professional carpenters.

(b) Some books are planned with an illustration on the first page of every chapter. This might, at first, give the appearance of being cosmetic. But if the illustrations depict the main subject or thought of each chapter, they perform a function—they set the mood.

(c) Mood-setting illustrations are not needed, and should not continue further than the first page of their chapters. When they do, they are no longer functional.

#### **B. ENSURING QUALITY AND PROPRIETY**

Considering that the VIS has creative control of the publication and directs the efforts of the illustrators, how can a publication with amateur artwork surface? Amateur artwork dilutes the contributions of all who participate in a book's development. For example, a publication can be meticulously researched, expertly written, scrupulously edited, and outstandingly designed and lose credibility because the artwork does not meet professional standards. People tend to believe what they see rather than what they're told. If local illustrators cannot produce quality artwork, an attempt should be made to "borrow" competent illustrators from another activity.



The quality of cartoons is especially critical. AR 310-3 says, “When cartoons are used, they must be expertly handled, of outstanding quality in design, and pointedly functional.”

The similarity of style and technique of the artwork will also reflect on the publication’s credibility. Just as each chapter should appear to be written by the same author, so should each illustration appear to be produced by the same illustrator.

### *1. QUALITY*

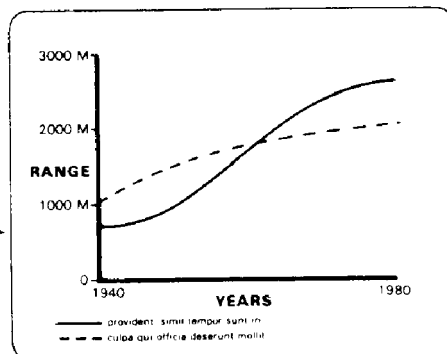
(a) Many visual information specialists enter into publication design directly from the world of audiovisual media. It is expected that these professionals are just as proficient in their area of expertise (presentations) as the VISs (printed material) are in theirs. However, without proper preparation, to include reorientation, the rapid transition from audiovisual presentations to print media can lead to big problems. Much of what is learned in years of producing audiovisual presentations and projects is in direct opposition to the philosophy and requirements of print media. The two can be literally worlds apart.

(b) In audiovisual media, visuals are the primary means of communication. The audio portion, the accompanying narrative, supports the visuals and is secondary to them. In print media, the opposite is true. Here the text becomes the primary means of communicating the message, and visuals clarify, augment, or emphasize the text. In audiovisual presentations, the length of time the visuals are exposed to the audience, especially in electronic presentations, is extremely short. On the other hand, readers of instructional publications may spend hours studying the graphics.

(c) This difference presents another factor for consideration. As shown in the samples here, graphics planned for audiovisual presentations require only enough detail to create a visual impression. But those prepared for print media need enough detail to stand up under close, intensive scrutiny.

(d) Another important difference between the two specialties is that graphics in doctrinal and training publications must be self-explanatory. VISs who plan or design visuals for briefings however, do not have to make them as precise because the briefer will explain the details. This is not the case in the design of instructional publications, where there is no room for uncertainty or error.

This briefing style graphic is suitable for most audiovisual presentations. However, it lacks the detail needed for a graphic in an instructional publication.



This print media style graphic is the type required for most instructional publications. It is self-explanatory in every respect, starting with a caption that immediately identifies the subject matter. It is prepared in a way that permits detailed study. It can answer such questions as: At what exact point in time and space did the solid line cross over the dashed line? When did the solid line start its upward surge? When did the dashed line start levelling out—permitting the solid line to catch up and surpass it? The graphic also provides information that, in some instances, augments what is stated in the accompanying text.

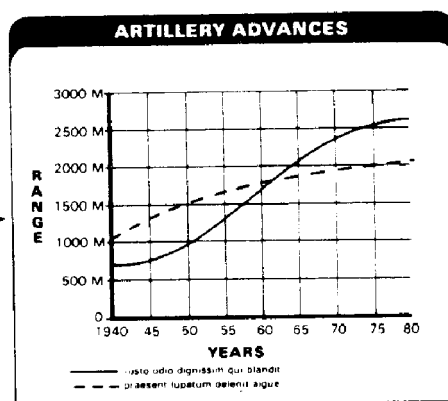


Figure 29.

## 2. PROPRIETY

(a) Illustrations must meet the requirements of propriety and good taste. They must not contain material that is controversial or frivolous.

(b) They must not, in any way, discredit the Army or have an unfavorable impact on troops or the public. Also, AR 310-3 states that illustrations must not, either by gross caricature or innuendo, contradict or compromise Army policies regarding sex, race, religion, national origin, color, or age.

## C. DETERMINING PLACEMENT AND SIZE

Once the decision is made to use graphics in a publication, the VIS will determine the size of the graphics and where to place them.

1. **PLACEMENT** Determining the placement of a graphic in the publication usually is no problem; it goes with the text to which it pertains. When this is not possible, place the graphic on a facing page. *Do not place graphics any further away from their initial introductions than the facing page.* Doing so can cause readers to lose their concentration when they turn the pages to search for a referenced graphic. It can be just as disconcerting as sitting in on a lecture and having a slide appear on the screen covering a subject that was discussed earlier. If the material to be illustrated exceeds the capacity of the facing page, or the facing page is not available, a foldout may be justified. However, experienced VISs will go back to the drawing board and try to replan rather than take the expensive foldout route. A foldout may be only the easy way and not the best way to solve the problem.

### 2. SIZE

(a) Common sense is still the best way to determine how large or small a graphic should be. Of course, the amount of text on the page will determine the space available for the graphic. Problems arise when the space for a planned

graphic gets altered by later changes to the text. If the text is cut, the space grows larger. If the text is increased, the space shrinks.

(b) Most of the time, size changes, up or down, will be minimal—creating few problems. However, this is not to imply that an illustration can go from a quarter of a page to a full page without creating problems. Common sense must prevail; for example, a conscientious VIS would not use half a page to display an exact size drawing of a paper clip.

(c) Similar logic is used to determine how small a space to use for a graphic. If it must be reduced to a size that can cause problems with legibility, the situation is studied. Is the graphic really essential to the mission? If not, solve the problem by eliminating it. However, if the graphic is essential to the mission and must remain, it should be made large enough to be both legible and comprehensible. In doing so, the VIS may have to resort to a foldout or a redesign of several pages. Whatever it takes, do it.

## **Section IV**

### **Color**

Countless surveys, research projects, and investigations have been conducted to determine the advantages of using color. Some say that color is a powerful persuader and the right colors can promote attention, stimulate interest, create desire, and generate positive action. Others add that, used correctly, color speeds up the communication process. It is symbolic of change and progress, it attracts and sells, and it is an emotional experience.

Studies addressing physiological and psychological effects of color reveal that the proper use of color—

- Accelerates learning, retention, and recall by 55 to 78 percent.
- Improves and increases comprehension up to 73 percent.
- Increases recognition up to 78 percent.
- Increases willingness to read up to 80 percent.
- Increases motivation and participation up to 80 percent.
- Reduces error counts from 55 to 35 percent.
- Sells products and ideas more effectively by 50 to 85 percent.<sup>5</sup>

With all these good things happening just by using color, one would think that ADTLP publications should be loaded with it. Wrong. The one overriding fact revealed by these studies is that color is most effective when used minimally. VISs must, therefore, be judicious when using color.

#### **A. MISUSING COLOR**

1. Studies show properly used color is cost effective. Conversely, improperly used color can distract readers, while increasing costs. Considering that color can promote attention and stimulate interest, it's conceivable that improperly used color can direct the reader's attention to the color and away from the message, hence putting the emphasis in the wrong place. Improper use of color can play havoc with the most zealous attempts to communicate.

2. Some VISs may confuse the decorative use of color with its functional purpose. Consequently, almost everything on a page might contain color. When everything is emphasized, nothing is emphasized. Actually, overuse of color can create a situation whereby an element devoid of color becomes the most prominent thing on the page. The lack of color seems to shout, "Look here!" This unintentional reverse emphasis is demonstrated in these illustrations.

3. Due to increased cost awareness, the addition of color looms as a high-cost luxury. Color in itself is not the culprit. Improper use of color is. Properly used, color is cost effective. When used improperly, however, costs can become prohibitive. Adding color will not enhance a poorly designed book.

#### **B. USING COLOR EFFECTIVELY**

1. It is the quality of content and design, not necessarily the use of color, that produces a quality publication. Designers of doctrinal literature may use two colors—black and a second color—if necessary. However, the second color must perform a truly functional purpose, not a cosmetic one. If a screen tint of black would be just as effective as a second color in any of the following instances, using the second color would not be functional and would, therefore, be unacceptable.

2. A second color is functional when it accomplishes one or more of the following:

- Makes it easier to differentiate between the various elements in a graphic.
- Directs attention to vital information.
- Links one group or section of elements together to facilitate comparing them to another similar group.
- Permits confining information to a smaller area by allowing more elements in the graphic to be related without confusion.

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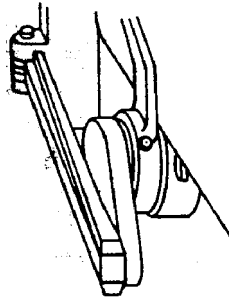
<sup>5</sup> Ronald E. Green. "Communicating with Color," *Audio-Visual Communications* (November 1978): 14.

3. The Pantone Matching System (PMS) numbers identify exact colors. Refer to the PMS number on all administrative correspondence when exact identification is necessary.

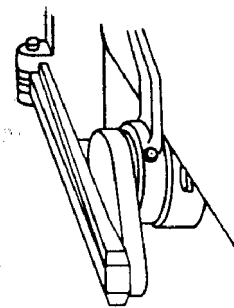
4. Sometimes a fine line separates functional use of color from cosmetic use, making the decision a judgment call. VISs who have adhered to the requirements in designing other publications will have the credibility to support their judgments. However, as a general rule, VISs should not use color—

- In body type.
- In heads and subheads.
- In bullets, dingbats, and other ornaments used for laundry lists.
- For nontextual elements such as boxes, mortises, and rules.
- For running heads and page numbers.
- For tint blocks when a screen tint of black can serve the purpose.

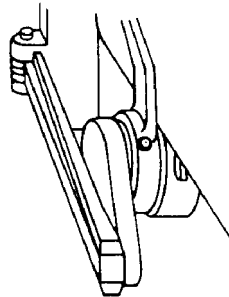
5. One word of caution: Just because a situation is not mentioned in the above list, VISs shouldn't automatically assume that it would be approved for color. Chances are its omission is just an oversight. If the situation is such that a VIS has to think it over, it will more than likely end up on the "should-not" list.



**Color over an entire illustration will eventually direct attention to the illustration but to nothing else about it. Because an illustration in itself is an attention-getter, the color actually serves no function.**



**Removing color from a portion of the covered area draws attention to and emphasizes the portion devoid of color. Here the attention is drawn to the portion of the mechanism to be discussed—the breech operating cam.**



**In this example, the attention-getting characteristics of an illustration are used to draw attention to the drawing of the mechanism. Then, emphasis is placed on the breech operating cam by adding color to only that portion of the illustration.**

**A screen tint of black instead of color would serve to isolate the breech operating cam as well as the color does. The loss would be only in the shock value of color—its effectiveness in gaining additional attention.**

**Figure 30.**

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## Chapter 3

### Design Procedures

**Designing any literature is a challenge, but designing instructional publications is one of the greatest challenges for print media Visual Information Specialists (VIS). Design is not simply a beauty treatment where all that is necessary is to put words together with some illustrations. Design is a whole process that relates facts, ideas, concepts, and doctrine with people. Well-designed publications don't just happen by accident.**

One of the reasons why instructional publications present such an exciting challenge is that there are so many more factors to consider than with other types of publications. For example, a well-designed instructional publication will assist the reader in the following ways:

- Emphasize important points.
- Highlight important elements.
- Provide the means for rapid outlining of information.
- Provide for fast-scanning of contents.
- Contain portions that have been planned to jog the memory.
- Provide for clarification of complicated portions.
- Aid retention of key information.
- Have speedy reference capabilities.

The design procedure consists of two stages—planning the design and application of the design when preparing the comprehensive dummy.

#### A. PLANNING THE DESIGN

When planning the design, the VIS reads the manuscript to become familiar with it, the audience, and the publication's intended use. After consulting with the writer and editor, the VIS determines the size of the publication and the basic format to use.

##### 1. READ THE MANUSCRIPT

(a) The VIS must read the manuscript. A quick scan at first might be enough to get an idea of the content, scope, and tone. But eventually, the VIS will have to read the entire manuscript. If he or she cannot understand the contents, the VIS is not going to be able to communicate the information to the reader.

(b) The VIS should gather enough from the first reading to determine the category of the publication. Is it definitely doctrinal or training information? Is it interim or permanent in nature? Is it a document to be studied and absorbed, or is it for reference—information to be acquired as needed? Knowing (or verifying) the category helps the VIS determine the best way to present the information.

(c) When reading the manuscript, the VIS should note areas to discuss with the editor and the writer and make suggestions for improvements based on communication and design requirements. Notes should include such things as inconsistencies in heads and subheads, chapter starts, and chapter endings.

(d) Is the book written in an outline format and loaded with laundry lists? Although laundry lists may help to reduce reading grade levels, they can also reduce retention capability.

(e) What about consistency? Do all the heads and subheads have text following them, or are some of them followed directly by a subordinate heading? Do all chapters start in the same manner? Or do some have an introductory paragraph, some a laundry list, and some a one-liner? The VIS must check chapter endings also. They should be just as consistent as the chapter starts.

##### 2. IDENTIFY THE READERS

(a) Having read the manuscript, the VIS can now identify the target audience—the reader. Is he or she a young soldier or a training manager? VISs shouldn't make the mistake of thinking that all people are equally motivated. Neither is the life or death possibility always sufficient to overcome a boring subject or presentation. Information presented in a technically correct, uniform manner can be monotonous, General Hamilton H. Howze noted, "I'll long remember the sight, in Italy during the war, of a tank company commander explaining to his gunners the latest hot dope on quick adjustment of fire. He was doing a technically correct but boring job, so the gunners weren't listening. Yet they all knew they were going back into combat the very next day and that their own lives depended on their proficiency. But the presentation was dull, and they all said to hell with it."<sup>6</sup>

(b) To keep readers from getting bored, VISs must make the design of publications interesting. During the planning stage, VISs must use their knowledge of advertising and sales promotion techniques. Knowing the readers—whether

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<sup>6</sup> Hamilton H. Howze, *Howze on Training* (Fort Benning, GA: CONARC Board for Dynamic Training, 1971): 2.

their category is that of individual soldiers, trainers of soldiers, or training managers—influences the approach VISs take in designing books.

### 3. *KNOW THE PUBLICATION'S INTENDED USE*

(a) The VIS must determine how readers will use a particular publication. In addition, the VIS must know if the publication—

- Is to be read and studied or used as a reference.
- Is going to be used in an office or in the field by individual soldiers.
- Will be used at battalion, company, or platoon level.
- Must be carried on soldier's persons or in their barracks bags.
- Needs to fit in a special compartment in a vehicle.
- Will be kept on a shelf in an office building.

(b) The VIS must get answers to these questions. The answers have a direct bearing on how the publication is designed.

### 4. *DETERMINE THE SIZE*

(a) Determining the size of the book is more involved than just selecting one of the approved sizes. Knowing the intended use of the publication, the VIS can provide expert advice on sizes. For example, the writer, editor, and VIS may agree that the book must be published in pocket size so soldiers in the field can carry it in their pockets. But, after estimating the number of pages that will be in the printed product, the VIS may discover that it will not fit the breast pocket of the battle dress uniform (BDU). The outside dimensions (trim size) may be in accord with the seams of the pocket, but the book may be too thick to fit in it.

(b) The VIS must investigate every element that might conceivably influence the size requirements of a publication, such as; the capacity of BDU pockets when a pocket-size book is considered, or the dimensions of a vehicle's compartment when the publication will be stowed in it. And the most important factor is content—can the data be presented in a small image area? Once the size is determined, the VIS can start work on the format.

5. *DETERMINE THE FORMAT* The information on format in chapter 2 and the grids in appendix A should help the VIS decide on a format for the publication. The VIS must ensure that the selected format is the best one for the readers of that particular publication. VISs should not select a format solely because it's the one they always use. Frequent use doesn't necessarily make it appropriate.

Just what is meant by format? It refers to the visual organization and page-by-page treatment that the VIS designs into the publication. So, in the process of deciding upon a format, the VIS must make decisions regarding style, illustration technique, photo treatment, typography, and layout.

(a) *Style* is the *feel* of the book—the overall impression the VIS wants the book to project. Should it be formal or informal, tight or loose, light and airy, or solidly boxed? Whatever the style, the VIS should keep it in mind throughout the planning stage and all phases of production.

#### (b) *Illustration Technique*

(1) Illustrations have the highest visibility of anything in the publication. Readers might not be aware of the subtle nuances of good design, but they can't miss an illustration. The illustrations help to establish the book's style. The VIS may decide to use cartoons, stylized art, simple line drawings, tight or loose wash drawings (continuous tone art), or photographs. The VIS may also consider techniques such as scratchboard, dry brush, air brush, stipple, pencil, and rossi board. If the VIS decides to use photographs, the use of photomechanical screens also could be considered. However, the VIS must first determine if the illustrators assigned to his or her team are proficient in the selected technique. If they are not, the VIS must either switch to another technique they can handle—providing it won't appreciably alter the plans—or use illustrators from another team.

(2) The VIS must have illustrators available who can produce illustrations using the selected technique. Furthermore, the illustrators must be able to produce completely professional artwork. The VIS should never accept poor artwork. Doing so will destroy all the professional effort put into a publication, even to the point of harming the credibility of the writing. VISs must have the authority and full cooperation of their organization, permitting them to—

- Determine the illustration style and technique.
- Supervise the illustrators.
- Accept or reject the artwork produced for publications.

#### (c) *Photo Treatment*

(1) In some instances photographs can be a better choice than illustrations. But, as in choosing an illustration technique, the VIS should first check to see if suitable photographs are available. If photographs are available, the VIS should not take the time to find them and check them for suitability. A junior VIS should do so. If photographs are not available, the VIS should determine if a qualified photographer is available and will be available during the expected

time it will take to produce the photos. Using photographs will not alter the development process. That is, the step-by-step procedure remains the same as when using illustrations.

(2) Another area of concern is the need for photo retouching. It is a rare photo that doesn't require at least some touch-up. The fact that many unretouched photos find their way into Army manuals doesn't mean they don't need retouching.

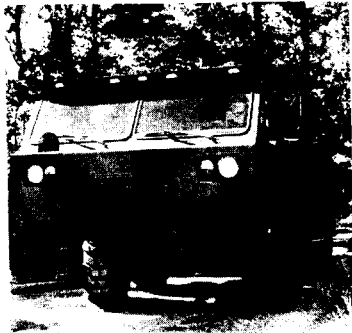
(3) If it is decided to go with photos, then the manner of treatment must be considered. The VIS must study each photo and determine if it is to be handled as a square halftone, or an outline (or silhouette) halftone. VISs might also consider effects like ghosting and vignetting.

(d) *Typographic Considerations* At this point in the planning process, the VIS must select the typefaces and sizes to use in both the body copy and the graphics. He or she must decide the main columnar format, to include column width and primary, secondary, and tertiary leading. The VIS also must determine how to treat heads, subheads, and graphic cutlines and captions. One important consideration is the development of a display type format that will permit consistency throughout the publication. For example, he or she creates a typographic arrangement for one chapter title, and checks to see if the arrangement will work for all chapter titles.

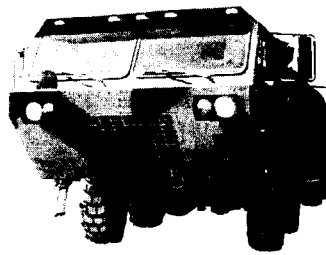
(e) *Layout Considerations* After making decisions relative to all the elements mentioned in the planning stage, the VIS uses the method most suited to his or her creative approach; rough pencil layouts, sketches, or thumbnails. In the process, the VIS should concentrate on devising a format that can be adapted to all chapter-start pages and all other components, segments, and elements that require repetitious treatment. This will ensure consistency and continuity throughout the publication.



**Photo Treatments**



"Square" halftone



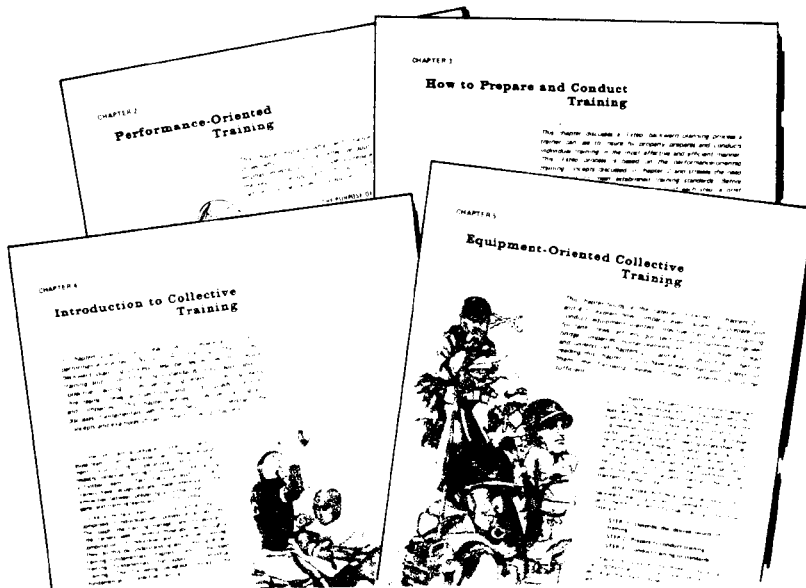
Outline or silhouette halftone



Ghosted background



Combination outline and vignette



*All-over consistency for chapter-start pages. With the editor's help, the VIS was able to get all the chapter titles rewritten to conform with his plan to isolate the word "training." With everything similar, including word arrangement, there is no mistaking the headings for anything other than chapter titles in the same book.*

**Figure 31.**

6. *IDENTIFY THE NEED FOR COLOR* Use of a second color must be based solely on functional need. There are instances when the need can extend to more than one additional color—even require four-color process. However, if more than black and one additional color is required, the VIS must request an exception to policy. The request for exception should contain a full explanation of the situation and the reasons why the VIS believes the use of the additional color or colors is justified.

## **B. PREPARING THE COMP DUMMY**

When the planning process is completed, the VIS can then proceed to prepare the comp dummy by marking type and inscribing instructions and specifications for the typesetter on the final draft manuscript.

The VIS should release the marked-up portions of the manuscript to the typesetter in small increments, such as a chapter at a time. Otherwise, the overall design and production time will be unnecessarily drawn out. If the VIS feeds the manuscript to the typesetter a chapter at a time, the typeset galleys of the beginning chapters can be finished by the time the VIS finishes marking the manuscript. The VIS can then start work on the comp dummy after marking up the last manuscript page. This procedure can reduce the number of calendar days required for production by 15 percent, and the design portion alone by up to 33 percent.

After the VIS checks the typeset galleys for typographical accuracy, photocopies are made. The VIS stores the original galleys for safekeeping and uses the photocopies in production of the comp dummy. The illustrator will use the original galleys to prepare the camera ready mechanicals (CRM).

The comp dummy controls the production, from camera-ready mechanicals to the printed product. Therefore, the VIS must carefully design and prepare the comp. It is the first visual evidence of the VIS's craft and expertise, and is a page-by-page facsimile of how the finished publication will appear. It shows margins, areas of type, roughed-in illustrations, headings and captions, and suggested colors. It is drawn to the exact size with every item specified and proofs of typeset copy pasted in position. In actuality, the comp dummy is a prototype of the final printed publication.

### *1. LAYING OUT PAGES*

(a) The VIS begins construction of the comp dummy by first concentrating on layout of pages. Working two pages at a time (facing pages) the VIS must treat them as a single unit instead of two single pages. Using this approach helps the VIS maintain the necessary continuity between the pages. To maintain the flow from the right-hand page to the following left-hand page, the VIS must think of each page as an extension of the previous one and as a connector to the next one. VISs should never make the mistake of deliberately designing a page to make it look different from the others. When laying out pages, VISs should keep in mind that it's extremely important to merge graphics with the appropriate text. So, when positioning text and graphics on pages, the VIS should determine their locations by their functional relationship to each other.

(b) To facilitate the layout of facing pages, the VIS should prepare a grid (or layout guide) and indicate all the margins and column positions. The VIS should then indicate positions for repetitive elements such as the sink line, running heads, and page numbers. To save time and effort and maintain accuracy, the VIS can then tape a sheet of tracing paper over the entire grid and work on the tracing paper. The VIS repeats this for each set of facing pages.

**PERFORMANCE FACTORS FOR DESIGN AND PRODUCTION OF A 200-PAGE BOOK**

WORKING EACH TASK IN SEQUENCE		WORKING CERTAIN TASKS CONCURRENTLY		WORKING WITH TWO ILLUSTRATORS	
TASK	TOTAL MANHOURS	TASK	CONSECUTIVE MANHOURS	TASK	CONSECUTIVE MANHOURS
DESIGN	320	DESIGN AND	320 (33% fewer days)	DESIGN AND	320
TYPESET	160	TYPESET		TYPESET	
PROOFING	10	PROOFING	10	PROOFING	10
ART/CRM	500	ART/CRM	500	ART/CRM	250 (2 Illustrators)
COORDINATION	60	COORDINATION	60	COORDINATION	60
	<u>1,050 manhours or 131.3 days</u>		<u>890 manhours or 111.3 days (15% fewer total days)</u>		<u>640 manhours or 80 days (39% fewer total days)</u>

**Figure 32.**

**2. PLACING GRAPHICS**

(a) Illustrations, photos, graphs, charts—all the graphics in a publication—are essential to the text. As such, they must be merged with the copy that pertains to each. In other words, the graphics should share the same page as the text or, if possible, be located no further away than the facing page.

(b) Why is it so important to merge the graphics and text? Imagine, if you will, a briefing in which the slides are projected 2 or 3 minutes after the briefer has addressed their content. The audience would either forget what was said earlier about the graphic or confuse the graphic with the information the briefer is presently discussing. In any event, this briefing technique could almost completely negate the briefer's attempt to communicate with the audience. The same thing happens when readers come across a graphic whose subject matter was covered two or three pages previously or when they have to stop and search for a referenced graphic.

(c) In the planning stage, the VIS determined the illustration style and technique. Now, the VIS must consider each specific graphic. He or she must plan and execute each rough visualization as precisely as necessary to ensure illustrators will know exactly what to portray. Because of the intricacies involved with graphics for instructional publications, rarely will visualization alone suffice. There will be plenty of times when oral instructions plus demonstrations will be needed.

**3. PLACING DISPLAY TYPE**

(a) Having made all the necessary decisions regarding type specifications, both body copy and display, the VIS must now plan the page by-page placement.

(b) Avoid excessive use of display type. Occasionally the VIS will need a display line as a one-time situation; that is, not classified as a standard heading or title. When this happens, watch the size. If anything much over 16 points is specified, stop and recheck. Chances are the design would be better suited to a vugraph or poster than a page in a publication.

(c) Many visual information specialists wisely refrain from having every word in graphics and tables typeset initially. They wait until the area is blocked out in the comp dummy. Then, knowing the space they have to work with, they can devise accurate specifications the first time around. When supplied with this type of layout, the phototypesetter operator can prepare a tabulated galley proof that will save the VIS countless hours of cutting and pasting individual pieces of type. It is not necessary to typeset every single letter or word for inclusion in the comp dummy. The VIS can pencil in such items as page numbers and running headings on the comp. After the comp is returned from having been staffed, the page numbers and running headings will be typeset, along with any required changes to the rest of the comp.

**4. USING FOLDOUTS**

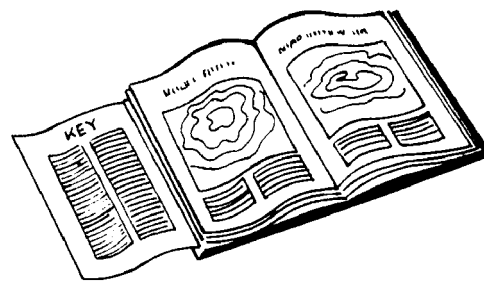
(a) When deciding whether or not to use a foldout, the VIS must first determine if the foldout is essential and functional. Foldouts can perform a functional mission when they—

- Facilitate merging of graphics and text.
- Provide a basic page with information in support of several other pages.
- Permit handling an oversized compilation of data that should not be separated, such as procedural steps in a process that would lose continuity if segmented.

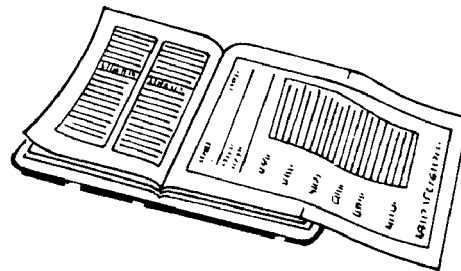
- Allow for the inclusion of a reproducible form that is larger than the trim size of the publication.

(b) Because of the expense of using foldouts, functionality alone may not fully warrant their use. Essentiality may have to be proven. Foldouts are expensive. Because of the difference in size from that of the basic publication, foldouts are printed separately, folded separately, and usually collated and inserted by hand. Added to this is the wasted space that sometimes occurs on the reverse side of foldouts.

(c) With all of this in mind, VISs must try different approaches before concluding that a foldout is the only way to do the job. Some of the solutions that have worked after replanning, repositioning, and reCOORDINATING with the subject matter expert and editor include spreading the material across facing pages or printing the material broadside (horizontal) with the left-hand page positioned foot-to-gutter and the right-hand page head-to-gutter.



*Example of a foldout supporting the contents of several other pages.*



*A reproducible form in a publication with a trim size smaller than the form.*

**Figure 33.**

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### **C. USING THE COMP DUMMY**

Except for the author's written text, the comp dummy is the most valuable tool in the instructional publication development process. As a prototype, it permits everybody from the writer to the final approving authority to see what the finished book will look like, what it will say, and how it will say it. Any changes that might be required can be annotated on the comp before proceeding to the expensive phase of preparing the final artwork and CRMs. The comp dummy is used—

- As a final check and review by the writer, editor, and approving official.
- As a final check by publication reviewers for technical information such as references, publication dates, and

distribution data.

- As a blueprint for illustrators and others involved in preparing the final artwork and CRMs.
- As a final check against CRMs by the VIS, editor, and writer.
- As a means of estimating printing costs.
- For quality control review. CRMs are checked against the comp dummy to assure that the CRMs are correct.
- By the printer to check paper quantities, color, screens, halftone locations, page backup, signature makeup, and foldout locations.

The comp dummy is also highly instrumental in speeding up CRM production. For example, a comp dummy given to a 10-man art department to put into CRM form can be separated into 10 portions, one for each illustrator, and the complete set of CRMs can be completed in one-tenth of the consecutive work hours for one person. Without a comp dummy to follow, the production of CRMs would be a plan-as-you-go project, pasteup people would be making VIS decisions, the full complement of illustrators could not be used, and it would take a lot longer to produce the CRMs.

## Appendix A Basic Page Grids

### A-1.

This appendix contains basic page grids for use in designing publications, particularly those in the Army-wide Doctrinal and Training Literature Program (ADTLP). The grids are in the three approved trim sizes, and are planned to accommodate body copy to be set in type sizes 9 to 12 points.

### A-2.

The grids are presented in facing-page formats rather than single pages. This enables a VIS to plan the page-by-page appearance of a book as it will be viewed by its reader. It also reduces the chances of designing a publication that looks like it is made up entirely of left-hand, or right-hand, pages. Working on facing pages also helps to keep the VIS aware of the need to maintain both visual and textual flow from one page to another.

### A-3.

Additional information displayed with each grid includes minimum and maximum line lengths for the body copy type size indicated, location of key elements, plus the margin and gutter measurements.

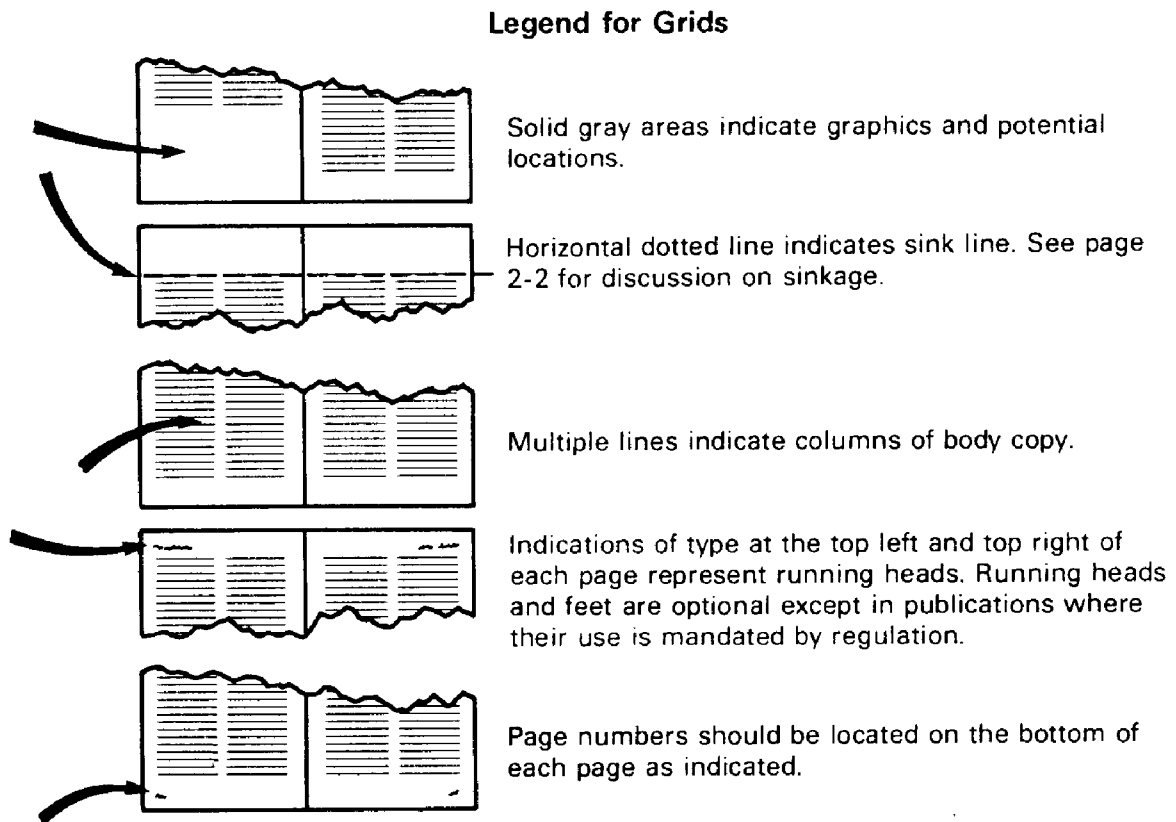
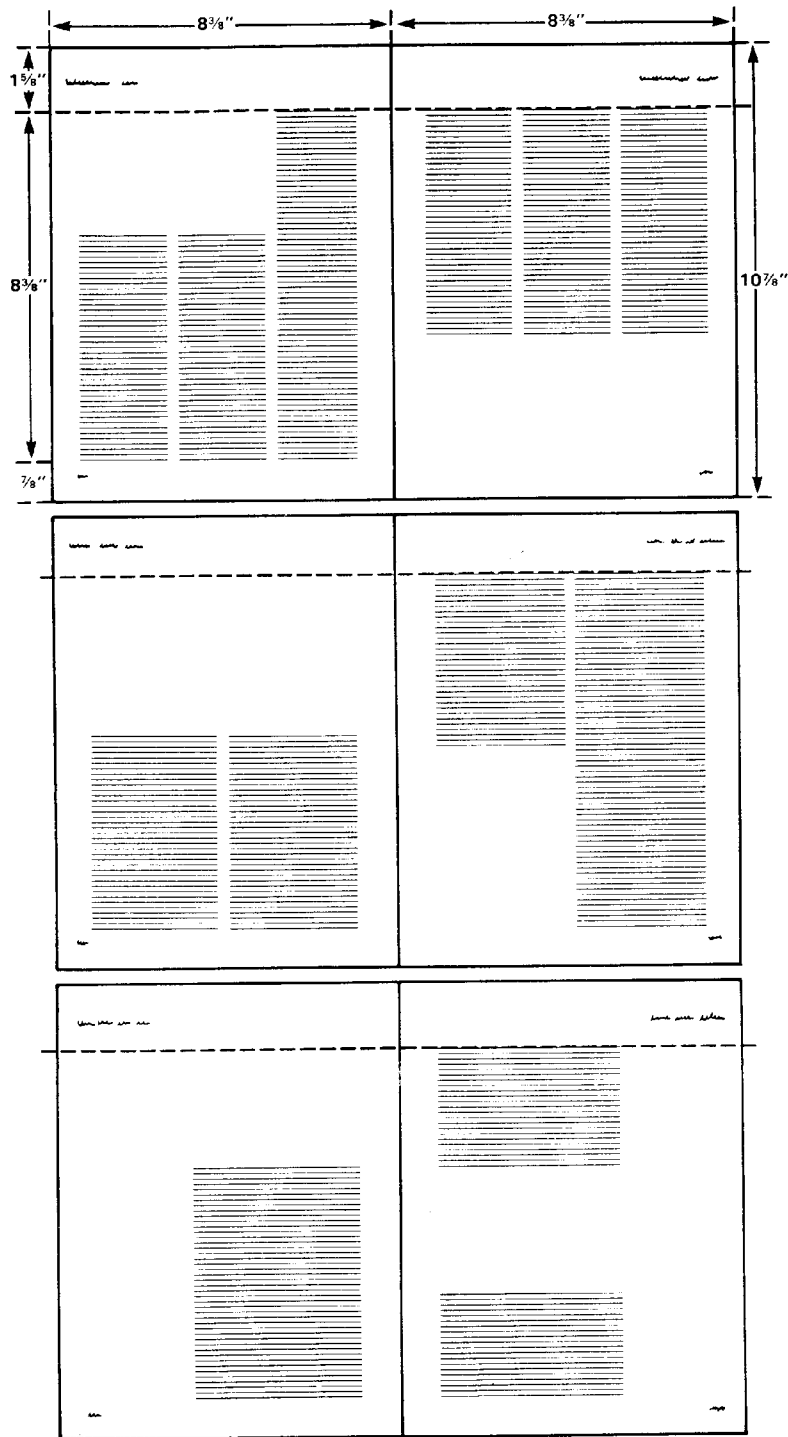


Figure A-1.



**Full Size**

**8 3/8 by 10 7/8 Inches**

**9-Point Type in 3-Column Format**

- Column width — 13 picas with 2-pica gutters.
- Outside page margins — 3 picas.
- Inside page margins — 4 1/2 picas.
- Sinkage — graphics and headings may extend into the area, but text hangs on the sink line.
- Graphics — may be located at top or bottom of page, but not in center across page. Width and depth as necessary.

**Full Size**

**8 3/8 by 10 7/8 Inches**

**10-Point Type in 2-Column Format**

- Column width — 19 or 20 picas with 2-pica gutters.
- Outside page margins — 3 or 4 picas.
- Inside page margins — 5 or 6 picas.
- Sinkage — graphics and headings may extend into the area, but text hangs on the sink line.
- Graphics — may be located at top or bottom of page, but not in center across page. Width and depth as necessary.

**Full Size**

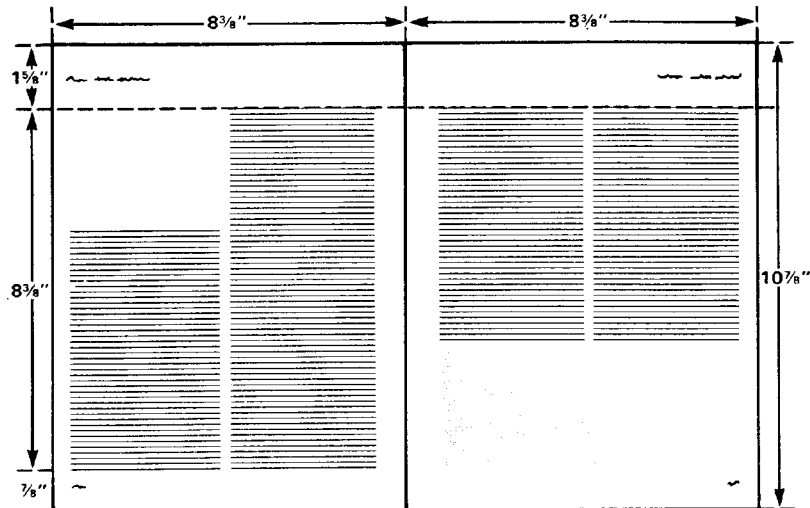
**8 3/8 by 10 7/8 Inches**

**10-Point Type in 1-Column Format**

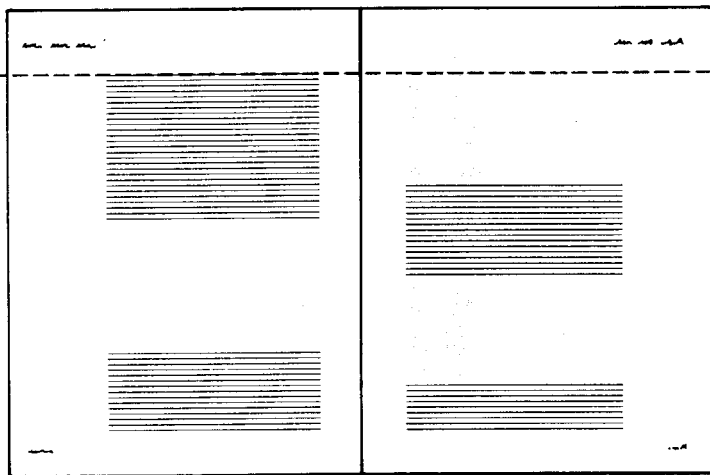
- Column width — 27 picas.
- Outside page margins — 3 or 4 picas.
- Inside page margins — 5 or 6 picas.
- Sinkage — graphics and headings may extend into the area, but text hangs on the sink line.
- Graphics — may be located at top, bottom, or center of page. Width and depth as necessary.
- Ideal format when outside dead white space can be used for graphics or sideheads.

Figure A-2.

- Full Size**  
**8 3/8 by 10 7/8 Inches**  
**11-Point Type in 2-Column Format**
- Column width — 20 1/2 picas with 2 pica gutters.
  - Outside page margins — 2 1/2 picas.
  - Inside page margins — 4 1/2 picas.
  - Sinkage — graphics and headings may extend into the area, but text hangs on the sink line.
  - Graphics — may be located at top or bottom of page, but not in center across entire page. Width and depth as necessary.



- Full Size**  
**8 3/8 by 10 7/8 Inches**  
**11-Point Type in 1-Column Format**
- Column width — 30 picas.
  - Outside page margins — 4 picas.
  - Inside page margins — 6 picas.
  - Sinkage — graphics and headings may extend into the area, but text hangs on the sink line.
  - Graphics — may be located at top, bottom, or center of page. Width and depth as necessary.
  - Use mainly for low page count books with many graphics.



- Full Size**  
**8 3/8 by 10 7/8 Inches**  
**12-Point Type in 2-Column Format**
- Column width — 20 1/2 picas with 2-pica gutters.
  - Outside page margins — 2 1/2 picas.
  - Inside page margins — 4 1/2 picas.
  - Sinkage — graphics and headings may extend into the area, but text hangs on the sink line.
  - Graphics — may be located at top or bottom of page, but not in center across entire page. Width and depth as necessary.

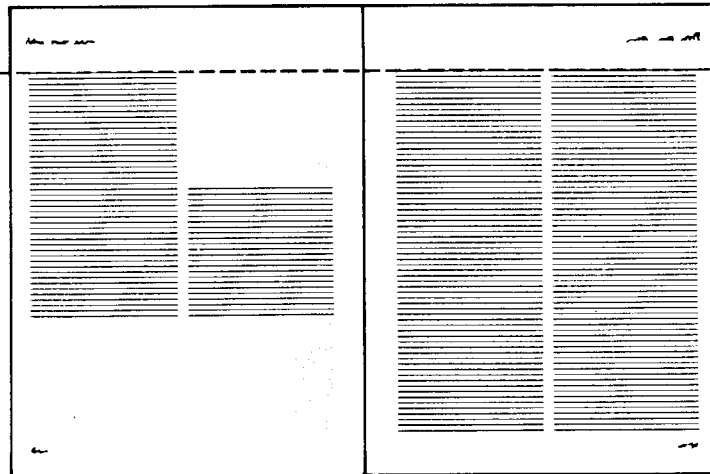
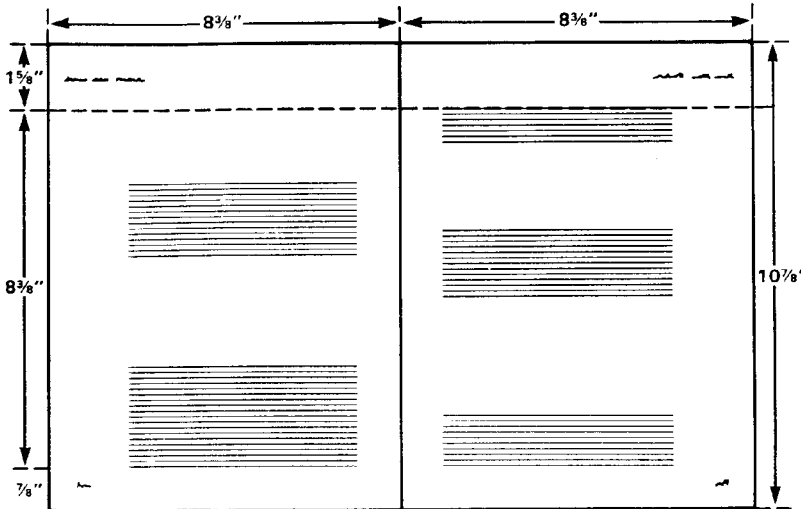


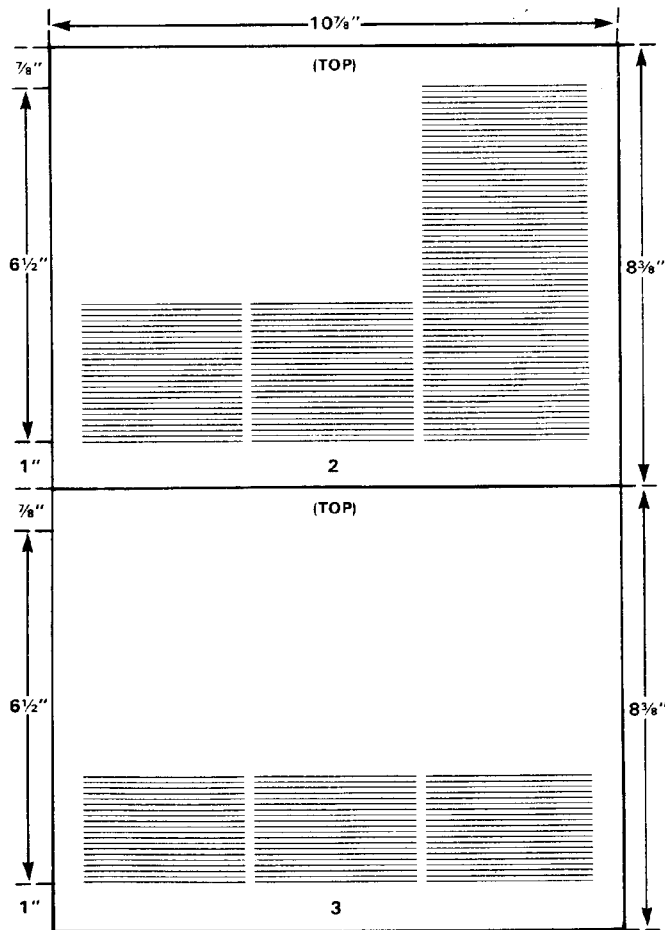
Figure A-3.





**Full Size**  
**8 3/8 by 10 7/8 Inches**  
**12-Point Type in 1-Column Format**

- Column width — 32 picas.
- Outside page margins — 2 1/2 or 3 picas.
- Inside page margins — 4 1/2 or 5 picas.
- Sinkage — graphics and headings may extend into the area, but text hangs on the sink line.
- Graphics — may be located at top, bottom, or center of page. Width and depth as necessary.
- Use mainly for low page count books with many graphics.



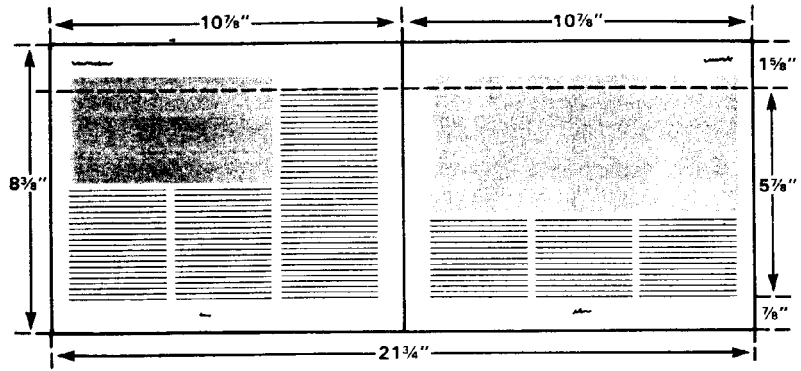
**Full Size**  
**Broadside (Horizontal)**  
**10 7/8 by 8 3/8 Inches**

- 10- or 11-Point Type in 3-Column Format**
- Column width — 18 picas with 2-pica gutters.
  - Left and right page margins — 3 1/2 picas.
  - Sinkage — Not normally necessary in a head-to-foot broadside format.
  - Graphics — May be located at top or bottom of page, but not in center across entire page. Width and depth as necessary.
  - Use mainly when most of the graphics consist of large tables and charts requiring this width, and body copy is minimal.

Figure A-4.

**Full Size  
Broadside (Horizontal)  
10 7/8 by 8 3/8 Inches  
10- or 11-Point Type in  
3-Column Format**

- Column width — 18 picas with 2-pica gutters.
- Outside page margins — 2 1/2 picas.
- Inside page margins — 4 1/2 picas.
- Sinkage — graphics and headings may extend into the area, but text hangs on the sink line.
- Graphics — may be located at top or bottom of page, but not in center across entire page. Width and depth as necessary.
- Use mainly when most of the graphics consist of extended tables and charts requiring this width, and body copy is minimal.



**Full Size  
Broadside (Horizontal)  
10 7/8 by 8 3/8 Inches  
11- or 12-Point Type in 2-Column Format**

- Column width — 28 picas with 2-pica gutter.
- Left and right page margins — 3 1/2 picas.
- Sinkage — not normally necessary in a head-to-foot broadside format.
- Graphics — may be located at top or bottom of page, but not in center across entire page. Width and depth as necessary.
- Use mainly when most of the graphics consist of large tables and charts requiring this width, and body copy is minimal.

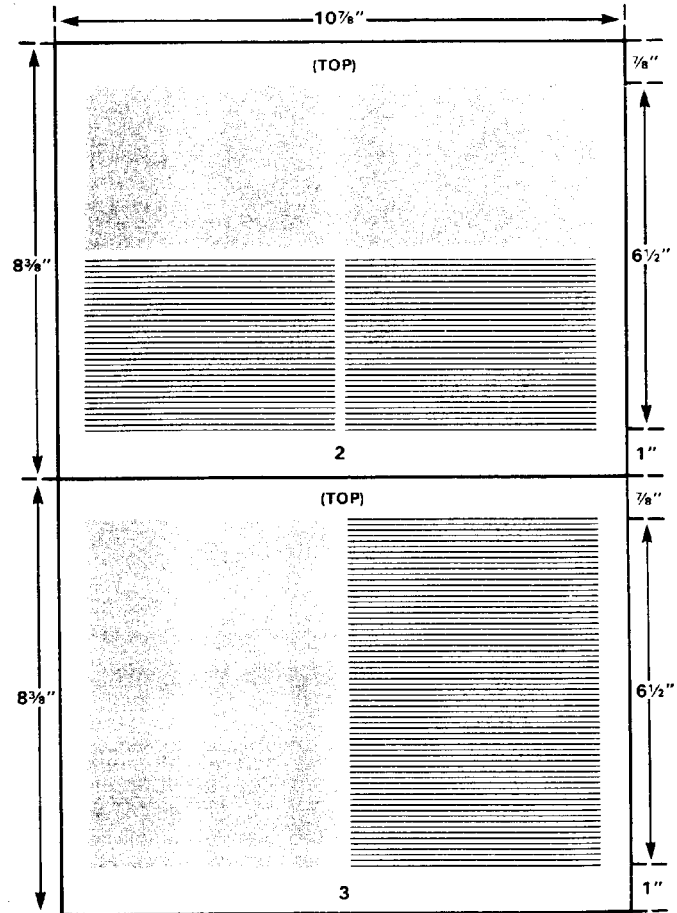
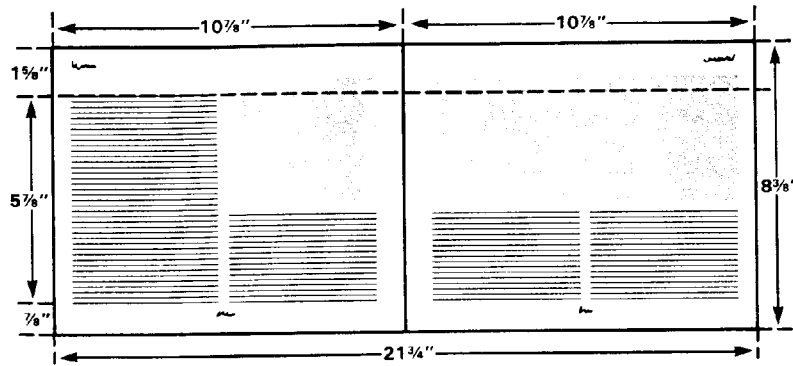
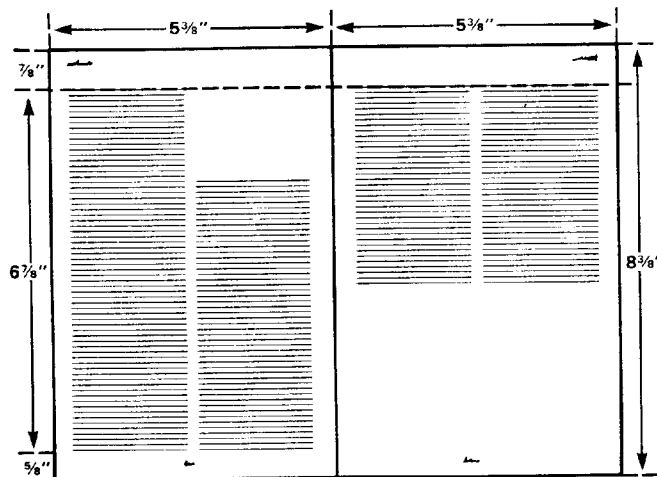


Figure A-5.



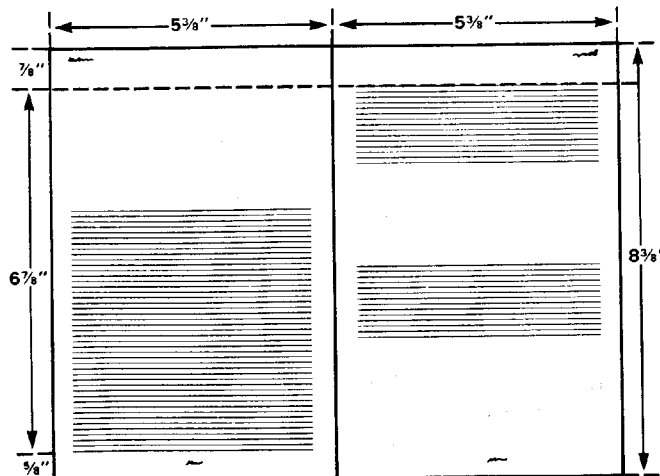
**Full Size  
Broadside (Horizontal)  
10 7/8 by 8 3/8 Inches  
11- or 12-Point Type in  
2-Column Format**

- Column width — 28 picas with 2-pica gutter.
- Outside page margins — 2 1/2 picas.
- Inside page margins — 4 1/2 picas.
- Sinkage — graphics and headings may extend into the area, but text hangs on the sink line.
- Graphics — may be located at top or bottom of page, but not in center across entire page. Width and depth as necessary.



**Intermediate Size  
5 3/8 by 8 3/8 Inches  
9-Point Type in 2-Column Format**

- Column width — 12 picas with 2-pica gutter.
- Outside page margins — 2 1/2 picas.
- Inside page margins — 3 1/2 picas.
- Sinkage — graphics and headings may extend into the area, but text hangs on the sink line.
- Graphics — may be located at top or bottom of page, but not in center across entire page. Width and depth as necessary.



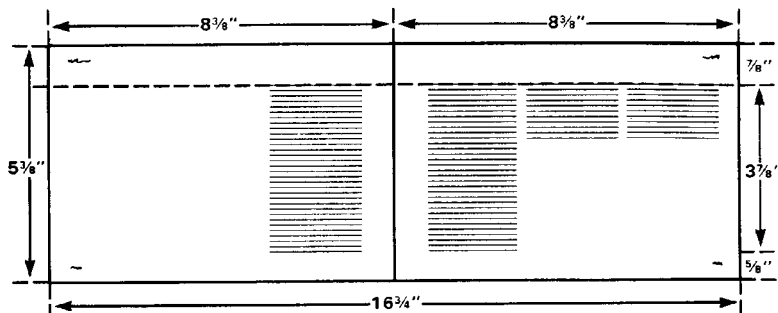
**Intermediate Size  
5 3/8 by 8 3/8 Inches  
10- or 11-Point Type in 1-Column Format**

- Column width — 26 picas.
- Outside page margins — 2 1/2 picas.
- Inside page margins — 3 1/2 picas.
- Sinkage — graphics and headings may extend into the area, but text hangs on the sink line.
- Graphics — may be located at top, bottom, or center of page. Width and depth as necessary.

Figure A-6.

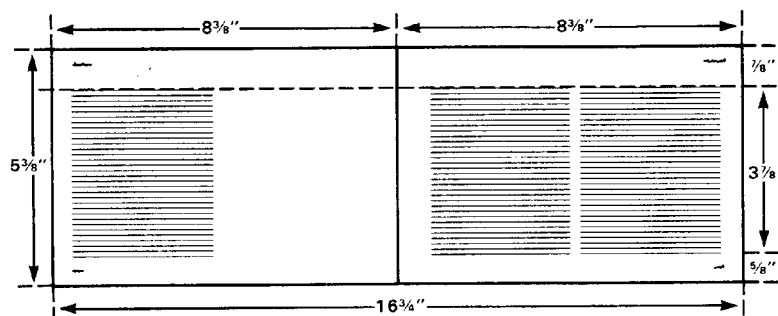
**Intermediate Size  
Broadside (Horizontal)  
8 3/8 by 5 3/8 Inches  
9- or 10-Point Type  
in 3-Column Format**

- Column width — 13 picas with 2-pica gutters.
- Outside page margins — 2 1/2 picas.
- Inside page margins — 4 1/2 picas.
- Sinkage — graphics and headings may extend into the area, but text hangs on the sink line.
- Graphics — may be located at top or bottom of page, but not in center across entire page. Width and depth as necessary.



**Intermediate Size  
Broadside (Horizontal)  
8 3/8 by 5 3/8 Inches  
10- or 11-Point Type  
in 2-Column Format**

- Column width — 20 1/2 picas with 2-pica gutter.
- Outside page margins — 2 1/2 picas.
- Inside page margins — 4 1/2 picas.
- Sinkage — graphics and headings may extend into the area, but text hangs on the sink line.
- Graphics — may be located at top or bottom of page, but not in center across entire page. Width and depth as necessary.



**Pocket Size  
4 1/8 by 6 1/4 Inches  
9- or 10- or 11-Point Type  
in 1-Column Format**

- Column width — 19 picas.
- Outside page margins — 2 picas.
- Inside page margins — 3 1/2 picas.
- Sinkage — graphics and headings may extend into the area, but text hangs on the sink line.
- Graphics — may be located at top, bottom, or center of page. Width and depth as necessary.

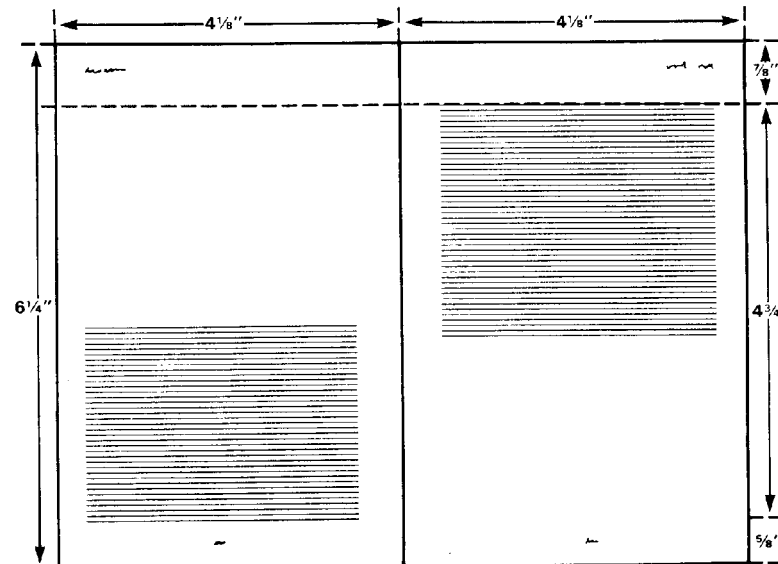
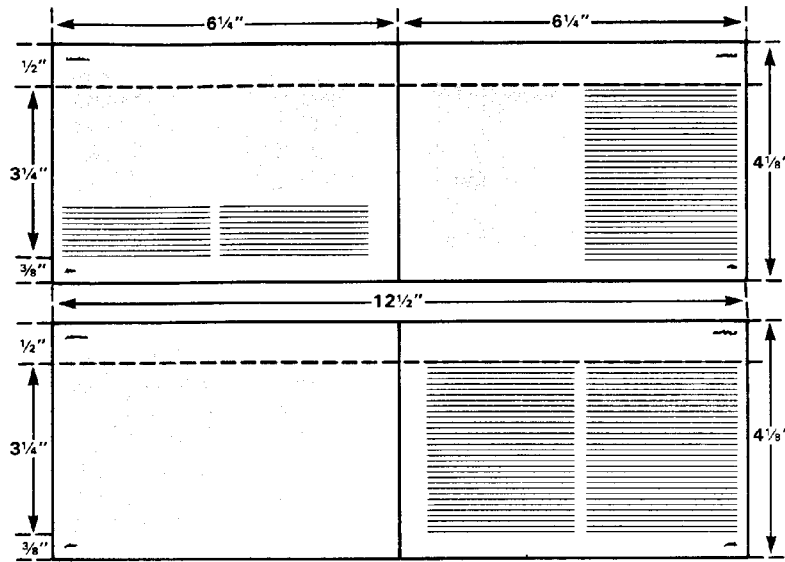


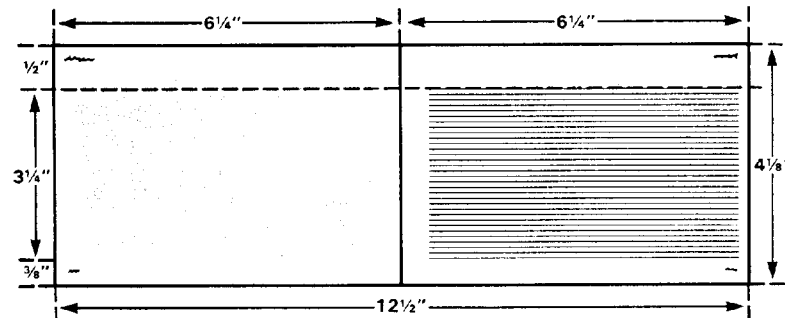
Figure A-7.



**Pocket Size  
Broadside (Horizontal)  
6 1/4 by 4 1/8 Inches**

**9- or 10-Point Type  
in 2-Column Format**

- Column width — 15 picas with 2-pica gutter.
- Outside page margins — 2 picas.
- Inside page margins — 3 1/2 picas.
- Sinkage — graphics and headings may extend into the area, but text hangs on the sink line.
- Graphics — may be located at top, bottom, or occupy entire page with text on facing page.



**Pocket Size  
Broadside (Horizontal)  
6 1/4 by 4 1/8 Inches**

**12-Point Type in 1-Column Format**

- Column width — 32 picas.
- Outside page margins — 2 picas.
- Inside page margins — 3 1/2 picas.
- Sinkage — graphics and headings may extend into the area, but text hangs on the sink line.
- Graphics — may be located at top, bottom, or occupy entire page with text on facing page.

Figure A-8.

## **Appendix B**

### **Design Specifications for DA PAM 25-36**

This appendix contains some of the specifications and rationale for the design of this publication. When applicable, the information and recommendations presented in the book itself were followed. The reader may be interested in knowing why a particular approach was taken when a number of options existed. Hopefully, the explanations and accompanying graphics will clarify any questions that might arise.

#### **B-1.**

When planning the basic format, initial consideration had to be given to the fact that this was to be an administrative publication, not a doctrinal or training manual. As such, certain prerequisites had to be honored. Writing style had to conform and, in some instances, methods of presenting the information were also dictated. Fortunately, the publication was planned as an informational pamphlet rather than a standard one. This left only a few restrictions regarding format.

#### **B-2.**

Four different classifications of material were to be presented, in addition to the body copy. These classifications and how they were eventually treated follows:

- Augmenting information not directly related to the text, but of general interest and use. Needed to be easily located with a quick scan: This material is presented as sidebars and quickly identified by the 20 percent screen tint behind the copy.
- Augmenting information that further explains a subject covered in the text: Where this material covers more than three pages, it appears as an appendix. Otherwise, it is treated as a special segment and visually identified by a border with rounded corners.
- Charts and other graphics directly related to a subject in the text, and referenced there: This material is primarily in table format and not boxed in.
- Illustrations: There are two categories—illustrations directly related to a subject in the text, and those that augment text. Practically all the illustrations are accompanied by conversational tone cutlines. This informality is further advanced by a casual approach in their placement.

#### **B-3.**

The variety of graphic material, and the informal approach to illustrations, are the main reasons why the usual tightly blocked, administrative formats were ruled out. The three-column format with ragged bottoms accommodates the informal approach desired. (It also helps to eliminate bad breaks from column to column.)

#### **B-4.**

Ragged right composition was chosen primarily because it helps achieve the light and open appearance needed to fully complement the informality of the illustrations. On a personal note, the designer felt that the consistent word spacing achieved increases readability over the traditional justified style of composition. Another approach taken to aid readability was making the inner margins of the pages wide enough to avoid curving of the text. The curving has a tendency to reduce reading speed.

#### **B-5.**

The light and open format could create continuity problems due to the looseness of all the elements. It needed something to tighten it up—but not too much. This was accomplished by centering all the main headings over the three columns, and adding a horizontal rule that extended to both page margins.

#### **B-6.**

All-caps typography was avoided in all the textual matter, including graphic cutlines, except for abbreviations and acronyms. However, the abundance of headings, subheadings, titles, and captions in Army publications makes it virtually impossible to eliminate all-caps typography in that area. The alternative would be to use a large variety of typefaces, fonts, and sizes. The slightly lower reading rate of all-caps typography in the headings was considered as being preferable to the confusion that the alternative could create.

#### **B-7.**

All the type was set on an AM Varityper Comp Set, 3510-W. The body copy is Schoolbook Medium. This typeface is comparable to the Century Schoolbook, Century Text, Century Textbook, and Cambridge Light, among others, used in other phototypesetting systems. The 9- point size of the body copy, with 1-point leading for the 13 picas basic column width, is in accord with research findings dealing with type size, weight, leading, and line length. Main headings and subheads were also set in Schoolbook. The remainder of the publication, including headings that indicate divisions (chapter headings, section headings, etc.), was set in Univers.

**B-8.**

The following pages contain reproductions of the actual type specification sheets prepared for this publication, and some of the marked up manuscript pages.

DA PAM 25-36

<u>TYPEFACES</u>	<u>KEY</u>
#022 - UNIVERS	S - SIZE
#005 - SCHOOLBOOK	F - FONT
	LL - LINE LENGTH
	PL - PRIMARY LEADING
	SL - SECONDARY LEADING
	TL - TERTIARY LEADING

BODY COPY

CODE

(A) - #005 S-09 F-1 LL-13 PL-10 SL-15 TL-17 POINTS PLUS TYPE SIZE OF THE FOLLOWING LINE. RAGGED RIGHT COMPOSITION. NO PARA INDENT.

(B) INTRODUCTORY PARAGRAPH - CHAPTERS: #005 S-10 F-4 LL-27 PL-12 SL-18 TL-21 POINTS PLUS TYPE SIZE OF THE FOLLOWING LINE. RAGGED RIGHT COMPOSITION. NO INDENT OF FIRST LINE. 12-POINT OF FIRST LETTER IN PARA.

(C) INTRODUCTORY PARAGRAPH - SECTIONS: #005 S-10 F-1 LL-27 PL-12 SL-14 TL-21 POINTS PLUS TYPE SIZE OF THE FOLLOWING LINE. JUSTIFIED L & R MARGINS. NO INDENT.

(D) LAUNDRY LIST: #005 S-04 F-1 LL-12 (INDENT 1 PICA FROM LEFT MARGIN) PL-10 SL-14 TL-17 POINTS PLUS TYPE SIZE OF THE FOLLOWING LINE. BULLET SIZE: 6 POINTS.

(E) NOTES: #005 S-08 F-3 LL-13 PL-09 SL-14 TL-17 POINTS PLUS TYPE SIZE OF FOLLOWING LINE.

A writing tablet and a pen were all the tools the VIS needed to prepare his type-setting specification sheets. The first sheet covered the five kinds of main textual matter that make up the body copy in this book, and are coded accordingly from A through E.

The second sheet covered the remaining textual matter. Notice that there are two codes for special segments. One calls for Univers Italic, on a 24-pica line, and the other prescribes Univers Medium, on an 18-pica line.

(F) FOOTNOTES: #005 S-06 F-1 LL= AS NECESSARY, UP TO \* MAXIMUM OF 43 PICAS. PL-08 SL-12.

(G) SIDEBAR TEXT: #022 S-09 F-3 LL-24 PL-11 SL-16. JUSTIFIED COLS.

(H) SPECIAL SEGMENT TEXT - #1: #022 S-10 F-2 LL-24 PL-12 SL-18 TL-24. JUSTIFIED COLUMNS. INDENT PARAS.

(I) SPECIAL SEGMENT TEXT - #2: #022 S-10 F-1 LL-18 PL-11 SL-17 TL-22. JUSTIFIED COLUMNS. INDENT PARAS.

(J) GRAPHICS' CUT LINES: #022 S-07 F-2 LL= AS MARKED. PL-09 SL-14. FLUSH LEFT OR RIGHT AS INDICATED. NO INDENT.

Figure B-1.



CODE	ITEM	HEADING AND MAIN ELEMENTS	TYPEFACE	SPEED & LOCATION
(K)	CHAPTER & NUMBER	#022 F-1 CAPS		S-10 TL-22 CENTER ON 43 PICAS, OVER CHAP TITLE
(L)	CHAPTER TITLE	#022 F-4 c&lc		S-12 PL-12 TL-38 CENTER ON 43 PICAS
(M)	SECTION HEADING	#022 F-3 c&lc		S-12 PL-12 TL-30 FLUSH LEFT ON 43 PICAS
(N)	MAIN HEADING	#005 F-3 CAPS		S-11 PL-11 TL-18 CENTER ON 43 PICAS
(O)	1ST SUBHEADS	#005 F-3 CAPS		S-09 PL-09 TL-18 CENTER ON 13 PICAS
(P)	2D SUBHEADS	#005 F-3 c&lc		S-09 PL-09 TL-14 CENTER ON 13 PICAS
(Q)	3D SUBHEADS	#005 F-4 c&lc		S-09 PL-10 RUN IN FIRST LINE OF COPY
(R)	SIDEBAR CAPTION	#022 F-4 CAPS		S-09 PL-09 TL-13 CENTERED ON 24 PICAS
(S)	SPECIAL SEGMENT CAPTION	#022 F-4 c&lc		S-11 PL-11 TL-15 CENTERED ON 24 PICAS
(T)	GRAPHICS' CAPTIONS	#022 F-3 c&lc		S-07 PL-09 RUN IN FIRST LINE OF COPY
(U)	RUNNING HEAD/FOOT	#022 F-1 c&lc		S-08
(V)	PAGE NUMBERS	#022 F-3		S-08

A separate sheet was used for listing the specifications for headings and other main elements. However, the coding continued, picking up with the letter K. As can be seen, the recurring elements in this publication came to a total of 22—the last item using the letter V. If they had exceeded 26, the VIS would have continued his coding, by using double letters (AA, BB, CC, etc.).

Figure B-2.



#022  
 LL-1300  
 Justified column

] Full Size [ S-11 F-4 ~~SL-160~~ SL-160  
 ] Broadside (Horizontal) [ S-11 F-3 SL-160  
 ] 10 7/8 by 8 3/8 Inches [ S-10 F-4 SL-160  
 ] 10- or 11-Point Type [ S-10 F-3 PL-100 SL-150  
 ] in 3-Column Format

S-09  
 F-1  
 PL-100  
 SL-140

- • Column width — 18 picas with 2-pica gutters.
- • Outside page margins — 2 1/2 picas.
- • Inside page margins — 4 1/2 picas.
- • Sinkage — graphics and headings may extend into the area, but text hangs on the sink line.
- • Graphics — may be located at top or bottom of page, but not in center across entire page. Width and depth as necessary.
- • Use mainly when most of the graphics consist of extended tables and charts requiring this width, and body copy is minimal.

**Full Size**

**Broadside (Horizontal)**

**10 7/8 by 8 3/8 Inches**

**10- or 11-Point Type in 3-Column Format**

- Column width — 18 picas with 2-pica gutters.
- Outside page margins — 2 1/2 picas.
- Inside page margins — 4 1/2 picas.
- Sinkage — graphics and headings may extend into the area, but text hangs on the sink line.
- Graphics — may be located at top or bottom of page, but not in center across entire page. Width and depth as necessary.
- Use mainly when most of the graphics consist of extended tables and charts requiring this width, and body copy is minimal.

*On-the-spot development of copy happens frequently during the design process. A manuscript for appendix B did not exist, as its inclusion was an afterthought. This is how the copy for the printed text (inset) was submitted to the phototypesetter operator.*

Figure B-4.

## Appendix C Bibliography

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## **Glossary**

### **Section I Abbreviations**

#### **aa**

author's alteration

#### **ADTLP**

Army-wide Doctrinal and Training Literature Program

#### **ARTEP**

Army Training and Evaluation Program

#### **ATSC**

Army Training Support Center

#### **AV**

audiovisual

#### **B&W**

black and white

#### **BDU**

battle dress uniform

#### **c&lc**

capitals and lowercase

#### **c&sc**

capitals and small capitals

#### **comp**

comprehensive dummy

#### **CRM**

camera-ready mechanical

#### **F**

font

#### **FM**

field manual

#### **HQ**

headquarters

#### **ms**

manuscript

#### **OSD**

Office of the Secretary of Defense

#### **PM**

printed material, print media

#### **PMS**

Pantone Matching System

**SME**

subject-matter expert

**STPs**

soldier training publications

**TC**

training circular

**TRADOC**

United States Army Training and Doctrine Command

**u&lc**

upper and lowercase

**VIS**

visual information specialist

**wf**

wrong font

**Section II****Terms****Acetate**

A virtually clear substance used as a film base.

**Additional leading**

Spacing added to normal line spacing, often used between paragraphs or to separate blocks of tabular information. *See* leading *and* secondary leading.

**Agate**

Type with a body measure of five-and-one-half points. *See* body size *and* point.

**Align**

To line up letters or words on the same horizontal or vertical line.

**Alignment**

In typesetting, positioning characters on a common reference line; for example, base-aligned characters share a common baseline.

**Alphabet length**

The horizontal measurement, usually in points, of the total width of the 26 lowercase alphabet characters of a typeface; an approximation of the relative widths of the face's characters, useful in determining the character count. *See* character count.

**Alphanumeric**

Any of a set of machine-processible characters including the letters A through Z, the figures 0 through 9, and some special symbols (+ - / \$).

**Ampersand**

The and sign [&]. The symbol & (Latin *et*, meaning *and*; a contraction of *and per se*).

**Apex**

The joining of two stems at the uppermost part of certain typographic characters.

**Arabic numerals**

The number symbols 1, 2, 3, 4, 5, 6, 7, 8, 9, and 0, as compared to Roman numerals (I, II, III, IV).

**Arm**

A part of certain typographic characters that projects horizontally or slopes upward. *See also* apex and stem.

**Ascender**

The part of certain lowercase letters (b, h, t) that extends above most other lowercase letters.

**Ascender line**

*See* cap line.

**Asterisk**

A star-like symbol often used to indicate a footnote.

**Author's alteration**

A change made by an author on a typeset proof. *See also* dirty proof

**Author's proof**

A typeset proof made for the author's critique. *See also* proof.

**Automated composition**

Any typesetting method incorporating efficiencies associated with automated prepress technology.

**Autopositive**

Photographic reproduction materials that yield direct reproductions (black for black, white for white) of original camera copy, without the use of an intermediate negative image.

**Backbone**

That part of a book that connects the front and back covers. The backbone is also called the spine.

**Back matter**

The appendixes, glossary, bibliography (references), and index; also called end matter.

**Backslant**

Any of a class of typefaces with characters that lean to the left of perpendicular, as opposed to right-leaning italics.

**Bad break**

In page layout, the misleading or awkward placement of copy. A heading at the end of a column or page is a bad break. Others include words hyphenated between pages and fewer than two lines of a paragraph at the start or end of a page or column. *See also* widow and orphan.

**Banner**

A prominent display of large type.

**Bar**

The crossing stroke of certain typographic characters.

**Baseline**

In typography, an imaginary line on which the letters in a line sit.

**Baseline deflection**

A typesetter capability allowing a character or symbol to be set above or below a baseline; also referred to as jump.

**Basis weight**

Weight in pounds of 500 sheets (ream) of paper cut to a given standard size.

**Bibliography**

The list of references.

**Blackout**

A black, red, or amber area on a mechanical or overlay having the exact position size, and shape of a halftone that will later be stripped into the window thus formed on the line negative.

**Bleed**

Part of the printing area that intentionally runs off one or more edges of a page. Any margin between the printed image and the edge of the trimmed sheet is eliminated by trimming off part of the printed area. The photo or area that will bleed must extend at least  $\frac{1}{8}$  inch beyond the trim edge of the page.

**Blind folio**

A page without a printed page number, as in the opening pages of many books.

**Blowup**

A photographic enlargement.

**Body copy.**

Regular text, as opposed to copy used for charts, tables, and other graphics, usually 9 to 12 points.

**Body size**

The point size of type, usually measured from ascender to descender. *See also* ascender, descender, and point size.

**Body type**

Type used for the main text of a printed piece or publication; also called text.

**Boldface type**

Type that has thicker line strokes resulting in the type looking darker than the regular or medium face type. *See also* lightface type and medium type.

**Border**

Plain or decorative lines or ornaments used to outline areas on pages.

**Box**

A rectangular frame of ruled lines around typeset matter or illustrations.

**Boxed head**

A headline or title within a box.

**Box in**

To place in a box.

**Broadside**

A large printed sheet folded for mailing; a page positioned in a publication with the text parallel to the binding side. Also referred to as horizontal placement.

**Bromide**

*See* repro stat.

**Bullet**

A solid round ornament used to mark an item in an enumerated list. *See also* ornament.

**Butted lines**

Two typeset line sections joined together to form a line length longer than the typesetter's normal capacity.

**Callout**

Numbers, nomenclature, or letters that key parts of illustrations to a legend or explanation; words displayed next to a column to summarize or cue ideas discussed in the text; words, numbers, phrases, or symbols within a graphic that refer readers to a specific part of the graphic. *See also* sidehead.

**Camera-ready copy**

Text prepared for reproduction. *See also* pasteup.

**Camera-ready material**

A generic term that includes copy, artwork, pasteups, and mechanicals ready to be photographed for reproduction.



**Camera-ready mechanical**

Mounting boards or paper on which type, art, and other elements are pasted in the exact position and usually in the same size as they are to appear in final print. Generally more complicated than a pasteup, involving overlays for color and tint additions that are prepared in register with the base art. Carefully scaled blackouts, or windows, are substituted for halftones which will be shot separately. See also halftone and pasteup.

**Cap line**

In type design, the uppermost limit of capitals (and sometimes ascenders); one of the four typographic lines of reference. In some typefaces the ascenders are higher or lower than the capitals, adding a fifth line of reference.

**Caps**

Shortened word for capital letters.

**Caps and small caps**

The type style that substitutes small capital letters for those that would normally be lower-cased. Copy so marked is generally set with the first letter in each (or each important) word a capital and the others in small caps of the same face.

**Caption**

The title or heading for a graphic.

**Caret**

A proofreader's notation used to indicate where corrections or additional material is to be inserted.

**Cassette**

In phototypesetters, one of two storage containers for photographic material. The supply cassette houses unexposed material, and the take-up cassette receives exposed material.

**Change font**

A typesetter command for a change of typeface; for example, from roman to italic or medium to bold.

**Character**

Any letter, number, or symbol, such as a question mark, dollar sign, or period.

**Character casting**

The process of counting (usually by line average) the characters and spaces in a manuscript to determine the area they will occupy when typeset. See also character count.

**Character count**

The count of typescript letters and spaces in determining the space needed for fitting typeset copy; the average number of characters per pica for a given font. See also character casting.

**Character pitch**

The number of characters per inch that can be composed on a fixed-space typewriter. A pica typewriter is 10 pitch, an elite is 12 pitch.

**Characters per line**

The number of characters per pica multiplied by the line length.

**Characters per page**

The number of characters per line multiplied by the number of lines on a page.

**Characters per second**

Used to measure typesetting speeds.

**Clean proof**

A proof with few or no errors.

**Close up**

Proofreader command used to inform the typesetter to reduce leading or letterspacing. See also leading and letterspacing.

**Cold type**

Output from a direct-impression typesetter or phototypesetter.

**Collate**

The operation of gathering or organizing sheets or signatures into booklets or proper sequence. The operation may be done either by hand or machine. Also referred to as gathering.

**Color separation**

The use of a different overlay for each color, as opposed to camera separation.

**Column**

A section of text consisting of lines of type arranged one under another, having flush left and right margins when justified.

**Column rule**

A thin vertical rule separating columns of type.

**Command**

A code to direct a computer-driven device (such as a typesetter, editing terminal, or word processor) in executing machine functions.

**Comp**

See comprehensive dummy.

**Composition**

The process of setting type; typeset matter.

**Comprehensive**

See comprehensive dummy.

**Comprehensive dummy**

A designed page-by-page facsimile of a publication, showing margins, areas of type and illustrations, headings and captions, and suggested colors. It is drawn to size, with every item specified or identified (keyed) and with proofs or typeset copy pasted in position. It is used for approval purposes and as a guide for graphics personnel preparing artwork and camera-ready mechanicals. Also referred to as a comp.

**Condensed type**

A narrowed version of a typeface ranging from semicondensed to ultracondensed. Includes more characters per line than the normal typeface.

**Contact printing**

The direct-contact exposure of one photographic material to another. The materials can be both film (film negative to film positive) or film and paper (film negative to paper positive). The size relationship is virtually one-to-one.

**Continuous tone**

A photograph or artwork composed of densities ranging from white, through graduations of gray, to black. A continuous tone image is unlike a line image which consists of only two tones-black and white. Continuous tones cannot ordinarily be directly reproduced by printing, but must first be photomechanically converted to halftones. See also halftone.

**Coordinating draft**

A draft of a document used to gain comments and or approval of a document's subject matter. Reviewers comment on the information, recommend changes, or approve the draft as written.

**Copy**

A manuscript or message to be typeset.

**Copy-edit**

To mark grammatical and stylistic corrections such as spelling, punctuation, or capitalization in a manuscript.

**Copy fitting**

Determining the space needed to accommodate typeset matter.

**Copy holder**

A device, either freestanding or built into a keyboard, for holding manuscript copy during keyboarding.

**Copyright**

Legal protection for ownership of literary property.

**Crop**

To indicate portions of photographs or artwork to be eliminated. See also cropping.

**Crop marks**

Short horizontal and vertical lines placed at the corners of photos or art to define the portion to be printed.

**Cropping**

Eliminating part of a photograph or illustration to be reproduced. See also crop.

**Cross stroke**

Part of a typographic character that cuts horizontally across the stem.

**Cursive**

One of a class of type designs that imitate handwriting but do not have joined letters.

**Cursor**

A place marker on a display screen, usually a flickering square of light or a character underline that indicates where you are on the computer display screen.

**Curve**

Type set on an arc-shaped baseline.

**Cutline**

Text that explains a graphic.

**Dagger**

A typographical symbol used as a reference mark in a footnote.

**Dash**

A punctuation mark indicating a sudden break in thought or a parenthetical element.

**Dash leaders**

A series of closely spaced dashes used to lead a reader's eye across a page.

**Descender**

That portion of a lowercase letter extending below the body of such letters such as g, j, and p. See also ascender.

**Descender line**

In type design, the lowermost line a descender falls to; one of the typographic lines of reference.

**Direct-entry phototypesetting**

See direct-input phototypesetting.

**Direct-input phototypesetting**

A class of phototypesetting systems in which an operating station controls the input and output of a self-contained, automated typesetting device; also called direct-entry phototypesetting.

**Dirty proof**

A proof with many alterations or errors. See also author's alteration and editorial change.

**Disk**

A flat, circular plate similar to a phonograph record, containing a negative film image used as an image master in some second generation phototypesetters; a magnetized platter used as a storage medium.

**Display type**

Type used mostly for prominent banners, headlines, and the like; generally, type sizes larger than 14 points.

**Document development**

A stage in the publications process. For example, preliminary draft, coordinating draft, etc.

**Dot leaders**

A series of closely and equally spaced dots (usually on an em-space body) used to lead a reader's eye across a page.

**Double dagger**

In footnoting, a typographic symbol used as a third order reference mark. Daggers can replace superior figures when there are few notes.

**Drilling**

A means of producing holes in pages, using a rotating drill. Produces an effect similar to punching, except that a rotating drill is used to produce the hole, rather than a metal die. See also punching.

**Dropout**

A halftone in which certain areas—usually highlights—from the original continuous tone photograph or piece of art have been removed by masking or opaquing to show a screenless (no dots) white. See also silhouette halftone.

**Dummy**

A preliminary sketch or layout showing the various design elements in a job; a folded sheet used as an imposition guide. See also layout.

**Duotone**

A two-color halftone print from a monochrome subject. The negative for the dominant color—usually black—is made with more contrast, while that for the second color is flatter. The screens are turned as in process work to prevent moire. See also moire.

**Editorial change**

A change made by an editor on a typeset proof to previously approved copy. See also dirty proof.

**Elite**

The smallest size typewriter type (10-points). Also known as a fixed typewriter spacing system with 12 characters to the inch. See also pitch.

**Em**

The square of the type size being used, so named because the letter M was usually cast as metal type on a square body. Thus, in 10-point type, an em is 10 points wide and 10 points high.

**Em dash**

In typeset, a dash that is one em wide; in typescript, it is indicated by two hyphens.

**En**

One-half the width of an em.

**End matter**

See back matter.

**Expanded type**

A widened version of a typeface, ranging from semiexpanded to ultraexpanded; also referred to as extended.

**Expressed folio**

A printed page number. See also blind folio.

**Extended**

See expanded type.

**Extrabold**

A very heavy type weight. See also boldface type.

**Family of type**

In broad terms, the two major classes of type: Roman and Gothic (serif and sans serif); more commonly, a set of typeface variations based on a single design concept. Each family contains variations such as medium, medium italic, bold, medium condensed, extrabold, and expanded.

**Film processor**

A machine that automatically processes photographic materials.

**Final edited draft**

An editorially correct typewritten draft manuscript.

**Flop**

A negative turned over before printing to create a mirror image.

**Floppy disk**

A magnetically sensitized, coated Mylar disk housed in a protective envelope. The disk holds characters or pages of text that can be randomly accessed. See also disk.

**Flush**

Type set without indentions, aligned with the left edge (flush left) or the right edge (flush right) of the line measure, or both. See also justified column.

**Flush paragraph**

An unindented paragraph.

**Flyleaf**

The blank page found at the beginning and/or end of some books. A front flyleaf is not permitted in Army-wide doctrinal and training literature.

**Fold marks**

Short marks placed in the margins of a printed piece to show where folds should be made.

**Foldout**

A horizontally extended page that must be folded at least once to fit within the regular page width.

**Folio**

In printing, a sheet of paper folded once to make four pages; a page number. See also blind folio and expressed folio.

**Font**

A complete assortment of all the capital and lowercase letters, numerals, punctuation marks, and symbols of a particular style and size of typeface.

**Foreword**

A statement in the front matter of a publication written and signed by someone other than the author or editor. The foreword is placed before the table of contents.

**Format**

The appearance and basic plan for visual and typographic layout of a publication, including size, binding, and treatment of graphics.

**Foundry type**

Individually cast pieces of metal type for hand composition.

**Front matter**

The front portion of a publication, consisting of the foreword, title page, preface, table of contents, alternative contents, and introduction. This material is sometimes called the administrative part of the publication.

**Function code**

A code that directs the operation of a machine or system, as opposed to one that specifies character output.

**Function key**

A key which causes a predefined function to be requested of the system.

**Galleys**

Typeset matter or proofs of typeset matter not yet made up into pages. The term originally referred to both the long metal trays used to store composed metal type and the proofs pulled from the type they held.

**Gathering**

See collate.

**Graphic**

A written, printed, or electronically displayed character, symbol, or drawing; a pictorial display of information.

**Graphic border**

An outline that forms a frame around a graphic.

**Gutter**

The blank space or inner margin of a page from the printing area to the binding or centerfold; also, the white space between two columns of type.

**Hairline**

The thinnest rule a typesetting machine can produce.

**Halftone**

A screened reproduction of continuous tone material such as a photograph or wash drawing, in which the middle tones are reproduced by dots of varying size, thus enabling reproduction by printing. See also continuous tone.

**Halftone screen**

A piece of optically perfect glass or film containing hundreds of ruled horizontal and vertical opaque lines. It is called halftone because the lines take up about one-half the total area of the screen. The screen is used as part of the process to convert continuous tone material into halftone or screened reproductions. See also halftone.

**Hand composition**

The process of manually setting metal type.

**Hanging indent**

A paragraphing style with a full measure first line and indented succeeding lines.

**Hard copy**

Output from a typewriter, matrix proofer, or line printer, sometimes supplied instead of typeset material as a preliminary proof; printed copy of machine output, for example, manuscript pages, drawings, reports, listings, publications.

**Hardware**

Equipment used in computing and phototypesetting, as opposed to programming materials or software.

**Hardwire**

A permanent connection, often by wire cables, between two machines.

**Head, heading**

The title of a chapter, section, paragraph, or subparagraph. Headings are set so as to be distinguished from body copy and to clearly show subordination.

**Headline**

A display line at the top of a page or column. Primarily in newspapers.

**Horizontal spacing**

Fixed or variable distances between words and characters in a line.

**Hot-metal typesetting**

Any typesetting process using type cast from molten lead, as in Linotype and Monotype machines. See also hot type.

**Hot type**

The type or impression of type cast in a mold or matrix from molten metal. Hot type is associated with hand-set type, but primarily identified with typesetting machines such as Linotype, Ludlow, Intertype, and Monotype. The term is technically inaccurate, as the type is only hot during and immediately after casting. See also hot-metal typesetting.

**House style**

In such matters as punctuation and capitalization, the usage preferred by a publishing house.

**Hung punctuation**

Punctuation at the beginning or end of a line set outside the line measure.

**Hyphenation**

The process of dividing between syllables typeset words that would otherwise exceed a line measure.

**Hyphenless justification**

Justifying lines by wordspacing, letterspacing, or both, without hyphenating.

**Idiot tape**

Perforated or magnetic tape with no end-of-line information. Idiot tapes must be processed by a computer system or typesetter that can make hyphenation and justification decisions; also called endless tape, running tape, uneducated tape, and unjustified tape.

**Illustration**

A print, drawing, or picture of any kind.

**Image area**

The area of an offset plate that will appear on the printed sheet; the area within the trim lines.

**Impact printer**

A printer in which printing is the result of mechanical impacts. See also strike-on typesetting.

**Indentation**

White space at the beginning or end of a line of type, often used to visually organize information. Single or multiple em spaces are most often used for paragraph indentions.

**Inferior characters**

Characters smaller than primary text, set below the text baseline. See also subscript.

**Initial**

A large single character, usually a capital, and sometimes ornate, used for contrast or decoration at the beginning of a chapter or paragraph.

**Inserting**

The operation of adding pages to a booklet during binding. This may be a hand operation or may be performed by machine. Hand inserting is sometimes known as tipping.

**Introduction**

Preliminary information such as historical background. The introduction to the publication is often placed between the table of contents and the first chapter. Introductions may also appear at the beginning of each chapter.

**Italic**

One of a class of type forms that slope to the right from the perpendicular.

**Italic type**

Letters that are slanted to the right rather than vertical. Italics are used for emphasis or distinction. See also Roman type.

**Justification**

Adding space between words or letters to make a line of type fill a specified measure.

**Justified column**

A column having lines of equal length set flush at the left and right margins.

**Justify**

To space out characters and words in lines so there is a fixed length; all type starts and ends within column bounds. See also justification.

**Kern**

The portion of a letter such as the tail of the capital Q that extends beyond its body; the adjusted spacing between letters to compensate for apparent gaps; the design of graphic characters such that their kerns overlap.

**Kerning**

Closer than normal character spacing to improve the appearance of typeset matter.

**Key**

A letter, number, or other symbol used to identify artwork or to relate separate pieces of material to one another.

**Key letters**

The corresponding letters inscribed on both the manuscript copy and the layout to show where the copy goes.

**Keying**

The use of letters or figures to refer parts of a dummy to copy sections, or parts of a manuscript to a VIS's instruction.

**Key line**

Inked outlines on artwork that serve as guidelines for color separation.

**Laser**

An acronym for light amplification by stimulation of emitted radiation; an intense beam of light used in some optical character reader devices and as a phototypesetter exposure source; an electromagnetic source capable of producing infrared and visible light. See also laser printer.

**Laser printer**

A type of nonimpact printer that combines laser beams and electrophotographic technology to form images on paper.

**Laundry list**

A series of items presented vertically rather than in sentence form or horizontally.

**Layout**

A sketch or plan approximating the appearance of a proposed printed piece showing all elements in position; the basic design for elements of a publication such as pages and cover.

**Leaders**

A series of equally spaced dots or dashes used to guide a reader's gaze across a page from one item to another.



**Leading**

The space between lines of type, measured and expressed in points; space added between lines of type for easier reading and sometimes to vertically justify a page. Also called linespacing.

**Legend**

An explanation attached to a graphic; a key to the symbols and alternate word forms used in a graphic.

**Legibility**

The characteristics of a printed piece that determines how well and how fast the individual letters and words can be distinguished.

**Letter spacing**

Inserting space between letters to justify a new line or improve its appearance.

**Lightface type**

Type that has thin line strokes causing a light, open appearance; a font less dark or bold than a medium font of the same family. See also boldface type and medium type.

**Line copy**

Any artwork, typography, or other copy which can be reproduced for printing without using a halftone screen.

**Line drawing**

A drawing without any middle tones. Shading, if used, is created with black and white crosshatched lines or with screen tint overlays. See also line copy.

**Line spacing**

See leading.

**Logo**

Logotype; a trademark, signature, or other graphic device for identifying a company, an organization, or a product.

**Manuscript**

Copy that is to be typeset; handwritten or typewritten pages created by an author and ready to be edited or typeset.

**Margin**

White space above, below, or beside text or illustrations on a page.

**Markup**

The process of writing typographic instructions on a manuscript before typesetting.

**Mask**

An opaque area on a transparent overlay, used to cover various part of artwork to be printed.

**Medium type**

Type with a proportionate amount of thin and thick line strokes normally used as body copy. See also lightface type and boldface type.

**Moire**

An undesirable checkered pattern—caused by parallel mesh dots—that occurs when a halftone or screened print is rephotographed through another halftone screen.

**Montage**

An assortment of photos mounted on a common background; a composite picture created by printing two or more negatives on a single sheet of photographic paper; a single layout or image made from several different photographs or pieces of artwork.

**Mortise**

In graphics, a box or ornamental border used to surround copy or other material in order to emphasize, isolate, or enhance it.

**Mutt**

An em space; a term used to avoid confusion between the similar sounding em and en.

**Negative**

A reproduced image that reverses the black and white values of the original; a photographic film image in which the density values are reversed.

**Nonproportional type**

Type characters allotted equal horizontal space, as on office typewriters.

**Nut**

An en space; a term used to avoid confusion between the similar-sounding en and em. See also mutt.

**Off-line**

A device that is part of an automated system but not connected to the system by cable. See also on-line.

**Offset lithography**

A printing process in which the image is transferred from a plate cylinder to a rubber blanket cylinder and then to paper.

**On-line**

A device connected by cable or wire to other devices in an automated system. See also off-line.

**Opaque**

In offset lithographic stripping, a dense water- or alcohol-soluble colorant used to cover pinholes and other nonimage areas on negatives; also used to silhouette halftones (eliminate unwanted background areas).

**Optical character reader**

A device that reads and converts typescript to digitized impulses for storage on magnetic disks used in phototypesetters or word processors.

**Organization**

The arrangement of text in a publication, based on a logical sequence of ideas.

**Ornament**

A decorative device. Bullets and boxes are among the functional ornaments that appear in Army-wide doctrinal and training publications. See also bullet.

**Orphan**

A line of less than full measure at the top of a page. See also widow.

**Outline halftone**

See silhouette halftone.

**Overburn**

A line negative, usually of type, printed over halftone or screened areas on a photoengraving or an offset plate; also called a surprint.

**Overlay**

A transparent film—preferably a stable-base film such as acetate—on which artwork, copy, or screen areas can be drawn or otherwise affixed in register with the base art, providing a means of separating the colors or elements to be superimposed; a tissue sheet placed over artwork or a mechanical to protect it and carry written instructions, usually called a protective overlay.

**Overprint**

Printing over an area that has been printed—for effect, emphasis, or additional information.

**Padding**

In bindery operations, padding is the act of applying a cement or adhesive to the edge of a group of pages to form a pad. After the cement dries, the pages are cut apart to form individual pads.

**Pantone Matching System**

An industrywide system that provides the means for achieving color coordination and color communication between designer and printer. The system comprises 500 ink colors that can be perfectly matched when specified by their assigned numbers.

**Paper print**

See repro stat.

**Paragraph mark**

A symbol indicating the start of a paragraph.

**Pasteup**

A mounting board or paper on which type, art, and other elements are pasted in the exact position and usually in the same size as they are to appear in final print. Although the term is used interchangeably with mechanical, pasteups generally are less complex than CRMs.

**Pencil dummy**

A rough, page-by-page penciled layout of a proposed publication. A pencil dummy may consist primarily or solely of notes specifying typefaces, leading, spacing, and information about graphics.

**Perfect binding**

A method of binding in which pages are held together and fixed to the cover by means of flexible adhesive.

**Photocomposition**

Typography for pages or ads completely made-up by photographic typesetting means. Photocomposers differ from phototypesetters in having more sophisticated formatting of the final output.

**Photolettering**

Setting display type by photographic means. Photolettering machines are categorized by character selection method (manual or keyboard) and by exposure method (projection or contact). A further distinction is made between visual machines that let the operator see type (or a representation of it) as it is set and “blind” machines that do not.

**Phototypesetter**

A device that sets type images by the controlled exposure of light to photographic film or paper. Various phototypesetters are available and can set a range of type sizes (some including display sizes) and any number of typefaces from one to several hundred.

**Pica**

A basic typographic unit of measure; most often used to express line length—one pica equals 12 points, and six picas equal approximately 1 inch; a fixed-space typewriter system with 10 characters per inch. See also pitch.

**Pitch**

On a fixed-space typewriter, the number of characters per linear inch. Elite type provides 12 characters per inch (12 pitch); pica type provides 10 (10 pitch).

**Point**

A basic typographic unit of measure used to describe type size and the vertical distance, or leading, between lines of type. There are 12 points to a pica and approximately 72 points to an inch.

**Point size**

The height of a typeface measured in points; point size is also called type size and is usually measured from the ascender line to the descender line.

**Preface**

Preliminary matter that concerns the publication itself rather than its subject matter.

**Proof**

A copy of a typeset job (or a representation of it in the form of line-printer copy, matrix proof, a stat, photomechanical transfer, or other medium) for proofreading. See also author’s proof.

**Proofreading**

Comparing a new version with an older version of the same copy, and marking the errors in the new version. It is done only to material typed or typeset from an older version and needing no changes except for correction of a few errors. Material that has yet to be entirely typed, retyped, or typeset, is an editor's, not a proofreader's responsibility.

**Proportional scale**

A calibrated set of concentric disks for determining the dimensions or proportional relationships in photographic enlargement and reduction.

**Punching**

The operation of producing holes in pages, using a metal punch and die, rather than a rotating drill. See also drilling.

**Ragged left**

Type composed so that all lines are set flush on the right margin but vary in length along the left margin, causing an uneven effect.

**Ragged right**

Type composed so that all lines are flush at the left margin but vary in length along the right margin; also known as unjustified type.

**Raised initial**

A large initial set on the baseline of a first line of text. See also initial and sunken initial.

**Raw copy**

A manuscript or other form of copy to be typeset.

**Raw tape**

Perforated or magnetic tape with no hyphenation, justification, or other typographic information. See also idiot tape.

**Readability**

The ease with which the eye can absorb the message and move along the line. The choice of typeface, size of the letter, spacing between letters and words, amount of leading between lines, width of the line itself, size of the margins around the type block, quality of inking, effect of the printing process used, texture or finish of the paper, color of paper and ink—all are involved in affecting the appearance of the typeface used and in the resulting readability.

**Recto**

The right-hand page of a two page spread as in a book, which always bears an odd number. See also verso.

**Register**

The perfect horizontal and vertical alignment of all components of a printed piece, each in relation to the other. Register starts with the preparation of the original artwork and continues with the positioning of the negatives, printing plates, and paper stock. Although register is always important, it is most critical in color work. Faulty register is frequently caused by using unstable material for art overlays and changing the dimensions of paper stock between color runs.

**Register mark**

A pattern composed of a circle intersected by horizontal and vertical crosslines. These marks are placed on artwork and overlays. Aligning them ensures that overburns and colors will be in register with the base art when it is printed.

**Rendering**

A representation or depiction.

**Repro stat**

Photostats made on paper that has a higher contrast, finer grain, and better dimensional stability than ordinary photostat paper. They are used on paste-ups and mechanicals for reproduction. Also called bromides and paper prints.

**Resin-coated paper**

A photographic paper with a resin-coated base. Resin-coated papers are more permanent and dimensionally stable than the stabilization papers that preceded them.

**Retouch**

Pertains to hand work on a photographic negative or print using pencils, knives, brushes, or airbrushes to remove or disguise defects or to enhance certain portions.

**Reverse leading**

The backward movement of photographic material in a typesetting machine to expose previously unexposed areas; the opposite of film advance.

**Reverse type**

White letters on a black background.

**River**

An irregular white space running down through a text column, usually caused by excessive wordspacing.

**Roman type**

Upright serif letters, as opposed to italic letters or sans serif type.

**Rule**

A straight line in printed matter.

**Runaround**

A column of type with a measure that has been altered to accommodate all or part of an illustration or photograph.

**Run back**

To move material in typeset copy from the beginning of one line back to the end of the line above it; also called run in.

**Run down**

To move material in typeset copy from the end of one line to the beginning of the next line.

**Run-in heading**

A subparagraph title, usually highlighted, and placed as the first word or words in a paragraph.

**Running feet**

In a publication, any repeated items such as the title or chapter name, on the bottom of each page.

**Running head**

A title, publication number, or chapter name repeated at the top of each page.

**Saddle stitch**

A type of binding in which the signature or folios are stapled together along the centerfold.

**Sans serif**

Typeface without serifs. See also serif.

**Schoolbook**

A popular typeface in the serif family of typefaces.

**Script**

A class of typeface designs imitating handwriting and usually having joined characters.

**Scrolling**

The process of positioning a portion of text file onto the display screen for review.

**Search**

A word processing or phototypesetting feature that allows the user to specify a word or set of characters to be searched for throughout a program or file.

**Secondary leading**

An additional leading value that occurs throughout a job. Primary leading is usually that between lines; secondary leading is often used between paragraphs or other blocks of text.

**Separate segment**

A portion of text such as a scenario treated with a different typeface or design format. The content of such copy must be sufficiently different from the rest of the publication to warrant special treatment. See also special segment.

**Serif**

A short stroke across the end of a letter's main stroke. Half-serifs on the horizontal arms of E, L, and T are sometimes called beaks; serifs at the ends of arcs on C, G, and S are sometimes called barbs or cat's ears.

**Set flush**

See flush.

**Set solid**

To set lines of type with no leading so that the point size and body size are the same, as in 10 on 10 or 12 on 12.

**Sewn case-bound book**

A form of binding in which pages are sewn with thread to produce a book, and then inserted in a hard cover.

**Shadow face**

Any of a class of typefaces that appear to cast a shadow.

**Sidehead**

A heading or descriptive phrase placed beside a block of copy. See also callout.

**Side stitch**

A type of binding in which the signatures or pages of a publication are stapled from front to back cover parallel to the backbone edge.

**Signature**

A group of pages that have been printed on both sides of a single sheet of paper and then folded for inclusion in a book. The common number of pages included in signatures are 8, 16, or 32.

**Silhouette halftone**

Halftones in which all detail beyond the central figure or shape are removed (dropout background), leaving a screenless white area; also called an outline halftone.

**Sinkage**

The distance from the top of a page to the point at which the text begins.

**Size range**

The smallest to largest type (in points) a phototypesetter can set.

**Slant**

See solidus.

**Slash**

See solidus.

**Slave**

A functional component of a system that is entirely dependent on another device for control or support.

**Small capitals**

Capital letters as high as the x height of a font.

**Soft sewn cover binding**

A binding method in which pages of a book are bound together, using a soft thread binding. No hard cover is applied to protect pages.

**Solidus**

A punctuation mark (/), most commonly called a diagonal, virgule, slash, or slant. It means 'or,' 'and or' or 'per.' Used between parts of a fraction (1/2) or to unify certain words (and/or).

**Sort**

The arrangement of data elements into a predetermined order, such as alphabetical order.

**Spacing out**

Justifying a line of type by distributing the space at the end of a short line between words in the line.

**Special segment**

A portion of text such as a scenario or a dialogue that differs from both normal text and graphics. To stand apart, special segments may be set in a different typeface with different leading and different indentation. See also separate segment.

**Spine**

See backbone.

**SS**

An abbreviation for same size which is placed on artwork or other material to be reproduced to indicate that no reduction or enlargement is wanted; interchangeable with the notation 100 percent, which is used when size changes are noted by percentage figures.

**Stack**

Single letters or lines of type set one on the other.

**Stand-alone terminal**

An automated input or editing device that is not on-line or otherwise wired to complementary equipment as opposed to slave. See also slave.

**Stapling**

The operation of applying a preformed metal fastener to bind sheets together. Stapling differs from stitching in that the fasteners are preformed.

**Stem**

A major vertical stroke on a typographic character.

**Step and repeat**

A single character or image repeatedly set at equidistant steps to produce a border, a piece of decorative typography, or any design with a repeated image.

**Stet**

A proofreader's term meaning let it stand or ignore requested correction.

**Stitching**

The operation of applying a metal fastener to hold pages of a pamphlet or book together. In saddle stitch, the binding wire is applied to the gutter of the booklet. In side stitch, the fastener is applied on the edge of the booklet.

**Strike-on typesetting**

Typographic composition produced by a typewriter designed for typesetting.

**Stripping**

The process of affixing photographic film negatives or positives onto carrier sheets to produce a flat for platemaking.

**Stymie**

A typeface that is characterized by blocked or square serifs.

**Subscript**

A symbol, number, or character, smaller than the primary text, printed below and to the right of another character; also called the inferior. See also superscript and inferior characters.

**Sunken initial**

A large initial set beneath the first baseline of the text. See also raised initial.

**Superior characters**

See superscript.

**Superscript**

A symbol, number, or character, smaller than the primary type and positioned above the x height of text characters; most often used to mark footnotes; also called superior characters or superior figures. See also subscript.

**Surpint**

See overburn.

**Tell-tale**

A running-head notation indicating the first entry on the verso page and the last entry on the recto page, used to help the reader find items in catalogs, directories, and other long lists.

**Terminal**

A stand-alone or on-line computer device used to input and output data.

**Text**

See body type.

**Thumbnail**

A small drawing of a potential layout, used as a preliminary to the design of a comprehensive dummy; also called roughs.

**Tight line**

A typeset line with a dense appearance due to minimum wordspacing.

**Tint**

Line copy screened to a particular even value of the printing color, such as 20 percent of the solid color.

**Tint block**

A plain, solid color area screened to a particular value of the printing color. See also tint.

**Transfer type**

Alphanumeric characters, symbols, and artwork carried on a plastic sheet for transfer to another surface by burnishing.

**Transposition**

The improper placement of adjacent characters, words, or lines during typesetting or typewriting.

**Trim lines**

The short horizontal and vertical lines placed and printed at the corners of a camera-ready mechanical or pasteup page to indicate the outside edges of the finished page.

**Trim marks**

See trim lines.

**Trimming**

A bindery operation in which excess stock is trimmed from around a page to produce a page with the desired final dimensions.

**Trim size**

The dimensions of a finished printed and trimmed page.

**Type element**

In direct-impression typesetters, a piece of metal or plastic with a relief typeface font. Elements can be quickly changed to alter type sizes and styles.

**Typeface**

All characters of a particular design of type.



**Type family**

A set of type design variations on a basic alphabetic style; these can include boldface, italic, condensed, expanded, and others.

**Typescript**

Copy produced on a typewriter or similar impact printer.

**Type size**

Measurement in points of the height of a character in a font. See also point size.

**Type style**

Refers to weight of type such as light, medium, or bold, to include italics. See also weight.

**Typo**

Short form for a typographical error.

**Typography**

The process of selecting, arranging, and using type.

**Underline**

See underscore.

**Underscore**

A rule set for emphasis below a word or phrase; also called underline.

**Unjustified column**

See ragged right.

**Upper and lower case**

A term derived from the layout of the first type cases, with capitals in the top box (upper case) and small letters in the bottom box (lower case) or compartments.

**Velox**

A photographic paper print made from a course screened negative.

**Verso**

The left-hand page of a two-page spread, as in a book; always bears an even number. Also called reverso. See also recto.

**Video display terminal**

A computer device with a keyboard and cathode ray tube used to edit and correct input before or after typesetting.

**Vignette**

An illustration in which the background fades gradually toward its edges until it is completely absorbed by the paper. Vignetting usually applies to photographs.

**Virgule**

See solidus.

**Visual**

A rough drawing or layout of an illustration, chart, or graph to be used as a guide in producing final artwork.

**Visual center**

The apparent center of a page, somewhat above the geometric center.

**Waxer**

A machine for applying a thin layer of hot adhesive wax to materials assembled in pasteup and film makeup. See pasteup.

**Weight**

The relative thickness, heaviness, or blackness of typographic characters, from light to extra bold. See also type style.

**White space**

An area on a printed piece not covered by type or other graphic images.

**Widow**

The last line of a paragraph composed of a single word or part of a word. See also bad break and orphan.

**Window**

The transparent opening in a line negative where a halftone will later be stripped in; the openings made on goldenrod and other stripping materials to reveal image areas. The openings correspond to the mask or blackout on the mechanical or overlay from which the line negative was made.

**Word processing**

A collective activity through which information is transformed into typewritten form using automated equipment, defined procedures, and trained operators.

**Word spacing**

Space between typeset or typewritten words; adjusting such space.

**Wrong font**

An error in which a character from a different font appears in composition or in which a large part of a job is set in the wrong font.

**X height**

The height of lowercase letters without ascenders or descenders; x heights of various typefaces may vary within one point size and influence both the apparent (or face) size of a typeface and its relative legibility.

**Section III****Special Abbreviations and Terms**

This section contains no entries.

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