THE OUTPUT PROCESSOR USERS' GUIDE

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AUGMENT™ TYMSHARE OFFICE INFORMATION SYSTEMS
AUGMENTATION RESOURCES CENTER TYMSHARE, INC. CUPERTINO, CALIFORNIA

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The second revision of the Output Processor Users' Guide was prepared by Jeanne Beck, Caroline Rose, and Nina Zolotow with assistance from the staff of the Augmentation Resources Center. It was prepared and composed for printing with AUGMENT at the Augmentation Resources Center of Tymshare, Inc.

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"A relatively large area of the human judgements called upon for type composition can be handled at inhuman speeds by an electronic brain, removing drudgery that is associated with any repetitive process. Certain judgements, however, can not be made by mechanical means. These are the ones that can lift a piece of printing above the merely adequate."

Warren Chappell
A Short History of the Printed Word

PREFACE

This guide will help you use the AUGMENT Output Processor. The body of the document consists of the Output Processor directive descriptions. We have grouped the directives by function so you can look them up under a subject heading or read through related groups. There is a definition for each directive along with the range of values you can specify. While the guide is not intended to teach you to use the Output Processor, the Introduction and the appendices contain helpful information. The Introduction is a conceptual discussion of the Output Processor that includes general background information. The Glossary defines the terms that are used in this guide. Appendix I includes diagrams and instructions on how to use the directives to format a document. Appendix II, Appendix III, and Appendix IV contain samples of the various type faces for the photocomposition devices currently available to AUGMENT users.

If you are an inexperienced Output Processor user, we recommend that you begin by reading the Introduction to learn about the different types of directives and how to use them. The definitions in the Glossary will greatly aid your understanding of the individual directive descriptions. Unless you plan to use a simple format, it will be extremely helpful for you to examine the page layout diagram and the related discussion in Appendix I to learn how various page layout directives interact.

If you are an experienced Output Processor user, you can simply use the alphabetical index at the end of the guide to locate specific directive descriptions. Note, however, that the Introduction has been completely rewritten since the last edition of the guide and contains new information that may be of interest.

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INTRODUCTION

The Output Processor is a program you can use to make computer files ready for printing. When you give the AUGMENT command to send it a file for printing, the Output Processor automatically applies an initial format. It breaks the text into pages, numbers the pages, sets up margins, and so on. You alter and control this initial format by inserting Output Processor directives into your file.

Output Processor directives are instructions that control the printed appearance of an individual piece of text, a statement, a page, or an entire document. They consist of easily recognized characters and can be inserted any place in a file. Normally every directive is preceded by a period and followed by a semicolon, and the directive name begins with a capital letter. For example, .Gcr; is a commonly used directive that will generate a return character (end of line). Directives do not appear as text or take up any space when you print a file by sending it to the Output Processor. When you use an AUGMENT printing command that does not send your file to the Output Processor, directives are ignored as instructions and are printed as ordinary text.

AUGMENT files can be printed on several different types of devices: line printers, typewriter terminals, electrostatic printers, and photocomposition devices. The type of format you choose for a document and the directives you will use to create it depend on the kind of output device you plan to use and the type of document you want to produce. The Output Processor has a wide range of capabilities, from simple one-time effects, such as centering a line, to complex phototypesetting based on the outline structure of AUGMENT files, such as setting all third-level statements in a specified type face. You can use the Output Processor to print out a simple one-page letter on a typewriter terminal or to phototypeset a 300-page textbook, complete with a cover page, table of contents, illustrations, and so on.

We recommend that you become experienced with using simple formats for the line printer or typewriter terminal before attempting to use the phototypesetting directives. When you are ready to format a document to be phototypeset, please contact your client coordinator at Augmentation Resources Center (ARC). He or she will help you choose an appropriate photocomposition vendor and help make arrangements for paying for their typesetting services.

How To Use The Output Processor For Line Printer Or Typewriter Terminal

Planning Your Format

Directives give you the ability to control the entire layout of a page. You can specify a set of standard conventions to take effect throughout the entire document, such as setting the size of the right margin, and you can also make individual changes on particular pages, such as leaving room for a diagram. The page layout diagram in Appendix I shows the directives that control the overall page layout. It is extremely helpful to plan exactly how you want your page to look before you begin inserting directives into a file.

When formatting for a line printer or typewriter terminal, the Output Processor calculates the dimensions of a page by counting characters and lines, just as you do when using a typewriter. On most line printers and typewriter terminals, there are 10 characters per horizontal inch and 6 lines per vertical inch. This means that if you set the right margin to 65, the Output Processor will print up to 65 characters (including blank spaces) or 6 1/2 inches of text and then move on to the next line. If you specify that two blank lines should follow a particular statement, the Output Processor will skip two lines of text or 1/3 inch before printing the next statement.

Note: Although most line printers and typewriter terminals print 10 characters to the inch, some high-quality typewriter terminals provide the option of printing 12 characters to the horizontal inch (12 pitch). Because the Output Processor measures characters and not inches, if you print at 12 pitch with a right margin of 65, the Output Processor will print 65 characters or 5.4 inches. If you plan to print at 12 pitch, you should figure your page dimensions accordingly.

When you change horizontal measurements to suit 12 pitch, it will not affect the vertical dimensions of the page. However, some high-quality printers have a separate option to control the number of lines printed for every vertical inch. On these devices, you can choose between 6 and 8 lines per vertical inch. If you set your top margin to 6 and print with the standard 6 lines per inch, the top margin will be equal to 6 lines or 1 inch. If you set your top margin to 6 and print at 8 lines per inch, the top margin will be equal to 6 lines or .75 inches. If you plan to print with 8 lines per vertical inch, be sure to adjust your page dimensions to compensate. Vertical dimensions are controlled separately and will not affect the horizontal dimensions.

You should understand that the Output Processor does not lay out a page by printing specific pieces of text at specific places on the page. The vertical position of one section of text, such as the first line of body text, is often determined by the position of another section of text, such as a running head or header at the top of the page. For example, if you set the top margin to 3, specify a header that takes up one line, and set the space between the header and the top of the body text to 4, the first line of body text will be printed on line 9 of the page. If you alter the size of something on a page, the Output Processor will compensate by moving or expanding something else to take up the space. For example, if you changed the header to be 2 lines long, the first line of body text would begin on line 10. If you took out the header entirely, the first line of body text would begin on line 4.

Horizontal measurements depend on the left margin base, the Output Processor's absolute margin from which most horizontal measurements are calculated. Nothing can be printed to the left of the left margin base, and if you change the position of the left margin base, all other horizontal margins will be moved equivalently. However, if you change any horizontal measurement except the left margin base, the Output Processor will not adjust the other horizontal measurements to compensate. For example, if your right margin is 65 and if you increase the left margin from 5 to 10, the right margin will remain 65, and the lines of text will now be 5 characters shorter.

By studying the page layout diagram in Appendix I and by gaining experience with how various directives interact, you can learn to accurately control the position of every element on the page.

When you plan the layout of your page, remember that you are not starting with a blank page. The Output Processor uses an initial format and if you want to change one of the elements or dimensions you have to do so specifically. Many times, you may wish to completely eliminate or "turn off" something that appears in the standard format, for example, the footer (page number) at the bottom of the page. There are directives that switch various page elements "on" or "off". Where appropriate,

there is an initial value for what each directive controls; for example, the initial value for the top margin is 3. To see the Output Processor's initial format, send it a file that does not contain directives. You can find out the initial value for individual directives by looking them up in the directive descriptions in this guide.

With the Output Processor, you can frequently control complex formats for a long document with only a few directives. To do so, you specify format according to the outline structure of your document. For example, if you wish to start every section of a report on a new page and each section is a separate branch in an AUGMENT file, you can use the directive Plev=1 to say "start a new page at every level 1 statement". Of course, you can use a one-time directive at each place in the document where you want to start a new page (for example, the directive Pes means "start a new page at the end of this statement"), but it is worth your while to work with a consistent, well-structured file. Using hierarchical directives makes it easier to create a format and easier to change it.

Using Directives

After you have planned how you want your document to look, use the directive descriptions and the alphabetical index in this guide to find the appropriate directives to control the format. For online information about directives and access to lists of directives grouped by function, type "h" to reach Help and then "directives" followed by <OK>. You can also use Help to find out about individual directives. Type "h" and then the word "directive" followed by a space and the directive name. Follow with <OK>.

Before you start entering directives into your file, use the Update command to preserve a version of your document without directives. Since many directives take effect after the line, statement, or page in which they appear in the file, the directives that you use to control the format of the document as a whole can be inserted at the beginning of the file in the origin statement; use the Insert command to type in the directives. Putting directives in the origin statement ensures that they will take effect for statement 1 if you begin printing from the beginning of the file. The directives will control the format of your entire file unless you change them or turn them off by inserting new directives at a later point. So that page 1 of your document will begin with statement 1, we recommend that you include directives to print the origin statement on a page by itself and set the number of that page to 0; you can do this by using the directives Pes and Pn=0.

Many directives consist of two parts: the name of the directive and the value or values that you assign. In the directive Ifirst=n, "Ifirst" is the name of the directive and the letter "n" means that you can type a number following the equal sign. If you put in the number 5, the first line of every statement will be indented 5 characters. In this guide, we often use symbols (like "n") or lower case words to stand for the type of values you can specify. In some directives you can omit the value and the Output Processor will use an "assumed" value. For example, if you use the Gcr directive without a value, the assumed value is 1, i.e., it will generate one return character. The assumed values for directives that have them are listed in the directive descriptions.

In some directives the value is expressed by a word. Several directives are "switches" and simply accept the value of "On" or "Off". Other directives define some text to be printed by enclosing the text within double quote marks. The types of values that can be set with each directive are clearly indicated in the directive descriptions in this guide.

You can use one directive to specify the value for another directive when appropriate. (The value of a directive is always equal to whatever you set it to most recently, or, if you did not set it, it is equal to the initial value for that directive.) You can also use simple arithmetic to combine the values of one or more directives and numbers. For example, you could set Rm=65 and Brm=Rm-2. The right margin for the body text (set by Brm) will then be 63, two characters less than the right margin. If you use a directive for a value, do not include directive delimiters.

A directive can be included within a directive that defines text to be printed. For example, you can define a header to be H="Draft.Split;Draft". The Split directive will align the text to its left on the left margin and the text to its right on the right margin. In this case, because you want the directive that is included within the H directive to be executed, you include the delimiters.

Sometimes the options for a directive are expressed as "intervals". For example, in the directive Snfshow=intervals, "intervals" indicates that you can show right statement numbers for one or more levels. Rather than being limited to a single value, you have the option of specifying a range of values. For example, you could use the Snfshow directive to print right statement numbers for only statements at levels less than or equal to 4, or for only those at levels between 5 and 8. The definitions of the symbols you can use to express "intervals" are listed in this guide, under the description of the appropriate individual directive.

Some directives work in pairs; one specifies which statements will be affected and the other determines how the affected statements will be formatted. An example is the pair of level positioning directives, Pxpshow=intervals and Pxp[level]=n. The first of the pair enables you to specify which level or levels you want to position; for example, Pxpshow=1 means that you will position level 1 statements only. The second enables you to specify how the statements at that level will be positioned; for example, Pxp[1]=3 means that the level 1 statements will be centered.

After you have finished inserting into the origin statement the directives to control the overall format of your document, you can make special adjustments to particular parts of your document. For example, you can center an entire statement or force a new page. Various directives take effect at different times, according to the logic of what they do. Some take effect immediately and some in the next line, statement, or page; this affects where you should insert them in your file. Check the directive descriptions to find out when a directive takes effect.

Type in directives carefully. A directive that is not preceded by a period and ended with a semicolon or one that contains mistyped characters will not be followed as a directive but will be printed as ordinary text. Use AUGMENT editing commands to correct typing errors. If you type in a directive correctly but specify an inappropriate value that the Output Processor cannot execute, the directive will not be followed and will be printed as text.

Printing The Document

When you have finished formatting your file, you can print it to see the effect of the directives you used. Note, however, that the viewspecs you have in force when you send your file to the Output Processor may affect the format of your document. The viewspecs that control content analyzers, blank lines, left and right statement numbers, statement names, and statement signatures can all be counteracted with special directives. Level, line, and branch clipping viewspecs will always remain in effect, so make sure that you show all the levels, lines, and branches you want to print.

The Output Processor will ignore the directives (as well as the text) in the statements before the statement at which you begin printing. Therefore, if you want the directives in the origin statement to be in effect when you print your file, you must begin printing from the origin statement. If you only want to print part of your document and still retain the overall format defined in the origin statement, there are directives that enable you to print limited sections. These directives are described in the "Printing" section of the directive descriptions in this guide.

How To Use The Output Processor For Computer Photocomposition

Photocomposition or phototypesetting is the process of photographically casting type to produce proofs or camera-ready copy. You can use an AUGMENT command to format a file to be composed on one of the four photocomposition devices currently available to AUGMENT users, the Videocomp 500, the Videocomp 800, the COMP80, and the Singer 6000.

Using a photocomposition device to create camera-ready copy provides several advantages. The photocomposition device produces very high-quality characters; the letters are sharper and more legible than typewriter characters, and the result is a cleaner, more professional looking document. The Output Processor provides a wider range of formatting capabilities for photocomposition than for line printer or typewriter terminal. For example, the user can choose between several proportionally-spaced type faces, with bold and Italic variations, and specify up to four columns on a page. Proportional type makes a legible and attractive document and saves space. Up to 40 percent more text will fit on a page in a given type height of proportional type than in the same type height of monospaced type. Photocomposition directives provide much finer control of the page. Page dimensions can be specified in thousandths of an inch, thousandths of a centimeter, or points (1/72 of an inch).

Photocomposition is more expensive than line printer or typewriter terminal printing and the process takes longer. It is impractical to use photocomposition for informal documents, such as letters and memos, or documents with a tight deadline, such as most proposals. We recommend using photocomposition for more formal documents that will be reproduced in great quantities or distributed to a wide audience, such as brochures, manuals, textbooks, and technical reports. Output Processor skill and experience is necessary to produce an attractive document; however, when it counts, the results you can achieve are worth the effort.

Note: Electrostatic printers offer an intermediate level of expense, convenience, and formality between line printers and photocomposition devices and allow printing of graphics. All Output Processor directives that apply to photocomposition devices also apply to electrostatic printers.

Designing A Document For Photocomposition

Before you design a format for your document, choose the phototypesetting device you will use. The particular device affects both practical and aesthetic decisions you make about the format. The devices each provide a different selection of type faces and styles, and the quality of the type they produce can vary from merely adequate to excellent. (See Appendix II, Appendix III, and Appendix IV for type samples.) The services also differ in price. Contact your client coordinator at ARC to discuss the advantages and disadvantages of the various photocomposition devices.

A photocomposed page is laid out in the same way that a line printer or typewriter terminal page is laid out, except that you can use more than one column. The same Output Processor directives you use to create a line printer or typewriter terminal format, with appropriate photocomposition measurements, control the position of the page elements. Special photocomposition directives allow you to specify type fonts for each page element. See Appendix I for diagrams showing the various page layout and typesetting directives.

It is easy to use the same format you created for a line printer or typewriter terminal when you send a document to be phototypeset, but this is not an effective use of the medium. For example, line printer formats are often designed to reflect AUGMENT outline structure; every level is indented two or three characters and much space (and paper) is wasted. With photocomposition, outline structure can be expressed much more effectively through type style; level 1 statements can be set in bold face, level 2 in Italic, and so on. Line printer margins are usually set for 12-point, monospaced type (only 10 characters per inch) and are inappropriate for smaller proportional type.

We recommend that you use photocomposition formats that are designed especially for typeset, published documents. The Output Processor uses an initial format for photocomposition that closely resembles the initial format it uses for the line printer. When you want to set or change any of the elements or dimensions, you have to do so specifically.

When formatting for photocomposition, the Output Processor calculates the dimensions of a page according to whatever type of measurement you specify; you can use inches, centimeters, points, or

characters. For example, if you set the right margin to 6.499, text will stop printing at 6.499 inches; if you set the right margin to 8.5c, text will stop printing at 8 1/2 centimeters. The section on photocomposition measurements in Appendix I tells you how to indicate the different types of measurements.

We strongly recommend that you use inches or centimeters to set the position of page elements for photocomposition. Characters in a proportional type face vary in size; if you specify photocomposition measurements in number of characters or lines, the results will not be easy to predict. Although line printers and typewriter terminals consistently print either 10 or 12 characters to the inch, photocomposition devices produce a different number of characters per inch for every font. The option of using points is valuable for people with a background in traditional typesetting who are most comfortable working with points.

Choosing a type face is an integral part of designing a document. The type you choose will affect the legibility and beauty of your document. Each of the photocomposition devices has a different selection of type; see samples in Appendix II, Appendix III, and Appendix IV. Many people are tempted to show off the abilities of the Output Processor (or their own abilities) by crowding many different fonts in several sizes onto one page. We recommend that you start simply. A good looking document can be produced using one type face, with Italic and bold variations, in a few different sizes. Try not to use more than two type faces, one serif and one sans serif, on the same page. For photocomposed technical documents, most body text should be set in type ranging from 9 to 11 points. A serif type face is considered more legible for body text, but a sans serif face can be used effectively for shorter material or to create a "technical" or "contemporary" look.

If you don't know how a typeset document should look or if you feel reluctant to start from scratch, you can copy or imitate a format that has already been created. Since most of the directives for an AUGMENT file are stored in its origin statement, you can copy them to the origin statement in your own file. You will then only need to make individual adjustments to special pages. If one section of a document has a format you like, such as a title page, you can copy the directives from that section to your own file.

You can use a printed document that was not created online as a model; use Output Processor directives to imitate the format. The editorial departments in most organizations have established regulations for formatting published documents. You can use Output Processor directives to reproduce a standard format (and you'll make the editors very happy). It is extremely valuable to plan the format of your document and determine the page dimensions before you begin to insert directives in a file. Ready-made formats are also available. If the expenditure is justified, speak to your client coordinator about adding your own standard format to the repertoire of ready-made formats.

Using Photocomposition Directives

After you have designed a format, use the descriptions of directives in this guide to find the appropriate directives to create it. Except for directives that control columnation and typesetting, you can use the same directives you used to create a line printer format to create a photocomposition format. Place directives in the origin statement to control overall format and elsewhere to change a specific value, cause an immediate action, or change the format for a special section of your document.

Almost every directive that specifies a measurement can take both a nonphotocomposition measurement and a photocomposition measurement, separated by a comma. The first is always the nonphotocomposition measurement in characters or lines. This measurement will take effect when the Output Processor prints the file on a nonphotocomposition device. The second is the photocomposition measurement and will only operate when the file is printed on a photocomposition device or an electrostatic printer.

Both nonphotocomposition and photocomposition measurements may appear alone. If a photocomposition measurement appears alone (e.g., Rm=,6.0), the value will have an effect on photocomposition devices or electrostatic printers only. If the file is printed on a nonphotocomposition device, the initial value for the nonphotocomposition format or a value set by a previous directive will be used.

If a nonphotocomposition measurement appears alone (e.g., Rm=65), the Output Processor will calculate an equivalent photocomposition measurement for output to photocomposition. *However, we strongly recommend that you specifically set the photo-*

composition values. The mechanisms used to translate nonphotocomposition values into photocomposition values are extremely complex and the results may not be what you expect. For nonphotocomposition devices, directives that pertain to photocomposition only, such as typesetting directives, will be ignored. They will not be printed as text and they will have no effect on the format.

You can specify a font for every page element. Set up the overall document by inserting directives in the origin statement, and then make changes on individual pages, such as setting a phrase in Italic or changing the font for a table. In the font directives that set type for page elements, you may specify any or all of three categories of values: size, face, and style. If one is left out, it retains its previous value, either whatever you specified most recently for that element or the initial value. You can control any one of these categories individually, with special typesetting directives.

Type size refers to the height of a font, traditionally measured in points, from the top of the ascender (the part that extends up on an "h") to the bottom of the descender (the part that extends down on a "p"). This does not measure the width of the characters; the width of the letter "m" in different fonts that are of identical height or point size will vary. You may change the type size at any place in a line or statement with the Size directive. Remember that a change in type size will alter the number of characters that will fit on a line.

A type face includes all the type of a single design, regardless of size. For example, one face available to AUGMENT users is Times Roman. Times Roman was developed in the 1930s for the London Times. It is based on the tradition of old-style types, and has larger letters, size for size, than most other serif type. You may change the type face at any place in a line or statement with the Face directive. Note that a change in type face may alter the number of characters that will fit on a line.

Type style includes the range of variations for an individual type face. This includes both the weight of the letters (light, medium, and bold) and the choice between upright or Italic. (Note: If true Italic is not available, the photocomposition device may create an imitation Italic.) Although underlining is not truly a type variation, underlining is also an option for type style with the Output Processor. You may change the type style at any place in a line or statement with special typesetting directives.

Checking The Format

The Proof Subsystem. If you have access to an AUGMENT Graphics work station, use the Proof subsystem to check your photocomposition. The Proof subsystem shows pages as they would appear printed via photocomposition. It displays the layout of the page in approximate type sizes. The system knows the size of each character in every font and displays the correct amount of text on each line and on each page. However, the terminal does not display different fonts.

When you give the command to print a file on a photocomposition device, the Output Processor creates a specially formatted file that is appropriate for sending to a photocomposition vendor. The Proof subsystem will display only these special photocomposition files (which cannot be viewed with Base subsystem commands). Use the appropriate command to create a file in your directory for proofing. Be sure to specify the actual photocomposition device you will be using; the size of the characters differs on the various devices and this will affect line and page breaks.

To learn how to reach the Proof subsystem, type "proof" in Help. In Proof, you will type in and see the commands on your AUGMENT display terminal while the Graphics screen displays the formatted pages. The subsystem will display your photocomposition file with the Proof command. Other commands provide several flexible ways of moving around in the file.

You may find it efficient to view on your display screen the AUGMENT file from which the photocomposition file you are proofing was made. You can check the directives in your file that produce the format displayed on the Graphics screen and make changes and corrections as you go along. Changes to the directives in the AUGMENT file will not appear in the photocomposition file you are displaying; to check the changes, you must repeat the process of creating and displaying the photocomposition file.

Photocomposition tests. A photocomposition test is a special printer file that precisely describes in words and numbers how a photocomposed document will

look. Because it is a written description of visual information, it is rather complex and difficult to read. To learn how to read a photocomposition test, contact your client coordinator. It is best used in conjunction with the Proof subsystem; it provides more detailed information about type faces or the exact position of an element on a page than Proof. If a Graphics work station is not available, you can learn to read photocomposition tests for an exact description of the positions and sizes of everything on the page, as well as to check the overall format. Careful use of photocomposition tests is valuable for eliminating errors before your document is photocomposed.

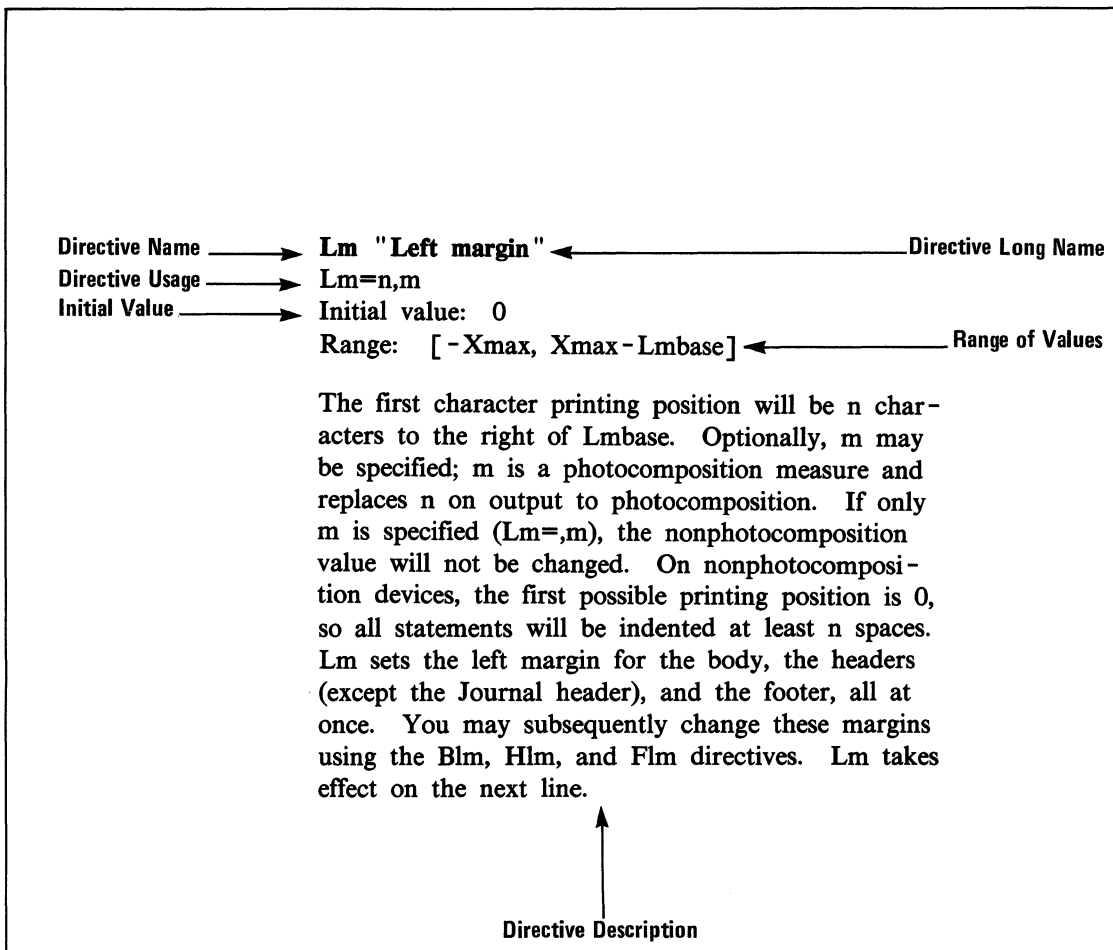
Use the appropriate command to create a test file for the photocomposition device you will be using. This file has a special structure and cannot be viewed with Base subsystem commands; you can look at it by giving the command that prints a sequential file on a printer or terminal.

Sending A Document To A Photocomposition Device

When you are ready to send your document to be phototypeset, use the command to create in your directory a photocomposition file for each of your formatted AUGMENT files, and contact Feedback at ARC to make arrangements to send the photocomposition files to the photocomposition vendor. The ARC staff will copy the photocomposition files onto a magnetic tape and will send the tape to the vendor of your choice. The vendor will use the tape to produce microfilm, plates, proofs (low-quality for examination or correction only), or camera-ready copy (high-quality on special paper to ensure good reproduction) on its photocomposition device.

We generally advise that you request proofs of your document and check them carefully before requesting the camera-ready copy. You may decide to make changes to your original file, create a new photocomposition file, and send the corrected document back to the vendor. For further information about this process, send a message to Feedback.

DIRECTIVE DESCRIPTION



DESCRIPTIONS OF OUTPUT PROCESSOR DIRECTIVES

How To Read Directive Descriptions

This section contains descriptions of all Output Processor directives, organized according to function. The illustration on the facing page shows the organization of a typical directive description. The elements shown in the illustration are discussed below.

Directive Name is the name of the directive, such as Igd or Trun. The first letter must be upper case. Subsequent letters may be either upper case or lower case. For example, the names Igd, IGD, IgD, and IGd are all equivalent.

Directive Long Name very briefly indicates the effect of the directive or the parameter that it sets. For example, "Truncate to n lines" is the long name of the Trun directive, and "Body right margin" is the long name of the Brm directive.

Directive Usage shows what you must type to use the directive (excluding the directive delimiters). If the directive does not have arguments, only the directive name appears; otherwise, an equal sign (=) and all possible arguments follow the directive name. In some cases, an additional argument appears within square brackets ([]) following the directive name.

If the directive usage shows an argument beginning with a lower case letter, you must type an appropriate value for that argument, as discussed later in the directive description. For example, the usage of the Trun directive is shown as Trun=n and its description indicates that n represents a number of lines. You would use Trun=3 to instruct the Output Processor to truncate all statements to three lines. In most cases, the letter n represents an integer (e.g., a number of characters or lines) and m represents a photocomposition measurement (as described in Appendix I).

In some directives you may use an alphabetic equivalent in place of a number. For example, Pntype=1 is equivalent to Pntype=Dec because Dec is the alphabetic equivalent of 1. Like directives, alphabetic equivalents must begin with upper case letters.

If the directive usage shows an argument as either a number or a word beginning with an upper case letter, you must type the number or word itself. When special characters such as quote marks and square brackets are shown in the directive usage,

you must type them, with one exception: A slash (/) separates choices of what you may type following the equal sign; you do not type the slash. For example, the usage of the F directive is shown as F="string"/"odd","even". This means you can follow F= by either one argument enclosed in double quote marks or by two such arguments separated by a comma.

Where the only choices shown are On and Off, you may type the number 1 in place of the word On, and 0 in place of Off. Note, however, that when On and Off are not the only choices, they may not be equivalent to 1 and 0. Read the directive description carefully to avoid problems.

Some arguments are optional. The detailed directive description indicates whether you may omit any arguments and what values are assumed if you do. If you omit the argument within square brackets following the directive name, you must also omit the brackets. If you omit all arguments shown following the equal sign, you must also omit the equal sign.

If you omit an argument normally followed by a comma, you may also omit the comma if no other arguments follow it. For example, if the directive usage is Bfont=size,face,style, you may use the form Bfont=size,face to omit the style argument. However, you must type both commas if you wish to omit size or face, e.g., Bfont=,,style.

Initial Value is the value the Output Processor will use if you do not use the directive. Where not applicable, an initial value is not shown. The name of a directive appears here when the initial value is equal to the value of that directive.

"AUGMENT" means that the initial value is the value in effect in AUGMENT when the file is sent to the Output Processor. For example, AUGMENT is shown as the initial value of the Trun directive, indicating that when Trun is not used, lines will be truncated according to the current AUGMENT viewspecs.

If the initial value for photocomposition differs from that for nonphotocomposition, the photocomposition value is shown following the nonphotocomposition value.

A slash (/) separates choices of initial values, as explained later in the directive description. For example, the Rm directive shows two choices for the nonphotocomposition initial value, and its description explains that the second applies only when you print the file on a display or typewriter terminal.

Range of Values is the allowed range for argument values. Where unlimited or not applicable, a range of values is not shown. [min, max] indicates that min is the minimum value and max is the maximum. The min and max may appear here as numbers or the names of other directives (representing their values) and may include symbols specifying simple arithmetic operations, such as addition (+) and subtraction (-). >=0 indicates that the minimum value is 0 and the maximum is a very large positive number.

Directive Description provides information about the directive such as the effects of using it, the meanings and values of its arguments, the point at which it takes effect, and, in some cases, suggestions and examples.

Page Layout

Headers

H1 "Text of header 1"
H1="string"/"odd","even"

H1 sets the text of header 1 to the string. This string will be printed at the top of each page, after the vertical distance of Tm, as long as H1sw is On. The horizontal position of header 1 is determined by the H1p directive. When two strings are defined, the first will apply to all odd numbered pages and the second will apply to all even numbered pages. H is a synonym for H1 (i.e., when you omit the number, it assumes you are referring to H1).

Directives may appear in the header string (surrounded by directive delimiters); they will be executed each time the header is printed. Directives that have a continuing effect (as opposed to those that generate output once) may affect the subsequent text on the page; you may need to change them back at the end of the header string. The end of the string is a double quote mark immediately followed by the directive right delimiter; therefore, a double quote mark may appear in the string only if it is not immediately followed by the right delimiter character. This directive takes effect on the next page.

H2 "Text of header 2"
H2="string"/"odd","even"

See H1 description.

H3 "Text of header 3"
H3="string"/"odd","even"

See H1 description.

H4 "Text of header 4"
H4="string"/"odd","even"

See H1 description.

H1sw "Header 1 switch"
H1sw=On/Off
Initial value: On

When H1sw is On, the string defined by H1 will be printed at the top of each page. When H1sw is Off, header 1 will not be printed. Initially, H1sw is On but H1 is not defined; therefore, simply defining H1 will cause it to be printed. Hsw is a synonym for H1sw. This directive takes effect on the next page.

H2sw "Header 2 switch"
H2sw=On/Off
Initial value: On

See H1sw description.

H3sw "Header 3 switch"
H3sw=On/Off
Initial value: On

See H1sw description.

H4sw "Header 4 switch"
H4sw=On/Off
Initial value: On

See H1sw description.

Hj "Text of Journal header"
Hj="string"/"odd","even"

Hj sets the text of the Journal header to the string. This string is printed within the top margin on each page, as a running head above everything else, including the other headers (see Ybhjtm). The horizontal position of the Journal header is determined by the Hjp directive (initially flush right). If two strings are defined, the first will be printed on all odd numbered pages and the second will be printed on even numbered pages. When a file is journalized, Hj is set by the Journal mechanism to the sender's ident, a space, the date and time of journalization, a space, and the journal number. Once set, the Journal header may not be changed; subsequent Hj directives will be recognized only by D (directive print switch). Hjournal is a synonym for Hj. This directive takes effect on the next page.

Footer

F "Text of footer"
F="string"/"odd","even"
Initial value: ".Gpn;"

This directive sets the text of the footer to the string. The footer string will be printed at the bottom of each page, after the vertical distance of Bm+Ypf, as long as Fsw is set to On. Note: If Bm+Ypf exceeds Ymax, the footer will not print. The horizontal position of the footer is determined by the Fp directive. Directives may appear in the footer string (surrounded by directive delimiters); they will be executed each time the footer is printed. The initial footer generates the current page number; once another footer is defined, automatic page number generation is cancelled. So if you want a page number at the bottom of the page, you must include a Gpn directive in the footer string. If you wish no footer (page numbers) to be printed, set Fsw to Off. When two strings are defined, the first will apply to all odd numbered pages and the second will apply to all even numbered pages. This directive takes effect on the current page.

The end of the string is a double quote mark immediately followed by the directive right delimiter; therefore, a double quote mark may appear in the string only if it is not immediately followed by the right delimiter character. The footer will not appear when a Mcsf string is being printed on the page because it contains a marked statement. (Mcsfsw=On overrides Fsw on pages with marked statements.)

Fsw "Footer switch"
Fsw=On/Off
Initial value: On

When Fsw is On, the string defined by the F directive will be printed at the bottom of each page (see F). When Fsw is Off, the footer defined by F will not be printed. Footers for changed pages will still appear when Fsw is Off, Mcsfsw is On, and Mcsf is defined. Fsw takes effect on the current page.

Vertical page dimensions

Ymax "Maximum vertical distance on a page"
Ymax=n,m
Initial value: 66, 11.0
Range: >=0

Ymax sets the length of a "logical" page (a page of print) to n lines. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Ymax=,m), the nonphotocomposition value will not be changed. If m is not specified on output to photocomposition, the Output Processor will calculate the size of a line by adding the type size and the leading. On output to photocomposition devices, a page may be no longer than 11 inches, so Ymax is useful only for making short pages. Ymax must always be greater than Bm+Ypf+(height of footer). Note: If Bm+Ypf exceeds Ymax, the footer will not print. Increasing Ymax will not affect any of these parameters, however, so you must subsequently increase one or more of them to make use of the additional space on the page.

Most terminals and printers have physical pages of 66 lines (an 11" page at 6 lines per inch). You can specify a logical page shorter or longer than 11". For example, if you are using 10.5" paper, set Ymax=63. You may use more than one physical page to produce a long logical page (for instance, if you plan on photoreducing the printer output). Make sure the form feed position is established on the output device so that a new logical page always begins at the top of a new physical page. Note that on high-quality typewriter terminals, the print line indicator shows the location of the bottom of the characters, so you must leave enough space above it to print the first line of characters.

Tm "Top margin"
Tm=n,m
Initial value: 3, 1.0
Range: [0, Ymax]

There will be n lines in the top margin, i.e., the area between the top edge of the page and the first line of header or, if there is no header, the first line of the body text. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Tm=,m), the nonphotocomposition value

will not be changed. If m is not specified on output to photocomposition, the Output Processor will calculate the size of a line by adding the type size and the leading. If a Journal header is defined, it will be printed in the top margin and there will be Ybhjtm lines between its first line and the end of the top margin. Tm takes effect on the next page.

Ybhjtm "Distance between Journal header and top margin"
Ybhjtm=n,m
Initial value: 0
Range: [0, Ymax]

There will be n lines between the first line of the Journal header and the end of the top margin. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Ybhjtm=,m), the nonphotocomposition value will not be changed. If m is not specified on output to photocomposition, the Output Processor will calculate the size of a line by adding the type size and the leading. Ybhjtm will take effect only if a Journal header is being printed. If you subsequently change the size of the top margin but not the value of Ybhjtm, the position of the Journal header will change accordingly.

Ybh1h2 "Distance between headers 1 and 2"
Ybh1h2=n,m
Initial value: 0
Range: [0, Ymax]

There will be n blank lines between header 1 and any following headers. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Ybh1h2=,m), the nonphotocomposition value will not be changed. If m is not specified on output to photocomposition, the Output Processor will calculate the size of a line by adding the type size and the leading. Ybh1h2 will take effect only if header 1 and at least one additional header are being printed.

Ybh2h3 "Distance between headers 2 and 3"
Ybh2h3=n,m
Initial value: 0
Range: [0, Ymax]

There will be n blank lines between header 2 and any following headers. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Ybh2h3=,m), the nonphotocomposition value will not be changed. If m is not specified on output to photocomposition, the Output Processor will calculate the size of a line by adding the type size and the leading. Ybh2h3 will take effect only if header 2 and a header following header 2 are being printed.

Ybh3h4 "Distance between headers 3 and 4"
Ybh3h4=n,m
Initial value: 0
Range: [0, Ymax]

There will be n blank lines between header 3 and header 4. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Ybh3h4=,m), the nonphotocomposition value will not be changed. If m is not specified on output to photocomposition, the Output Processor will calculate the size of a line by adding the type size and the leading. Ybh3h4 will take effect only if header 3 and header 4 are being printed.

Yfh "Distance following headers"
Yfh=n,m
Initial value: 3, 0.5
Range: [0, Ymax]

There will be n blank lines following the last header before the body text begins. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Yfh=,m), the nonphotocomposition value will not be changed. If m is not specified on output to photocomposition, the Output Processor will calculate the size of a line by adding the type size and the leading. This directive will take effect only if at least one header is being printed; if no header is being printed, the body text will immediately follow the top margin. Yfh takes effect the next time the last header is printed.

Bm "Bottom margin"
Bm=n,m
Initial value: 56, 10.0
Range: [0, Ymax]

n is the last line on which body text will be printed. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Bm=,m), the nonphotocomposition value will not be changed. If m is not specified on output to photocomposition, the Output Processor will calculate the size of a line by adding the type size and the leading. If statement numbers and signatures are being printed as well as the text, and they overlap each other on the last line, the statement number will be printed on line n+1 and the signature will be printed on line n+2. The bottom margin must be greater than Tm+(height of headers)+Yfh. It may not be set so that Bm+Ypf+(height of footer) exceeds Ymax. Since Bm takes effect immediately, if you want to set Bm and Ymax to be larger than the initial value for Ymax, the new Ymax directive must precede the new Bm directive. Note: If Bm+Ypf exceeds Ymax, the footer will not print. Bm takes effect on the current page, unless it moves the bottom margin to a point above the end of the current statement.

Ypf "Distance preceding footer"
Ypf=n,m
Initial value: 3, 0.5
Range: [0, Ymax]

There will be n blank lines between the end of the body text and the footer (defined by F or Mcsf). Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Ypf=,m), the nonphotocomposition value will not be changed. If m is not specified on output to photocomposition, the Output Processor will calculate the size of a line by adding the type size and the leading. Ypf will take effect only when a footer is being printed (as determined by Fsw and Mcsfsw).

Horizontal page dimensions

Xmax "Maximum horizontal distance"
Xmax=n,m
Initial value: 132, 8.5
Range: >=0

Xmax sets the width of a page, measuring from Lmbase. n is the maximum number of character positions. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Xmax=,m), the nonphotocomposition value will not be changed. To allow a directive to measure a greater distance from Lmbase than the initial value of Xmax, increase Xmax accordingly, noting that some directives measure from the statement's left margin rather than from Lmbase.

Lmbase "Left margin base"
Lmbase=n,m
Initial value: 0, 1.5
Range: [-Xmax, Xmax]

Lmbase sets a reference position to n characters to the right of character position 0 on nonphotocomposition devices and to the right of the left edge of the page on photocomposition devices. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Lmbase=,m), the nonphotocomposition value will not be changed. Most horizontal margin settings are relative to this position. When you set Lm, Hlm, Flm, or Blm to n, the appropriate left margin will be set to n+Lmbase from the zero position. Changing Lm, Hlm, Flm, or Blm does not change the reference point from which right margins are calculated, since right margins are calculated from Lmbase. Lmbase takes effect at the beginning of the current line.

Blm "Body left margin"
Blm=n,m
Initial value: Lm
Range: [-Xmax, Xmax-Lmbase]

Blm sets the body left margin to n characters to the right of Lmbase. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Blm=,m), the nonphotocomposition value will not be changed. On nonphotocomposition devices, the first possible printing position is 0, so all

body statements will be indented at least n spaces. Setting Lm sets Blm to the same value at the same time. Blm takes effect on the next line.

Hlm "Header left margin"
Hlm=n,m
Initial value: Lm
Range: [-Xmax, Xmax-Lmbase]

Hlm sets the left margin of all headers except the Journal header to n characters to the right of Lmbase. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Hlm=,m), the nonphotocomposition value will not be changed. On nonphotocomposition devices, the first possible printing position is 0, so the headers will be indented at least n spaces. Setting Lm sets Hlm to the same value at the same time. Hlm takes effect beginning with the next occurrence of a header.

Flm "Footer left margin"
Flm=n,m
Initial value: Lm
Range: [-Xmax, Xmax-Lmbase]

Flm sets the left margin of the footer to n characters to the right of Lmbase (when a footer is being printed, as determined by the F, Fsw, Mcsf, and Mcsfsw directives). Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Flm=,m), the nonphotocomposition value will not be changed. On nonphotocomposition devices, the first possible printing position is 0, so the footer will be indented at least n spaces. Setting Lm sets Flm to the same value at the same time. Flm takes effect on the current page.

Lm "Left margin"
Lm=n,m
Initial value: 0
Range: [-Xmax, Xmax-Lmbase]

The first character printing position will be n characters to the right of Lmbase. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Lm=,m), the nonphotocomposition value will not be changed. On nonphotocomposition devices, the first possible printing position is 0, so all statements will be indented at least n spaces. Lm sets the left margin for the body, the headers (except the Journal header), and the footer, all at once. You may subsequently change these margins using the Blm, Hlm, and Flm directives. Lm takes effect on the next line.

Brm "Body right margin"
Brm=n,m
Initial value: Rm
Range: [0, Xmax-Lmbase]

Brm sets the body right margin to n characters to the right of Lmbase. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Brm=,m), the nonphotocomposition value will not be changed. Setting Rm sets Brm to the same value at the same time. Brm takes effect on the next line.

Hrm "Header right margin"
Hrm=n,m
Initial value: Rm
Range: [0, Xmax-Lmbase]

Hrm sets the right margin of all headers except the Journal header to n characters to the right of Lmbase. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Hrm=,m), the nonphotocomposition value will not be changed. Setting Rm sets Hrm to the same value at the same time. Hrm takes effect beginning with the next occurrence of a header.

Frm "Footer right margin"
Frm=n,m
Initial value: Rm
Range: [0, Xmax-Lmbase]

Frm sets the footer right margin to n characters to the right of Lmbase (when a footer is being printed, as determined by the F, Fsw, Mcsf, and Mcsfsw directives). Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Frm=,m), the nonphotocomposition value will not be changed. Setting Rm sets Frm to the same value at the same time. Frm takes effect on the current page.

Rm "Right margin"
Rm=n,m
Initial value: 72/65, 6.0
Range: [0, Xmax-Lmbase]

The right margin will be set to n characters to the right of Lmbase, i.e., Rm+Lmbase is the last character position in which a character will be printed. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Rm=,m), the nonphotocomposition value will not be changed. Rm sets the right margin for the body, the headers (except the Journal header), and the footer, all at once. You may subsequently change these margins using the Brm, Hrm, and Frm directives. The initial value is 65 for display or typewriter terminals and 72 for all other nonphotocomposition devices. Rm takes effect on the next line segment.

Hjlm "Journal header left margin"
Hjlm=n,m
Initial value: 0
Range: [-Xmax, Xmax-Lmbase]

Hjlm sets the Journal header left margin to n characters to the right of Lmbase. Lm does not affect Hjlm. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Hjlm=,m), the nonphotocomposition value will not be changed. On nonphotocomposition devices, the first possible printing position is 0, so the Journal header will be indented at least n spaces. Hjlm takes effect beginning with the next occurrence of a Journal header.

Hjrm "Journal header right margin"
Hjrm=n,m
Initial value: 76/72, 6.5
Range: [0, Xmax-Lmbase]

Hjrm sets the Journal header right margin to n characters to the right of Lmbase. Rm does not affect Hjrm. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Hjrm=,m), the nonphotocomposition value will not be changed. The initial value is 72 for display or typewriter terminals and 76 for all other nonphotocomposition devices. Hjrm takes effect beginning with the next occurrence of a Journal header.

Vertical spacing

Gcr "Generate return character(s)"
Gcr=n
Range: [0, 75]

Gcr generates n return characters at that point in the output. Gcr without an argument generates one return character. Gcr may be placed in any text, including in headers and footers. When generated within the body text, the blank lines are considered to be part of the current statement. You may prefer instead to use Gybs or Gyes for blank space before or after a statement. Gybl or Gyel can be used instead of Gcr within a statement.

Gybl "Generate vertical distance before line"
Gybl=n,m
Range: [1, 792]

Gybl generates n blank lines before the current line. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Gybl=,m), nothing will happen on nonphotocomposition devices. If m is not specified on output to photocomposition, the Output Processor will calculate the size of a line by adding the type size and the leading. Blank lines generated by Gybl immediately following an automatic pagination or columnation will be discarded. If you really need blank space at the top of a page, use also the directive Pel or Pbl to force the pagination where it would otherwise occur automatically. If you need blank space at the top of a column, use instead Cel or Cbl with Gcr.

Gybs "Generate vertical distance before statement"
Gybs=n,m
Range: [1, 792]

Gybs generates n blank lines before the current statement. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Gybs=,m), nothing will happen on nonphotocomposition devices. If m is not specified on output to photocomposition, the Output Processor will calculate the size of a line by adding the type size

and the leading. Gybs applies to the body area only. The distance will be generated even if this is the first statement on a page or in a column.

Gyel "Generate vertical distance at end of line"
Gyel=n,m
Range: [1, 792]

Gyel generates n blank lines after the current line. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Gyel=,m), nothing will happen on nonphotocomposition devices. If m is not specified on output to photocomposition, the Output Processor will calculate the size of a line by adding the type size and the leading. To generate vertical distance after the last line in a statement, use Gyes; Gyel has no effect in the last line of a statement.

Gyes "Generate vertical distance at end of statement"
Gyes=n,m
Range: [1, 792]

Gyes generates n blank lines after the current statement. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Gyes=,m), nothing will happen on nonphotocomposition devices. If m is not specified on output to photocomposition, the Output Processor will calculate the size of a line by adding the type size and the leading. Gyes applies to the body area only.

Pxfys "Insert vertical distance at same level"
Pxfys [level] =n,m
Initial value: 1
Range: [0, Ymax]

n blank lines will be inserted after a statement of the given level if the next statement is at the same level; i.e., n is the number of blank lines to be inserted between statements of the same level. If the succeeding statement is not at the same level, Pxfys has no effect. The level must be set by the Pxfshow directive. If you omit [level], the directive applies to all levels set by Pxfshow. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Pxfys [level] =,m), the nonphotocomposition value will not be changed. On output to photocomposition, the initial value is the type size plus the leading. Pxfys takes effect immediately and is in addition to any other vertical distance (e.g., Ybs). Note that one extra blank line will be inserted when this directive is not used for a level set by Pxfshow.

Pxfyd "Insert vertical distance down a level"
Pxfyd [level] =n,m
Initial value: 1
Range: [0, Ymax]

n blank lines will be inserted after a statement of the given level if the next statement is one level down; i.e., n is the number of blank lines to be inserted before the first substatement of every statement of the given level. If the succeeding statement is not a substatement, Pxfyd has no effect. The level must be set by the Pxfshow directive. If you omit [level], the directive applies to all levels set by Pxfshow. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Pxfyd [level] =,m), the nonphotocomposition value will not be changed. On output to photocomposition, the initial value is the type size plus the leading. Pxfyd takes effect immediately and is in addition to any other vertical distance (e.g., Ybs). Note that one extra blank line will be inserted when this directive is not used for a level set by Pxfshow.

Pxfyu "Insert vertical distance up a level"
Pxfyu [level] =n,m
Initial value: 2
Range: [0, Ymax]

n blank lines will be inserted before a statement of the given level if the preceding statement was at any lower level; i.e., n is the number of blank lines to be inserted when moving up in level to a statement of the given level. If the succeeding statement is not at a higher level, Pxfyu has no effect. The level must be set by the Pxfshow directive. If you omit [level], the directive applies to all levels set by Pxfshow. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Pxfyu [level] =,m), the nonphotocomposition value remains the same. On output to photocomposition, the initial value is twice the sum of the type size and the leading. Pxfyu takes effect im-

mediately and is in addition to any other vertical distance (e.g., Ybs). Note that two extra blank lines will be inserted when this directive is not used for a level set by Pxfshow.

Pxfshow "Levels for inserting vertical distance"
Pxfshow=intervals
Initial value: 0
Range: [0, 35]

Blank lines will be inserted for the listed intervals of levels as specified by Pxfyu, Pxfys, and Pxfyd. Pxfshow takes effect immediately and is in addition to any other vertical distance (e.g., Ybs). It remains in effect until changed or set to Off. Note that when you set Pxfshow for some levels, you will get at least one extra blank line if you have not changed the initial values for Pxfyu, Pxfys, and Pxfyd.

"intervals" represents a series of intervals of levels in any of the following forms (where n and m are integers between 1 and 35):

n	Level n only
<n	Levels 1 through n-1
<=n	Levels 1 through n
>n	Levels n+1 through 35
>=n	Levels n through 35
(n, m)	Levels n+1 through m-1
[n, m)	Levels n through m-1
(n, m]	Levels n+1 through m
[n, m]	Levels n through m
All/On/Yes	Levels 1 through 35
None/Off/No/0	No levels (resets the directive)

To specify more than one interval, separate them with commas (e.g., <=3,[10,12]). You may not specify an interval from one number through a lower number (e.g., [12,10]).

Vsplit "Vertical split"
Vsplit

At the end of the current line segment, return characters will be inserted such that the rest of the statement will appear at the bottom of the page. An easy way to force an end to the line segment is to follow the Vsplit directive with Gcr=1. Vsplit will be ignored if there is not enough room for the rest of the statement on the page.

Ybl "Distance between lines within a statement"
Ybl=n,m
Initial value: 0
Range: [0, Ymax]

There will be n blank lines between lines within a statement. (Ybl does not affect space between statements; see Ybs.) Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Ybl=,m), the nonphotocomposition value will not be changed. If m is not specified on output to photocomposition, the Output Processor will calculate the size of a line by adding the type size and the leading. Ybl applies to the body area only and takes effect immediately.

Ybs "Distance between statements"
Ybs=n,m
Initial value: AUGMENT
Range: [0, Ymax]

There will be n blank lines between the last line of one statement and the beginning of the next. This directive will override the AUGMENT viewspec y/z. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Ybs=,m), the nonphotocomposition value will not be changed. If m is not specified on output to photocomposition, the Output Processor will calculate the size of a line by adding the type size and the leading. Ybs takes effect immediately.

Horizontal spacing

Gsp "Generate space(s)"
Gsp=n
Range: [0, 75]

Gsp generates n spaces at that point in the output. Gsp without an argument generates one space.

Leading "Leading spaces switch"
Leading=On/Off
Initial value: On

Spaces at the beginning of a line are normally printed, i.e., Leading=On. When Leading=Off, any blank spaces at the beginning of each line will not be printed. This directive takes effect on the next line.

Trailing "Trailing spaces switch"
Trailing=On/Off
Initial value: Off

Trailing spaces (at the end of a line) are normally not printed, i.e., Trailing=Off. If you center lines or set lines flush right, spaces at the end of the line would cause different positioning than you might expect. If you want to retain spaces at the end of each line, use Trailing=On. This directive takes effect beginning with the next line segment.

Gtab "Generate tab(s)"
Gtab=n
Range: [0, 10]

Gtab generates n tabs at that point in the output. Gtab without an argument generates one tab. Printing resumes in the character position where the nth tab stop from the current position is set. (See Tabstops.)

Tabstops "Clear and set tab stops"
Tabstops=m,n,o,p,etc.(a,b,c,d,etc.)
Initial value: AUGMENT
Range: [0, Xmax-Lmbase]

This directive cancels the previous tab stops and sets new tab stops at positions m, n, o, p, etc. (relative to Lmbase). When a tab is executed, printing begins in the character position where the next tab stop is set. A tab may be in the AUGMENT text or generated with a Gtab directive. Optionally, a, b, c, d, etc. may be specified; these are photocomposition measures and only take effect on output to photocomposition. Photocomposition tabs accept measurements in inches (or centimeters) rather than character positions. If only the photocomposition tab stops are specified (Tabstops=(a,b,c,d, etc.)), the nonphotocomposition tab stops will not be changed. If a, b, c, d, etc. are not specified on output to photocomposition, the distances are calculated from the current body type size. This directive takes effect immediately.

Three dots set the rest of the tab stops in intervals equal to the difference between the last two arguments. For example, Tabstops=7,15,...(1.0,2.0,...) has the same effect as Tabstops=7,15,23,31,39,etc. (1.0,2.0,3.0,etc.). Note that the three dots must be preceded by a comma.

Tabto "Tab to character position"
Tabto=n,m
Range: [0, Xmax-Lmbase]

Tabto tabs to the given character position. The next visible character following the directive will be printed in the nth character position to the right of Lmbase. If you are at or beyond the given position, nothing will happen. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. The left edge of the next character will begin m distance to the right of Lmbase. In a second, third, or fourth column, m is measured from the left margin of that column; e.g., in the second column, m will be measured to the right of Lmbase+(width of first column)+Xbc. If only m is specified (Tabto=,m), nothing will happen on nonphotocomposition devices. Tabto does not insert a tab character and is not affected by tab stops. Tabto takes effect immediately and constitutes a line segment break.

Indenting

Imax "Maximum total indentation"
Imax=n,m
Initial value: 48
Range: [0, Xmax-Blm]

The maximum amount of indenting from the body left margin by *all* the other indentation directives will be n spaces. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Imax=,m), the nonphotocomposition value will not be changed. The initial value for photocomposition is 48 times the width of an M in the current font. Imax takes effect on the next line.

Ilev "Indentation per level"
Ilev=n,m
Initial value: AUGMENT
Range: [-Imax, Imax]

Ilev sets the distance that each statement will be indented relative to the indenting of a statement at the next higher level. Each line of each statement will be indented n times L-1 spaces from the body left margin, where L is the statement level. For example, if Ilev=3, a level 2 statement will be indented 3 spaces and a level 3 statement will be indented 6 spaces. Optionally, m may be specified; m is a photocomposition measure and takes effect

only on output to photocomposition. If only m is specified (Ilev=,m), the nonphotocomposition value will not be changed. This indentation is always performed before any other indenting; it establishes the statement's left margin, from which further indenting may be specified by other directives. No indentation will be greater than Imax. To control indentation for each level separately, use instead Pxi and Pxishow. Ilev takes effect on the next statement.

Pxi "Indentation for specific levels"
Pxi[level]=n,m
Initial value: See below
Range: [0, Imax]

Each statement of the given level, when set by Pxishow, will be indented n spaces from the body left margin. This indentation replaces the current value of Ilev for each level set by Pxishow. If you omit [level], the directive applies to all levels set by Pxishow. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Pxi[level]=,m), the nonphotocomposition value will not be changed. On nonphotocomposition devices, the initial value is 3 spaces times (level-1); on photocomposition, it is 0.3 inches times (level-1). Pxi takes effect on the next statement.

Pxishow "Levels for Pxi"
Pxishow=intervals
Initial value: 0
Range: [0, 35]

Pxishow controls the indenting of each level independently. The listed intervals of levels will be indented according to the current value of Pxi for those levels. This indentation replaces Ilev for those levels. (Ilev will continue to affect levels not listed.) Pxishow takes effect on the next statement and remains in effect until changed.

"intervals" represents a series of intervals of levels in any of the following forms (where n and m are integers between 1 and 35):

n	Level n only
<n	Levels 1 through n-1
<=n	Levels 1 through n
>n	Levels n+1 through 35
>=n	Levels n through 35
(n, m)	Levels n+1 through m-1
[n, m)	Levels n through m-1
(n, m]	Levels n+1 through m
[n, m]	Levels n through m
All/On/Yes	Levels 1 through 35
None/Off/No/0	No levels (resets the directive)

To specify more than one interval, separate them with commas (e.g., <=3,[10,12]). You may not specify an interval from one number through a lower number (e.g., [12,10]).

Ifirst "Indentation for first line of statement"
Ifirst=n,m
Initial value: 0
Range: [0, Imax]

Ifirst indents the first line of each statement n spaces from the statement's left margin. (The statement's left margin is the body left margin plus any level indenting, i.e., indenting resulting from the Ilev or Pxi directives.) Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Ifirst=,m), the nonphotocomposition value will not be changed. No indentation will be greater than Imax. If you want to vary the amount of indenting by level, use instead Pxifirst and Pxifirstshow. Ifirst takes effect on the next statement.

Pxifirst "Indentation for first lines of statements by level"
Pxifirst[level]=n,m
Initial value: 0
Range: [0, Imax]

The first line of each statement of the given level, when set by Pxifirstshow, will be indented n spaces from the statement's left margin. This indentation replaces the current value of Ifirst for each level set by Pxifirstshow. If you omit [level], the directive applies to all levels set by Pxifirstshow. Optionally, m may be specified; m is a photocomposition measure of the amount of indenting and only takes effect on output to photocomposition. If only m is specified (Pxifirst[level]=,m), the nonphotocomposition value will not be changed. Pxifirst takes effect starting with the next statement. It is often easier to turn it off by changing Pxifirstshow to omit levels, rather than by changing Pxifirst. No indentation will be greater than Imax.

Pxifirstshow "Levels for Pxifirst"
Pxifirstshow=intervals
Initial value: 0
Range: [0, 35]

The listed intervals of levels will be indented according to the values of Pxifirst. This indentation replaces Ifirst for those levels. (Ifirst will continue to affect levels not listed.) Pxifirstshow takes effect starting with the next statement and remains in effect until changed.

"intervals" represents a series of intervals of levels in any of the following forms (where n and m are integers between 1 and 35):

n	Level n only
<n	Levels 1 through n-1
<=n	Levels 1 through n
>n	Levels n+1 through 35
>=n	Levels n through 35
(n, m)	Levels n+1 through m-1
[n, m)	Levels n through m-1
(n, m]	Levels n+1 through m
[n, m]	Levels n through m
All/On/Yes	Levels 1 through 35
None/Off/No/0	No levels (resets the directive)

To specify more than one interval, separate them with commas (e.g., <=3,[10,12]). You may not specify an interval from one number through a lower number (e.g., [12,10]).

Irest "Indentation for statement lines after first line"
Irest=n,m
Initial value: 0
Range: [0, Imax]

All but the first line of each statement will be indented n spaces from the statement's left margin. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Irest=,m), the nonphotocomposition value will not be changed. No indentation will be greater than Imax. Irest takes effect on the next line.

Pxirest "Indentation for statement lines after first line by level"
Pxirest[level]=n,m
Initial value: 0
Range: [0, Imax]

All but the first line of each statement of the given level, when set by Pxirestshow, will be indented n spaces from the statement's left margin. This indentation replaces the current value of Irest for each level set by Pxirestshow. If you omit [level], the directive applies to all levels set by Pxirestshow. Optionally, m may be specified; m is a photocomposition measure of the amount of indenting and replaces n on output to photocomposition. If only m is specified (Pxirest[level]=,m), the nonphotocomposition value will not be changed. Pxirest takes effect starting with the next line. It is often easier to turn it off by changing Pxirestshow to omit levels, rather than by changing Pxirest. No indentation will be greater than Imax.

Pxirestshow "Levels for Pxirest"
Pxirestshow=intervals
Initial value: 0
Range: [0, 35]

The listed intervals of levels will be indented according to the values of Pxirest. This indentation replaces Irest for those levels. (Irest will continue to affect levels not listed.) Pxirestshow takes effect starting with the next line and remains in effect until changed.

"intervals" represents a series of intervals of levels in any of the following forms (where n and m are integers between 1 and 35):

n	Level n only
<n	Levels 1 through n-1
<=n	Levels 1 through n
>n	Levels n+1 through 35
>=n	Levels n through 35
(n, m)	Levels n+1 through m-1
[n, m)	Levels n through m-1
(n, m]	Levels n+1 through m
[n, m]	Levels n through m
All/On/Yes	Levels 1 through 35
None/Off/No/0	No levels (resets the directive)

To specify more than one interval, separate them with commas (e.g., <=3,[10,12]). You may not specify an interval from one number through a lower number (e.g., [12,10]).

Icr "Indentation for return character on previous line"
Icr=n,m
Initial value: 0
Range: [0, Imax]

Each line following a return character will be indented n spaces from the statement's left margin. (These spaces are in addition to any resulting from other indentation directives.) Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Icr=,m), the nonphotocomposition value will not be changed. Icr does not indent the first line of a statement or the overflow of a line onto the next line. No indentation will be greater than Imax. Icr takes effect on the next line.

Iovr "Indentation for overflow of previous line"
Iovr=n,m
Initial value: 0
Range: [0, Imax]

When the Output Processor cannot fit a statement or a line all on one print line, it begins a new line; this new line is called overflow. Overflow from the previous line in a statement will be indented n spaces from the statement's left margin. (These spaces are in addition to any resulting from other indentation directives.) Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Iovr=,m), the nonphotocomposition value will not be changed. No indentation will be greater than Imax. Iovr takes effect on the next line.

Il "Indentation per line in statement"
Il=n,m
Initial value: 0
Range: [0, Imax]

Each line of each statement will be indented n spaces from the beginning of the previous line (not necessarily from the first visible); i.e., it is cumulative for each statement. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Il=,m), the nonphotocomposition value will not be changed. No indentation will be greater than Imax. Il takes effect on the next line.

Ilcr "Indentation per line ended by return character in statement"
Ilcr=n,m
Initial value: 0
Range: [0, Imax]

Each occurrence of a return character (or a Gcr directive) will increment total indentation in that statement by n spaces; i.e., the line resulting from the return character and all subsequent lines in the statement will be indented n more spaces than the previous line. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Ilcr=,m), the nonphotocomposition value will not be changed. No indentation will be greater than Imax. Ilcr takes effect on the next line.

Irel "Indentation relative to first visible in previous line"
Irel=n,m
Initial value: 0
Range: [0, Imax]

Each line of each statement will be indented n spaces from the position of the first visible character in the previous line of the statement; i.e., it is cumulative for each statement. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Irel=,m), the nonphotocomposition value will not be changed. No indentation will be greater than Imax. Irel takes effect on the next statement and overrides the directives Irest, Il, Ilcr, Iovr, and Icr.

Isn "Indentation to replace statement numbers"
Isn=n,m
Initial value: 0
Range: [0, Imax]

If left statement numbers are not being printed (Sn=Off), n spaces will be printed before the first character of the first line of each statement. (These spaces are in addition to any resulting from other indentation directives.) Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Isn=,m), the nonphotocomposition value will not be changed. No indentation will be greater than Imax. Isn takes effect on the next statement.

Positioning

Bp "Body position"
Bp=n,m
Initial value: 1
Range: [1, 10]

Bp sets the horizontal position of the text of the body. Optionally, m may be specified; m replaces n on output to photocomposition. If only m is specified (Bp=,m), the nonphotocomposition value will not be changed. Bp takes effect in the current line.

The following are the position options:

Fl	1	set flush left
Fr	2	set flush right
C	3	center between left and right margins
Cp	4	center between Lmbase and right margin
Ci	5	center between statement's left margin and right margin
Oddl	8	set odd pages flush left, even pages flush right
Oddr	9	set even pages flush left, odd pages flush right
J	10	set with full justification

A line containing a tab will be set flush left. You may use either the alphabetic equivalents or the numbers (e.g., either Oddl or 8).

H1p "Header 1 position"
H1p=n,m
Initial value: 1
Range: [1, 10]

H1p sets the horizontal position of header 1 between the header left and right margins (when H1 is defined and H1sw is On). Optionally, m may be specified; m replaces n on output to photocomposition. If only m is specified, (H1p=,m), the nonphotocomposition value will not be changed. Hp is a synonym for H1p. This directive takes effect beginning with the next occurrence of header 1.

The following are the position options:

Fl	1	set flush left
Fr	2	set flush right
C	3	center between left and right margins
Cp	4	center between Lmbase and right margin
Ci	5	center between header's left margin and right margin
Oddl	8	set odd pages flush left, even pages flush right
Oddr	9	set even pages flush left, odd pages flush right
J	10	set with full justification

A line containing a tab will be set flush left. You may use either the alphabetic equivalents or the numbers (e.g., either Oddl or 8).

H2p "Header 2 position"
H2p=n,m
Initial value: 1
Range: [1, 10]

See H1p description.

H3p "Header 3 position"
H3p=n,m
Initial value: 1
Range: [1, 10]

See H1p description.

H4p "Header 4 position"
H4p=n,m
Initial value: 1
Range: [1, 10]

See H1p description.

Fp "Footer position"
Fp=n,m
Initial value: 3
Range: [1, 10]

Fp sets the horizontal position of the footer with respect to the footer left and right margins (when a footer is being printed, as determined by the F, Fsw, Mcsf, and Mcsfsw directives). Optionally, m may be specified; m replaces n on output to photocomposition. If only m is specified, (Fp=,m), the nonphotocomposition value will not be changed. Fp takes effect on the current page.

The following are the position options:

Fl	1	set flush left
Fr	2	set flush right
C	3	center between left and right margins
Cp	4	center between Lmbase and right margin
Ci	5	center between footer's left margin and right margin
Oddl	8	set odd pages flush left, even pages flush right
Oddr	9	set even pages flush left, odd pages flush right
J	10	set with full justification

A line containing a tab will be set flush left. You may use either the alphabetic equivalents or the numbers (e.g., either Oddl or 8).

Hjp "Journal header position"
Hjp=n,m
Initial value: 2
Range: [1, 10]

Hjp sets the horizontal position of the Journal header between the Journal header left and right margins. Optionally, m may be specified; m replaces n on output to photocomposition. If only m is specified, (Hjp=,m), the nonphotocomposition value will not be changed. Hjp takes effect beginning with the next occurrence of a Journal header.

The following are the position options:

Fl	1	set flush left
Fr	2	set flush right
C	3	center between left and right Journal header margins
Cp	4	center between Lmbase and right margin
Oddl	8	set odd pages flush left, even pages flush right
Oddr	9	set even pages flush left, odd pages flush right
J	10	set with full justification

A line containing a tab will be set flush left. You may use either the alphabetic equivalents or the numbers (e.g., either Oddl or 8).

Tabp "Position of line segment ended by tab"
Tabp=n,m
Initial value: 1
Range: [1, 10]

If the current line segment ends with a tab, it will be horizontally positioned according to the value of Tabp. Optionally, m may be specified; m replaces n on output to photocomposition. If only m is specified (Tabp=,m), the nonphotocomposition value will not be changed. Tabp will override any other horizontal positioning directives (such as Bp, Hp, etc.).

The following are the position options:

Fl	1	set flush left
Fr	2	set flush right
C	3	center between left and right margins
Cp	4	center between Lmbase and right margin
Ci	5	center between statement's left margin and right margin
J	10	set with full justification

You may use either the alphabetic equivalents or the numbers (e.g., either Fr or 2).

Lp "Line position"
Lp=n,m
Initial value: 1
Range: [1, 10]

Lp sets the horizontal position of the current line. Optionally, m may be specified; m replaces n on output to photocomposition. If only m is specified (Lp=,m), the nonphotocomposition value will not be changed.

The following are the position options:

Fl	1	set flush left
Fr	2	set flush right
C	3	center between left and right margins
Cp	4	center between Lmbase and right margin
Ci	5	center between statement's left margin and right margin
Oddl	8	set odd pages flush left, even pages flush right
Oddr	9	set even pages flush left, odd pages flush right
J	10	set with full justification

A line containing a tab will be set flush left. You may use either the alphabetic equivalents or the numbers (e.g., either Oddl or 8).

Sp "Statement position"
Sp=n,m
Initial value: Bp
Range: [1, 10]

Sp sets the horizontal position of the current statement; it affects only the current line and any remaining lines in the statement. Optionally, m may be specified; m replaces n on output to photocomposition. If only m is specified (Sp=,m), the nonphotocomposition value will not be changed.

The following are the position options:

Fl	1	set flush left
Fr	2	set flush right
C	3	center between left and right margins
Cp	4	center between Lmbase and right margin
Ci	5	center between statement's left margin and right margin
Oddl	8	set odd pages flush left, even pages flush right
Oddr	9	set even pages flush left, odd pages flush right
J	10	set with full justification

A line containing a tab will be set flush left. You may use either the alphabetic equivalents or the numbers (e.g., either Oddl or 8).

Pxp "Body position by level"
Pxp[level]=n,m
Initial value: 3
Range: [1, 10]

All statements of the given level will be horizontally positioned as specified, when Pxpshow is set for that level. When Pxpshow is not set for a level, statements of that level will be set according to Bp (body position). If [level] is not specified, the directive applies to all levels set by Pxpshow. Note that when this directive is not used for a level set by Pxpshow, statements of that level will be centered. Optionally, m may be specified; m replaces n on output to photocomposition. If only m is specified (Pxp=,m), the nonphotocomposition value will not be changed. Pxp takes effect on the next statement.

The following are the position options:

Fl	1	set flush left
Fr	2	set flush right
C	3	center between left and right margins
Cp	4	center between Lmbase and right margin
Ci	5	center between statement's left margin and right margin
Oddl	8	set odd pages flush left, even pages flush right
Oddr	9	set even pages flush left, odd pages flush right
J	10	set with full justification

A line containing a tab will be set flush left. You may use either the alphabetic equivalents or the numbers (e.g., either Oddl or 8).

Pxpshow "Levels for Pxp"
Pxpshow=intervals
Initial value: 0
Range: [0, 35]

Pxpshow controls the horizontal positioning of each level independently. The listed intervals of levels will be positioned according to the current value of Pxp for those levels; levels not listed will be positioned according to Bp (body position). Note that Pxp is initially defined to center all levels set with Pxpshow. Pxpshow takes effect on the next statement and remains in effect until changed.

"intervals" represents a series of intervals of levels in any of the following forms (where n and m are integers between 1 and 35):

n	Level n only
<n	Levels 1 through n-1
<=n	Levels 1 through n
>n	Levels n+1 through 35
>=n	Levels n through 35
(n, m)	Levels n+1 through m-1
[n, m)	Levels n through m-1
(n, m]	Levels n+1 through m
[n, m]	Levels n through m
All/On/Yes	Levels 1 through 35
None/Off/No/0	No levels (resets the directive)

To specify more than one interval, separate them with commas (e.g., <=3,[10,12]). You may not specify an interval from one number through a lower number (e.g., [12,10]).

Center "Center n lines"
Center=n
Range: >=0

Beginning with the current line, n lines will be centered between the left and right margins of the page area or column. The count includes blank lines. If no number is given, 1 will be assumed. Center will override any other horizontal positioning directives (such as Bp, Hp, etc.).

Justify "Fully justify n lines"
Justify=n
Range: >=0

This directive fully justifies n lines, beginning with the current line, i.e., it adds spacing so that the last character of each line will be aligned with the right margin. If n is not specified, one line will be justified. Justify will override any other horizontal positioning directives (such as Bp, Hp, etc.). On devices with monospaced type only, Justify adds spaces after punctuation and long words where possible. This directive takes effect in the current line.

Setl "Set n lines flush left"
Setl=n
Range: >=0

Setl sets the next n lines, including the current line, flush to the left margin. If you use Setl to set lines in a statement, the lines are set flush to the statement's left margin; in a header or footer, they are set flush to the header or footer left margin. If no number is given, 1 is assumed. Setl will override any other horizontal positioning directives (such as Bp, Hp, etc.).

Setr "Set n lines flush right"
Setr=n
Range: >=0

Setr sets the next n lines, including the current line, flush to the right margin. If you use Setr to set lines in a statement, the lines are set flush to the body right margin; in a header or footer, they are set flush to the header or footer right margin. If no number is given, 1 is assumed. Setr will override any other horizontal positioning directives (such as Bp, Hp, etc.).

Split "Split line"
Split

The text in the current line to the left of this directive will be set flush left, and the text to the right of the directive will be set flush right. This is particularly useful in formatting headers and footers.

Leading (photocomposition only)

Ylead "Leading"
Ylead=m
Initial value: 2p

For photocomposition only. Ylead controls leading for photocomposed text. There will be m amount of blank space following every line of type. One line space, the amount of vertical space taken up by a line of text, is equal to the current type size plus the leading. Determine the amount of leading according to the type face, type size, and line length you are using. A general rule of thumb is that leading should be no more than 25% of the point size of the body type. Ylead takes effect for the next line. Note: You can use the directive Ybl along with Ylead to put additional vertical space between lines.

Pxylead "Leading by level"
Pxylead[level]=m
Initial value: 2p

For photocomposition only. Pxylead controls the leading for the individual levels set by Pxyleadshow. If you omit [level], the directive applies to all levels set by Pxyleadshow. There will be m amount of blank space following every line of type at the given level. Pxylead takes effect in the next statement.

Pxyleadshow "Levels for Pxylead"
Pxyleadshow=intervals
Initial value: 0
Range: [0, 35]

For photocomposition only. Pxyleadshow sets the intervals of levels for which Pxylead will take effect. If a level is listed in Pxyleadshow but not specified in a Pxylead directive, the initial value of 2 points will be used. Pxyleadshow takes effect in the next statement.

"intervals" represents a series of intervals of levels in any of the following forms (where n and m are integers between 1 and 35):

n	Level n only
<n	Levels 1 through n-1
<=n	Levels 1 through n
>n	Levels n+1 through 35
>=n	Levels n through 35
(n, m)	Levels n+1 through m-1
[n, m)	Levels n through m-1
(n, m]	Levels n+1 through m
[n, m]	Levels n through m
All/On/Yes	Levels 1 through 35
None/Off/No/0	No levels (resets the directive)

To specify more than one interval, separate them with commas (e.g., <=3,[10,12]). You may not specify an interval from one number through a lower number (e.g., [12,10]).

Columns (photocomposition only)

Columns "Number of columns on a page"
Columns=n
Initial value: 1
Range: [1, 4]

For photocomposition only. Beginning with the next statement, there will be n columns on the page, with Xbc determining the horizontal distance between the columns. When you change the number of columns, the next statement will appear in the left column below the lowest y coordinate yet written on the page. If you are printing right statement numbers, you will probably want to define them in terms of the apparent right margins (otherwise the numbers for all the columns will appear in the same place). To do so, redefine Snf and set Snfrel to On. (See Snfrel.)

Xbc "Horizontal distance between columns"
Xbc=n,m
Initial value: 0.25
Range: [0, Xmax]

For photocomposition only. When there is more than one column, there will be n blank character positions between the end of one column and the beginning of the next. Alternatively, you may give this distance in photocomposition measure by specifying m (Xbc=,m). If you specify both n and m, m replaces n. Xbc takes effect at the next occurrence of a pagination, a columnation, or a change in the number of columns.

Yfc "Vertical distance following change in columns"
Yfc=n,m
Initial value: 0.5
Range: [0, Ymax]

For photocomposition only. n blank lines will be generated after each change in the number of columns (see Columns). Alternatively, you may give this distance in photocomposition measure by specifying m (Yfc=,m). If you specify both n and m, m replaces n. The actual blank space after a change in the number of columns will be Yfc+Ybs. The tops of the columns will be lined up.

Paginating

Numdash "Number of dashes at page breaks"
Numdash=n
Initial value: 0/9
Range: [0, Xmax]

When Numdash is set to other than 0, n dashes (or whatever character you set with the Dash directive) will be printed at page breaks to show where the page ends. The initial value is 9 for output to a display or typewriter terminal (unless you choose to wait at page breaks) and 0 on all other devices.

Dash "Dash character for page breaks"
Dash=character
Initial value: '-
Range: [0B, 177B]

Dash sets the "dash" character to any desired character for printing at each page break when the Numdash directive is in effect. The character may be expressed in ASCII code (e.g., 72B) or typed in with a preceding apostrophe. For example, you may print a row of Q's at each page break if desired (Dash='Q). This directive does not apply to dashes within the text. (Characters within the text can be changed on output using the Code directive.) The Dash directive takes effect immediately and remains in effect until changed.

Pbl "Paginate before line"
Pbl=n
Range: [1, 75]

Pbl forces a new page that begins with the current line. If Pbl equals a number greater than 1, blank pages will appear. There will be one blank page for every number above 1; that is, Pbl=2 will generate one blank page, Pbl=11 will generate 10 blank pages, etc. Pbl=1 forces pagination without creating blank pages. If no number is given, 1 will be assumed. Directives in this line (and any remaining lines in the statement) will be interpreted as if they appeared before the pagination.

Pbs "Paginate before statement"
Pbs=n
Range: [1, 75]

Pbs forces a new page that begins with the current statement. If Pbs equals a number greater than 1, blank pages will appear. There will be one blank page for every number above 1; that is, Pbs=2 will generate one blank page, Pbs=11 will generate 10 blank pages, etc. Pbs=1 forces pagination without creating blank pages. If no number is given, 1 will be assumed. Directives in this statement will be interpreted as if they appeared before the pagination.

Pel "Paginate at end of line"
Pel=n
Range: [1, 75]

Pel forces a new page that begins with the next line (or, if there are no more lines in the statement, with the next statement). If Pel equals a number greater than 1, blank pages will appear. There will be one blank page for every number above 1; that is, Pel=2 will generate one blank page, Pel=11 will generate 10 blank pages, etc. Pel=1 forces pagination without creating blank pages. If no number is given, 1 will be assumed. Directives in any remaining lines in the statement will be interpreted as if they appeared before the pagination.

Pes "Paginate at end of statement"
Pes=n
Range: [1, 75]

Pes forces a new page that begins with the next statement. If Pes equals a number greater than 1, blank pages will appear. There will be one blank page for every number above 1; that is, Pes=2 will generate one blank page, Pes=11 will generate 10 blank pages, etc. Pes=1 forces pagination without creating blank pages. If no number is given, 1 will be assumed.

Pfit "Paginate to fit statements"
Pfit=On/Off
Initial value: Off

When Pfit is On, pagination will occur before a statement if the statement will not completely fit on the page. If no argument is given, On will be assumed. Pfit affects the current statement and all thereafter until changed.

Plev "Paginate before statements of level n or higher"
Plev=n
Initial value: 0

Pagination will occur before every statement of level n or above level n. Directives in the first statement following the pagination will be interpreted as if they appeared on the previous page (e.g., Pn). Plev will be ignored if pagination would automatically occur at that point. To turn off this option, set Plev to 0. Plev affects the current statement and all thereafter until changed.

Grab "Paginate if n lines do not fit on page"
Grab=n,m
Range: [0, Ymax]

Grab will force pagination if too few lines of a statement will end up on the bottom of a page. Pagination (or, on photocomposition, columnation) will occur if n lines, beginning with the first line of the current statement, will not fit on the current page (or column). The count includes all blank vertical space and overflow lines. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Grab=,m), nothing will happen on nonphotocomposition devices. If m is not specified on output to photocomposition, the Output Processor will calculate the size of a line by adding the type size and the leading. When m is specified, the distance is measured from the top of the first line in the current statement. Grab is commonly used to avoid heading widows, e.g., to ensure that a chapter head is not the last line on a page.

Pxgrab "Paginate to fit n lines for specific levels"
Pxgrab [level] =n,m
Initial value: 0
Range: [0, Ymax]

Pxgrab will force pagination if too few lines of a statement will end up on the bottom of a page. For each statement at the given level, pagination will occur if n lines, beginning with the first line of the statement, will not fit on the current page. The count includes all blank vertical space and overflow lines. The level must be set by Pxgrabshow. If you omit [level], the directive applies to all levels set by Pxgrabshow. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Pxgrab [level] =,m), nothing will happen on nonphotocomposition devices. If m is not specified on output to photocomposition, the Output Processor will calculate the size of a line by adding the type size and the leading. You could, e.g., use Pxgrab to ensure that there are at least two lines of a statement at the bottom of every page (Pxgrabshow=All and Pxgrab=2).

Pxgrab takes effect on the next statement and remains in effect until changed. If a Grab directive is included in a statement affected by Pxgrab, the Grab directive will override Pxgrab.

Pxgrabshow "Levels for Pxgrab"
Pxgrabshow=intervals
Initial value: 0
Range: [0, 35]

Pxgrabshow sets the levels for which Pxgrab will take effect. Pxgrabshow takes effect at the beginning of the next statement and remains in effect until changed.

"intervals" represents a series of intervals of levels in any of the following forms (where n and m are integers between 1 and 35):

n	Level n only
<n	Levels 1 through n-1
<=n	Levels 1 through n
>n	Levels n+1 through 35
>=n	Levels n through 35
(n, m)	Levels n+1 through m-1
[n, m)	Levels n through m-1
(n, m]	Levels n+1 through m
[n, m]	Levels n through m
All/On/Yes	Levels 1 through 35
None/Off/No/0	No levels (resets the directive)

To specify more than one interval, separate them with commas (e.g., <=3,[10,12]). You may not specify an interval from one number through a lower number (e.g., [12,10]).

Widowl "Minimum number of widowed lines on next page"
Widowl=n
Initial value: 2
Range: [0, Ymax]

At least n lines of a statement must appear together at the top of each page (or, on photocomposition, column). If filling a page (or column) would leave between 1 and n-1 lines for the next page (or column), a pagination (or columnation) will occur n lines from the end of the statement (if the statement is at least n lines long). Widowl takes effect beginning with the current statement.

Evenpage "Ensure an even page"
Evenpage

The Output Processor will make sure that the current page will be an even numbered page. If it would fall on an odd numbered page, pagination will occur before the current statement. Verso (a printer's term for left or back page) is a synonym for Evenpage.

Oddpage "Ensure an odd page"
Oddpage

The Output Processor will make sure that the current page will be an odd numbered page. If it would fall on an even numbered page, pagination will occur before the current statement. Recto (a printer's term for right page) is a synonym for Oddpage.

Psw "Pagination switch"
Psw=On/Off
Initial value: On

When Psw is Off, no page breaks will be made. The output will be in continuous form. There will be no page numbers, headers, footers, or dashes at end of page. Page size and pagination directives will be meaningless. This directive takes effect immediately.

Columnating (photocomposition only)

Cbl "Columnate before line"
Cbl

For photocomposition only. Cbl causes columnation (or pagination if Columns=1) before the current line. Directives in this line (and remaining lines in the statement, if any) will be interpreted as if they appeared in the previous column (or on the previous page if Columns=1).

Cbs "Columnate before statement"
Cbs

For photocomposition only. Cbs causes columnation (or pagination if Columns=1) before the current statement. Directives in this statement will be interpreted as if they appeared in the previous column (or on the previous page if Columns=1).

Cel "Columnate at end of line"
Cel

For photocomposition only. Cel causes columnation (or pagination if Columns=1) at the end of the current line.

Ces "Columnate at end of statement"
Ces

For photocomposition only. Ces causes columnation (or pagination if Columns=1) at the end of the current statement.

Cfit "Columnate to fit statements"
Cfit=On/Off
Initial value: Off

For photocomposition only. When Cfit is On, a new column will be started if a statement will not entirely fit in the current column. If no argument is given, On will be assumed. Cfit affects the current statement and all thereafter until changed.

Clev "Columnate before statements of level n or higher"
Clev=n
Initial value: 0
Range: >=0

For photocomposition only. A new column will be started before every statement of level n or above level n. Clev will be ignored if a columnation would automatically occur at that point. To turn off this option, set Clev to 0. Clev affects the current statement and all thereafter until changed.

Hyphenating

Hyphenate "Hyphenate words at ends of lines"
Hyphenate=On/Off
Initial value: Off

When Hyphenate is On and a word cannot fit on a line, the following steps will be taken: If the word consists of 5 or fewer letters, it will be placed on the next line. If the word contains a hyphen, it will be broken at the hyphen and the second part placed on the next line. If neither of the above is true, the hyphenation dictionary will be checked. If the word is not found in the dictionary, it will be placed on the next line. If it is found, the word will be broken at a point allowed in the dictionary; the first part and a hyphen will appear on the first line, and the rest will appear on the second line. If there is a choice of breakpoints, as much of the word as possible will appear on the first line. If no argument is given, On will be assumed.

Hyphenate takes effect on the next line; it will function regardless of whether the lines are being justified on the right, i.e., according to Bp (body position) or other horizontal positioning directives.

Diagrams And Illustrations

Photo "Insert photograph"
Photo=catnum,(x,y),(x,y)

For photocomposition only. The page on which the first character of the current statement appears will have the specified line drawing or half-tone photograph superimposed on the page within the given coordinates. The first number, catnum, is the catalog number of the photograph. The remaining numbers locate the corners of the photo area: The second number is the x coordinate of the upper-left corner; the third number is the y coordinate of the upper-left corner; the fourth number is the x coordinate of the lower-right corner; the last number is the y coordinate of the lower-right corner. All five numbers must be specified. You may omit the parentheses. The photo will be an overlay, so unless you want text within the picture area, you must allow room for the photo. The use of Gybs or Gyes might prove helpful for this. Arrangements must be made with Feedback to have a copy of the photo sent to a photocomposition vendor.

Diasid "Insert diagram"
Diasid=sid,n,m
Range: [0, Ymax]

The diagram attached to the statement with the given SID will be portrayed where this directive appears. The entire width of the current body (or column) is available for the width of the diagram; level indenting is ignored. n and m set the height of the diagram. n is the number of line spaces to be set aside on output to nonphotocomposition devices (for printing drafts); m is a photocomposition measurement for the height of the diagram. No more than one Diasid may appear in a statement.

The proportions of the diagram as specified in the Graphics subsystem are preserved. If the proportional width would be greater than the column width available, the diagram will be reduced to fit the available width. The rest of the given height will be filled with white space on the top and bottom equally. If the proportional width is less than the column width, the diagram will be horizontally centered in the column with white space on either side. Only characters and portions of figures falling within the diagram's current Graphics margins will be portrayed.

Dialm "Diagram left margin"
Dialm=n,m
Initial value: 0
Range: [0, Xmax-Lmbase]

For photocomposition only. Dialm moves or reduces a diagram if necessary to provide the given amount of white space between the edge of the diagram and Lm. Initially, no white space is provided; the diagram bleeds to the margin. n defines the white space in character positions; m is a photocomposition measure and replaces n when both n and m are specified. The diagram may be moved right and, if necessary, proportionally reduced. If the diagram's height as specified by Diasid causes enough white space to be left on the sides, Dialm will not reduce the diagram. (See Diasid.) If reduction is necessary, additional white space will appear at the top and bottom of the diagram to fill out the height specified by Diasid. Dialm affects diagrams in the current statement and subsequent statements.

Diarm "Diagram right margin"
Diarm=n,m
Initial value: 0
Range: [0, Xmax-Lmbase]

For photocomposition only. Diarm moves or reduces a diagram if necessary to provide the given amount of white space between the edge of the diagram and Brm (or the column's right margin). Initially, no white space is provided; the diagram bleeds to the margin. n defines the white space in character positions; m is a photocomposition measure and replaces n when both n and m are specified. The diagram may be moved left and, if necessary, proportionally reduced. If the diagram's height as specified by Diasid causes enough white space to be left on the sides, Diarm will not reduce the diagram. (See Diasid.) If reduction is necessary, additional white space will appear at the top and bottom of the diagram to fill out the height specified by Diasid. Diarm affects diagrams in the current statement and subsequent statements.

Diatm "Diagram top margin"
Diatm=n,m
Initial value: 0
Range: [0, Ymax]

For photocomposition only. Diatm moves or reduces a diagram if necessary to provide the given amount of white space between the top edge of the diagram and the bottom of the preceding line of printing. Initially, no white space is provided; the diagram bleeds to the bottom of the preceding line. n defines the white space in line spaces; m is a photocomposition measure and replaces n when both n and m are specified. The diagram may be moved down and, if necessary, proportionally reduced. If the diagram's proportions and height as specified by Diasid already cause enough white space to be left on the top and bottom, Diatm will not reduce the diagram. (See Diasid.) If reduction is necessary, additional white space will appear at the sides of the diagram. Diatm does not affect the distance between the text preceding and following Diasid; only the distance between the top and bottom of the diagram itself is reduced. Diatm affects diagrams in the current statement and subsequent statements.

Diabm "Diagram bottom margin"
Diabm=n,m
Initial value: 0
Range: [0, Ymax]

For photocomposition only. Diabm moves or reduces a diagram if necessary to provide the given amount of white space between the bottom edge of the diagram and the top of the following line of printing. Initially, no white space is provided; the diagram bleeds to the top of the next line. n defines the white space in line spaces; m is a photocomposition measure and replaces n when both n and m are specified. The diagram may be moved up and, if necessary, proportionally reduced. If the diagram's proportions and height as specified by Diasid already cause enough white space to be left on the top and bottom, Diabm will not reduce the diagram. (See Diasid.) If reduction is necessary, additional white space will appear at the sides of the diagram. Diabm does not affect the distance between the text preceding and following Diasid; only the distance between the top and bottom of the diagram itself is reduced. Diabm affects diagrams in the current statement and subsequent statements.

Special Text

Statement names

Names "Statement names switch"
Names=On/Off
Initial value: AUGMENT

This directive will override the current AUGMENT viewspecs. If you set Names to Off, it will suppress the output of statement names; if you set it to On, statement names will be printed. This directive takes effect on the next statement.

Statement signatures

Sigf "Statement signatures position"
Sigf=n,m
Initial value: AUGMENT
Range: [-Xmax, Xmax-Lmbase]

When n is other than 0, statement signatures will be printed right justified to position n, after the last of the text of the statement. If Sigfrel is Off, n is to the right of Lmbase (or, if n is less than 20, statement signatures will be printed flush left). If Sigfrel is On, n is to the right (or if negative, to the left) of the apparent right margin. The apparent right margin is the body right margin unless multiple columns are being printed, in which case it is the column right margin. When AUGMENT viewspecs specify something different from Sigf, Sigf takes effect instead of the viewspecs. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Sigf=,m), the nonphotocomposition value will not be changed. When signatures are on in AUGMENT, the initial value is 72 on nonphotocomposition devices and 6.5 on photocomposition devices. Sigf takes effect beginning with the current statement.

The Output Processor will attempt to put the statement signature on the same line as the last line of the statement. If the signature would overlap the text of the statement, it will instead be printed in the blank line following the statement. If there are no blank lines between statements, a blank line will be created to accommodate the signature. Statement numbers have precedence and will be printed first in case of overlap. (Signatures will be printed on the next line.) Two items of text "overlap" if there is not at least one space between them. Indentation, Lm, and Rm settings do not affect signatures. The signature will always appear on the same page as the last line of its statement (unless there is a Pel in that line).

Sigfrel "Statement signatures position relative to right margin"
Sigfrel=On/Off
Initial value: Off

When Sigfrel is On, the value of Sigf will be taken relative to the apparent right margin. When Sigfrel is Off, Sigf will be counted from Lmbase as usual. This directive is particularly useful for photocomposition when there is more than one column and therefore multiple column right margins, since only the farthest right body margin on the page can be set specifically (with Rm, Brm). If statement signatures are taken relative to Lmbase (when Sigfrel is Off), the signatures for both columns will be right justified to the same place. Sigfrel can be used to position signatures to the right of each column. Sigfrel takes effect on the current statement.

Gsig "Generate text for statement signature"
Gsig

Gsig immediately generates the following text: the ident of the person who last changed the current statement, a space, the date the last change was made, a space, and the time of last change. It occupies from 17 to 20 character positions.

Gid "Generate text for ident"
Gid

Gid immediately generates the text for the ident of the person who last changed the current statement. It occupies from 1 to 4 character positions.

Statement numbers/SIDs

Sn "Left statement numbers switch"
Sn=On/Off
Initial value: AUGMENT

When Sn is On, statement numbers will be printed at the left of each statement. When AUGMENT viewspecs specify something different from Sn, Sn takes effect instead of the viewspecs. Left statement numbers are completely independent of right

statement numbers, so if Sn is On and Snf is other than 0, two sets of statement numbers will be printed. Sn takes effect on the next statement.

Snshow "Show left statement numbers for these levels"
Snshow=intervals
Initial value: AUGMENT
Range: [0, 35]

Snshow limits the printing of left statement numbers to only the given intervals of levels. Left statement numbers will be printed only if allowed by either the Sn directive or the AUGMENT viewspecs. Snshow takes effect on the next statement and remains in effect until set to Off or changed by a subsequent Snshow directive.

"intervals" represents a series of intervals of levels in any of the following forms (where n and m are integers between 1 and 35):

n	Level n only
<n	Levels 1 through n-1
<=n	Levels 1 through n
>n	Levels n+1 through 35
>=n	Levels n through 35
(n, m)	Levels n+1 through m-1
[n, m)	Levels n through m-1
(n, m]	Levels n+1 through m
[n, m]	Levels n through m
All/On/Yes	Levels 1 through 35
None/Off/No/0	No levels (resets the directive)

To specify more than one interval, separate them with commas (e.g., <=3,[10,12]). You may not specify an interval from one number through a lower number (e.g., [12,10]).

Sntype "Left statement numbering type"
Sntype=n
Initial value: AUGMENT

Sntype specifies the type of statement numbering to be printed at the left of statements when the Sn and Snshow directives or the AUGMENT viewspecs are permitting those statements to be numbered. The number, followed by one space, precedes the leading spaces at the beginning of the first output line of each statement. If Sntype is not used, the type of left numbering is determined by which AUGMENT viewspec I/J is in effect at the time of processing (whether or not viewspec m is on). Sntype takes effect beginning with the next statement.

Specify one of the following after the equal sign:

Dec	1	SIDs in decimal numbers (01, 02, 03, etc.)
Snum	7	statement numbers (1, 1a, 1a1, etc.)
Dotnum	8	dot numbers (1, 1.1, 1.1.1, etc.)

You may use either the alphabetic equivalents or the numbers (e.g., either Dotnum or 8).

To enclose the number, add one of the following to the number that specifies type:

Parens	10	enclose number in (parentheses)
Brackets	20	enclose in [brackets]
Angles	30	enclose in <angle brackets>
Hyphens	40	enclose in -hyphens-

To print a character after the number, add one of the following to the number that specifies type:

Period	100	follow number (and enclosing character) with a period
Colon	200	follow number (and enclosing character) with a colon

To print two spaces rather than one after the number and any enclosing characters and/or punctuation, add the following to the number that specifies type:

Space	1000	follow number with a second space

For example, either 1000+200+30+1 or 1231 or Space+Colon+Angles+Dec will produce decimal numbers in the form "<01>:" followed by two spaces.

Snf "Right statement numbers position"
Snf=n,m
Initial value: AUGMENT
Range: [-Xmax, Xmax-Lmbase]

When Snf is other than 0, statement numbers will be printed right justified to position n, after the last of the text of the statement. If Snfrel is Off, n is to the right of Lmbase (or, if n is negative, statement numbers will be printed flush left). If Snfrel is On, n is to the right (or if negative, to the left) of the apparent right margin. The apparent right margin is the body right margin unless multiple columns are being printed, in which case it is the column right margin. When AUGMENT viewspecs specify something different from Snf, Snf takes effect instead of the viewspecs. Optionally, m may be specified; m is a photocomposition mea-

sure and replaces n on output to photocomposition. If only m is specified (Snf=,m), the nonphotocomposition value will not be changed. When right statement numbers are on in AUGMENT, the initial value is 72 on nonphotocomposition devices, 6.5 on photocomposition devices. Snf takes effect beginning with the current statement.

The Output Processor will attempt to put the statement number on the same line as the last line of the statement. If the statement number would overlap the text of the statement, it will instead be printed in the blank line following the statement. If there is no blank line following the statement, a blank line will be created to accommodate the statement number. Two items of text "overlap" if there is not at least one space between them. The statement number will always appear on the same page as the last line of its statement (unless there is a Pel in that line). Snf is not affected by indentation, Lm, or Rm settings.

Snfrel "Right statement numbers position relative to right margin"
Snfrel=On/Off
Initial value: Off

When Snfrel is On, the value of Snf will be taken relative to the apparent right margin. When Snfrel is Off, Snf will be counted from Lmbase as usual. On photocomposition devices, you may define more than one column on a page (see Columns). This directive is particularly useful in such a situation, since for more than one column, there are multiple apparent right margins (although only one actual right margin on the page). If right statement numbers are taken relative to Lmbase, the numbers for both columns will appear in the same place. Snfrel will put statement numbers applying to the left column between the columns. Snfrel takes effect on the current statement.

Snfshow "Show right statement numbers for these levels"
Snfshow=intervals
Initial value: All
Range: [0, 35]

Snfshow limits the printing of right statement numbers to only the given intervals of levels. Right statement numbers will be printed only if Snf is set to a value other than 0 or if Snf is not used and the AUGMENT viewspecs are causing right statement numbers to appear. (See Snf.) Snfshow takes effect beginning with the current statement and remains in effect until set to Off or changed by a subsequent Snfshow directive.

"intervals" represents a series of intervals of levels in any of the following forms (where n and m are integers between 1 and 35):

n	Level n only
<n	Levels 1 through n-1
<=n	Levels 1 through n
>n	Levels n+1 through 35
>=n	Levels n through 35
(n, m)	Levels n+1 through m-1
[n, m)	Levels n through m-1
(n, m]	Levels n+1 through m
[n, m]	Levels n through m
All/On/Yes	Levels 1 through 35
None/Off/No/0	No levels (resets the directive)

To specify more than one interval, separate them with commas (e.g., <=3,[10,12]). You may not specify an interval from one number through a lower number (e.g., [12,10]).

Snftype "Right statement numbering type"
Snftype=n
Initial value: AUGMENT

Snftype specifies the type of statement numbering to be printed at the right of statements when the Snf and Snfshow directives or the AUGMENT viewspecs are permitting those statements to be numbered. The position of the number is determined by the Snf and Snfrel directives. If Snftype is not used, the type of right numbering is determined by which AUGMENT viewspec I/J is in effect at the time of processing (whether or not viewspec m is on). Snftype takes effect beginning with the current statement.

Specify one of the following after the equal sign:

Dec	1	SIDs in decimal numbers (01, 02, 03, etc.)
Snum	7	statement numbers (1, 1a, 1a1, etc.)
Dotnum	8	dot numbers (1, 1.1, 1.1.1, etc.)

You may use either the alphabetic equivalents or the numbers (e.g., either Dotnum or 8).

To enclose the number, add one of the following to the number that specifies type:

Parens	10	enclose number in (parentheses)
Brackets	20	enclose in [brackets]
Angles	30	enclose in <angle brackets>
Hyphens	40	enclose in -hyphens-

To print a character after the number, add one of the following to the number that specifies type:

Period	100	follow number (and enclosing character) with a period
Colon	200	follow number (and enclosing character) with a colon

For example, either 200+30+1 or 231 or Colon+Angles+Dec will produce decimal numbers in the form "<01>:"

Page numbers

Pn "Current page number"
Pn=n

Pn sets the current page number to n. The first page of output is initially numbered 1. You may set Pn to 0 to cause the following page to be numbered 1. Negative numbers may also be used. You can make calculations in the argument of this directive, e.g., Pn=Pn-1 would cause a page to be numbered the same as the previous page. You can also use Pn in the argument of another directive. Note that if Pn is in a line or a statement before which a pagination occurred due to a directive such as Pbl, Pbs, or Plev, the Pn will apply to the page on which the line or statement would have appeared had there not been a pagination directive, not to the page on which that line or statement actually appears.

Gpn "Generate text for current page number"
Gpn=n

Gpn immediately generates the text for the current page number, in the form determined by n. When no argument is given, the page number is generated in the form determined by Pntype. The current page number may be controlled by Pn. Warning: When choosing enclosing characters for generated numbers, do not specify that the number should be preceded by the same character you are using for the directive left delimiter.

Specify one of the following after the equal sign:

Dec	1	decimal numbers
Lr	2	lower case roman numerals
Ur	3	upper case roman numerals
Ll	4	lower case letters
Ul	5	upper case letters
Oct	6	octal numbers

You may use either the alphabetic equivalents or the numbers (e.g., either Ur or 3).

To enclose the number, add one of the following to the number that specifies type:

Parens	10	enclose number in (parentheses)
Brackets	20	enclose in [brackets]
Angles	30	enclose in <angle brackets>
Hyphens	40	enclose in -hyphens-

To print a character after the number, add one of the following to the number that specifies type:

Period	100	follow number (and enclosing character) with a period
Colon	200	follow number (and enclosing character) with a colon

For example, either 200+30+1 or 231 or Colon+Angles+Dec would refer to decimal numbers in the form "<1>:"

Pntype "Page number type"
Pntype=n
Initial value: 1

Pntype controls the type of numbers generated by the Gpn directive. It takes effect immediately.

Specify one of the following after the equal sign:

Dec	1	decimal numbers
Lr	2	lower case roman numerals
Ur	3	upper case roman numerals
Ll	4	lower case letters
Ul	5	upper case letters
Oct	6	octal numbers

You may use either the alphabetic equivalents or the numbers (e.g., either Ur or 3).

To enclose the number, add one of the following to the number that specifies type:

Parens	10	enclose number in (parentheses)
Brackets	20	enclose in [brackets]
Angles	30	enclose in <angle brackets>
Hyphens	40	enclose in -hyphens-

To print a character after the number, add one of the following to the number that specifies type:

Period	100	follow number (and enclosing character) with a period
Colon	200	follow number (and enclosing character) with a colon

For example, either 200+30+1 or 231 or Colon+Angles+Dec will produce decimal numbers in the form "<1>:"

Numbers

Plexnum "Number plex below current statement"
Plexnum=n

The statements in the plex that is one level down from the current statement are numbered as specified by n (i.e., you must put the Plexnum directive in the statement one level up from the plex you wish numbered). The number, followed by one space, precedes the leading spaces at the beginning of the first output line of each statement in the plex. These numbers will replace statement numbers if statement numbers would otherwise be printed on the left. The numbers will be printed in the font in which the statement is initialized (as determined by either Bfont or the Pxfont for that level). Plexnum takes effect beginning with the next statement. If you wish to number plexes within plexes, use the more versatile Pxn and Pxnshow directives.

Specify one of the following after the equal sign:

Dec	1	decimal numbers (1, 2, 3, etc.)
Lr	2	lower case roman numerals
Ur	3	upper case roman numerals
Ll	4	lower case letters
Ul	5	upper case letters
Oct	6	octal numbers
Snum	7	statement numbers (1, 1a, 1a1, etc.)
Dotnum	8	dot numbers (1, 1.1, 1.1.1, etc.)

You may use either the alphabetic equivalents or the numbers (e.g., either Dotnum or 8). When one of the numbering types 1 through 6 is used, the count starts with 1 at the first statement of the plex; when 7 or 8 is used, a statement's position in the hierarchy of the file determines its number.

To enclose the number, add one of the following to the number that specifies type:

Parens	10	enclose number in (parentheses)
Brackets	20	enclose in [brackets]
Angles	30	enclose in <angle brackets>
Hyphens	40	enclose in -hyphens-

To print a character after the number, add one of the following to the number that specifies type:

Period	100	follow number (and enclosing character) with a period
Colon	200	follow number (and enclosing character) with a colon

To print two spaces rather than one after the number and any enclosing characters and/or punctuation, add the following to the number that specifies type:

Space	1000	follow number with a second space

For example, either 1000+200+30+1 or 1231 or Space+Colon+Angles+Dec will produce decimal numbers in the form "<1>:" followed by two spaces.

Pxn "Number statements by level"
Pxn [level] =n
Initial value: 8

Pxn specifies the type of numbering to be used at the given level, when Pxnshow is set for that level. The number, followed by one space, precedes the leading spaces at the beginning of the first output line of each statement. If you omit [level], the directive applies to all levels. Pxn takes effect beginning with the next statement.

Specify one of the following after the equal sign:

Dec	1	decimal numbers (1, 2, 3, etc.)
Lr	2	lower case roman numerals
Ur	3	upper case roman numerals
Ll	4	lower case letters
Ul	5	upper case letters
Oct	6	octal numbers
Snum	7	statement numbers (1, 1a, 1a1, etc.)
Dotnum	8	dot numbers (1, 1.1, 1.1.1, etc.)

You may use either the alphabetic equivalents or the numbers (e.g., either Dotnum or 8). When one of the numbering types 1 through 6 is used, the count starts with 1 at the first statement of the

given level; when 7 or 8 is used, a statement's position in the hierarchy of the file determines its number.

To enclose the number, add one of the following to the number that specifies type:

Parens	10	enclose number in (parentheses)
Brackets	20	enclose in [brackets]
Angles	30	enclose in <angle brackets>
Hyphens	40	enclose in -hyphens-

To print a character after the number, add one of the following to the number that specifies type:

Period	100	follow number (and enclosing character) with a period
Colon	200	follow number (and enclosing character) with a colon

To print two spaces rather than one after the number and any enclosing characters and/or punctuation, add the following to the number that specifies type:

Space	1000	follow number with a second space

For example, either 1000+200+30+1 or 1231 or Space+Colon+Angles+Dec will produce decimal numbers in the form "<1>:" followed by two spaces.

Pxnshow "Levels for Pxn"
Pxnshow=intervals
Initial value: 0
Range: [0, 35]

The listed intervals of levels will be numbered according to the current value of Pxn for those levels. Pxnshow takes effect on the next statement and remains in effect until changed.

"intervals" represents a series of intervals of levels in any of the following forms (where n and m are integers between 1 and 35):

n	Level n only
<n	Levels 1 through n-1
<=n	Levels 1 through n
>n	Levels n+1 through 35
>=n	Levels n through 35
(n, m)	Levels n+1 through m-1
[n, m)	Levels n through m-1
(n, m]	Levels n+1 through m
[n, m]	Levels n through m
All/On/Yes	Levels 1 through 35
None/Off/No/0	No levels (resets the directive)

To specify more than one interval, separate them with commas (e.g., <=3,[10,12]). You may not specify an interval from one number through a lower number (e.g., [12,10]).

Gn "Generate text for number"
Gn=n

Gn immediately generates the text for any number n, in the form determined by Gntype. The user storage directives (see U0) are often used in the argument of this directive. For example, you can print the page number of previous text using "See page .Gn=U2;" if you stored the page number in U2 earlier (U2=Pn).

Gntype "Numbering type for Gn"
Gntype=n
Initial value: 1

Gntype controls the type of numbers generated by the Gn directive. Warning: When choosing enclosing characters for generated numbers, do not specify that the number should be preceded by the same character you are using for the directive left delimiter. Gntype takes effect immediately.

Specify one of the following after the equal sign:

Dec	1	decimal numbers
Lr	2	lower case roman numerals
Ur	3	upper case roman numerals
Ll	4	lower case letters
Ul	5	upper case letters
Oct	6	octal numbers

You may use either the alphabetic equivalents or the numbers (e.g., either Ur or 3).

To enclose the number, add one of the following to the number that specifies type:

Parens	10	enclose number in (parentheses)
Brackets	20	enclose in [brackets]
Angles	30	enclose in <angle brackets>
Hyphens	40	enclose in -hyphens-

To print a character after the number, add one of the following to the number that specifies type:

Period	100	follow number (and enclosing character) with a period
Colon	200	follow number (and enclosing character) with a colon

For example, either 200+30+1 or 231 or Colon+Angles+Dec will produce decimal numbers in the form "<1>:"

Date and time

Gd "Generate text for current date"
Gd

Gd immediately generates the text for the current date (e.g., 22 Feb 78). It occupies 9 character positions. The text will begin with a space if the day of the month is less than 10.

Gt "Generate text for current time"
Gt

Gt immediately generates the text for the current time (e.g., 10:30am). It occupies 7 character positions.

Gdt "Generate text for current date and time"
Gdt

Gdt immediately generates the text for the current date, a space, and then the current time (e.g., 22 Feb 78 10:30am). It occupies 17 character positions. The text will begin with a space if the day of the month is less than 10.

Gdc "Generate text for date of creation or last change"
Gdc

Gdc immediately generates the text for the date of the last change to the current statement or, if the statement has not been changed, the date it was created (e.g., 9-Jan-78). It occupies 8 or 9 character positions.

Gdtc "Generate text for date and time of creation or last change"
Gdtc

Gdtc immediately generates the text for the date and time of the last change to the current statement or, if the statement has not been changed, the date and time it was created (e.g., 9-Jan-78 13:06). It occupies 14 or 15 character positions.

Leaders

Dotsplit "Split line with dots"
Dotsplit

The text in the current line to the left of the directive will be set flush left, and the text to the right of the directive will be set flush right. The area in between will be filled with dots (see Dot, Dotfont, and Dotspacing). Dotsplit is particularly useful in formatting indices and tables of contents.

Dotto "Fill with dots to character position"
Dotto=n,m
Range: [0, Xmax-Lmbase]

Dotto inserts dots to the given character position. The character following the directive will be in the nth position to the right of Lmbase. If you are at or beyond the given position, nothing will happen. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. The left edge of the next character will begin m distance to the right of Lmbase. In a second, third, or fourth column, m is measured from the left margin of that column; e.g., in the second column, m will be measured to the right of Lmbase+(width of first column)+Xbc. If only m is specified (Dotto=,m), nothing will happen on nonphotocomposition devices. Dotto takes effect immediately. See also: Dot, Dotfont, and Dotspacing.

Dotspacing "Spacing between dots"
Dotspacing=n,m
Initial value: 0, .05
Range: [0, Xmax-Lmbase]

Dotspacing sets spacing between dots generated by Dotsplit or Dotto. Optionally, m may be specified; m is a photocomposition measure and replaces n on output to photocomposition. If only m is specified (Dotspacing=,m), the nonphotocomposition value will not be changed. On nonphotocomposition devices, Dotspacing is the number of spaces between dots; on photocomposition, it is the distance between dots. If m is not specified, the photocomposition value will be calculated from the width of a space in the current body font. Space is inserted before and after the series of dots so that the dots will be lined up vertically, as long as Dotspacing (and, on photocomposition, Dotfont) remain constant. On nonphotocomposition devices,

there will always be at least one space before and after the series of dots. On photocomposition devices, the minimum space before and after the series of dots will be half of whichever is smaller: the value of Dotspacing or the width of a space in the current font.

Dot "Dot character"
Dot=character
Initial value: '.
Range: [0B, 177B]

Normally, when you execute a Dotsplit or Dotto directive, the space is filled with dots (periods). This directive allows you to reset the "dot" character so that the space may be filled with any character. The character may be expressed in ASCII code (e.g., 72B) or typed in with a preceding apostrophe. For example, you may want to fill the space with dashes (Dot='-).

Statement marks

Mcs "Mark changed statements"
Mcs=Off/On/(since),(before),ident
Initial value: Off

Use this directive to mark statements with a vertical bar in the left margin. You can mark all statements (Mcs=On), mark no statements (Mcs=Off), or specify arguments so that only the statements that meet a set of conditions will be marked. Three arguments can be used in any combination: since, before, and ident (see below). The level of statements to be marked can be specified with Mcslev. The position and type of marks are determined by Mcstext, Mcsline, Mcstfont, Mcstlpos, Mcstrpos, Mcstpos, Mcsrm, and Mcsonce. *Be sure to set your body margins so there is space for the mark to print.* You may use Mcsf and Mcsfsw to indicate in a footer that statements on the page have been changed. You can also count changes, mark statements individually, and mark dates, times, and idents; see Mcscn, Mcsforce, Gsig, Gdc, Gdtc, and Gid. Mcs takes effect on the next statement.

"since" means mark those statements that have been changed since the date you specify. The format of the date may be any valid Executive System date and time acceptable to the SINCE or BEFORE constructions in L10 Content Analyzer patterns. The date must be enclosed in parentheses. The order of the arguments determines how they are interpreted; the first argument is always taken as "since". If only "since" is used, no comma is needed. For example, Mcs=(23-JUL-76 10:00) would mark those statements that have changed since 23 July 1976 at 10 AM. If "since" is not specified, the beginning of time will be assumed.

"before" means mark those statements that were changed before the date you specify. The format of the date may be any valid Executive System date and time acceptable to the SINCE or BEFORE constructions in L10 Content Analyzer patterns. The date must be enclosed in parentheses. The order of the arguments determines how they are interpreted; the second argument is always taken as "before". If "before" is used with or without "since", it must be preceded by a comma. The default for "before" is the far distant future.

"ident" means mark those statements that have been changed by the person with that ident. Whenever an ident is used, two commas must precede it (one on either side of "before" when "before" is used). The ident must begin with an upper case letter. For example, the directive Mcs=(23-JUL-76 10:00),(25-JUL-76 00:00),HGL would mark only statements that were changed between the indicated dates and times by the person logged in with the ident HGL.

Mcstext "Text of statement marks"
Mcstext="string","photostring"
Initial value: vertical bar

Mcstext defines the string to be used to mark statements. Directives (surrounded by delimiters) may appear in the string; they will be executed each time the mark is printed. For example, Mcstext=".Gid;" would mark the statement with the ident of the person who last changed it. The second argument is optional and is used only on output to photocomposition. If no "photostring" is specified, the mark specified for "string" will be used for all output. If there is not enough room for the mark on one line of those allocated by Mcsline, it will be continued on following lines. If not enough space and lines are allocated, the mark will be truncated. The mark will be repeated to fill all lines allocated by Mcsline unless Mcsonce is on. A mark will not appear twice on the same line.

Mcsline "Mark statements on only these lines"
Mcsline=First/Last/intervals
Initial value: All
Range: [0, 35]

Mcsline places each statement mark on only the lines you specify. Note that the number of times the mark will appear for each statement will also be affected by the mark's length and the Mcsonce directive. Mcsline=First causes only the first line of a statement to be marked. Mcsline=Last causes only the last line of a statement to be marked.

"intervals" represents a series of intervals of lines in any of the following forms (where n and m are integers between 1 and 35):

n	Line n only
<n	Lines 1 through n-1
<=n	Lines 1 through n
>n	Lines n+1 through last line
>=n	Lines n through last line
(n, m)	Lines n+1 through m-1
[n, m)	Lines n through m-1
(n, m]	Lines n+1 through m
[n, m]	Lines n through m
All/On/Yes	All lines
None/Off/No/0	No lines (resets the directive)

To specify more than one interval, separate them with commas (e.g., <=3,[10,12]). You may not specify an interval from one line through a preceding line (e.g., [12,10]).

Mcsonce "Mark statements once"
Mcsonce=On/Off
Initial value: Off

When Mcsonce is On, the mark defined by Mcstext appears only once, at the beginning of each interval of lines allocated by Mcsline. When Mcsonce is Off, the mark will be repeated to the end of each interval of lines allocated by Mcsline. In either case, if the allocated lines and the available space on each line do not provide enough room for the whole mark defined by Mcstext, the mark will be truncated. Each instance of a mark will be wrapped around to following lines if they are available. A mark will not appear twice on the same line.

Mcstpos "Position of statement marks"
Mcstpos=n
Initial value: 1
Range: [0, 4]

Mcstpos specifies where the mark on a statement will appear with respect to the body text. The text of marks on the right will appear in the right margin, between the margins specified by Mcstrpos and Mcsrm, justified to the margin specified by Mcstrpos. The text of marks on the left will appear in the left margin, between the margins specified by Lmbase and Mcstlpos, justified to the margin specified by Mcstlpos. If Bothmark is specified, the same mark will appear on both sides of the body, and the margins specified by both Mcstlpos and Mcstrpos will apply.

The following are the position options:

Leftmark	0	mark at left
Rightmark	1	mark at right
Oddleftmark	2	mark on odd pages at left, on even pages at right
Oddrightmark	3	mark on odd pages at right, on even pages at left
Bothmark	4	mark at both left and right

You may use either the alphabetic equivalents or the numbers (e.g., either Leftmark or 0).

Mcstlpos "Position of left statement marks"
Mcstlpos=n,m
Initial value: 1
Range: [0, Blm-1]

When the mark on a statement appears to the left of the body text (as determined by Mcstpos), the rightmost character of each line of the mark will be n characters to the left of the body left margin. The mark will be right justified to this position. Optionally, m may be specified; m is a photocomposition measure of the distance between the last character of the mark and the body left margin. On output to photocomposition, the initial value is the width of a space in the current font.

Mcstrpos "Position of right statement marks"
Mcstrpos=n,m
Initial value: 1
Range: [0, Mcsrm-Brm-1]

When the mark on a statement appears to the right of the body text (as determined by Mcstpos), the leftmost character of each line of the mark will be n characters to the right of the body right margin. The mark will be left justified to this position. Optionally, m may be specified; m is a photocomposition measure of the distance between the body right margin and the first character of the mark. On output to photocomposition, the initial value is the width of a space in the current font.

Mcsrm "Right margin of statement marks"
Mcsrm=n,m
Initial value: 76/72, 6.5
Range: [0, Xmax-Lmbase]

When statements are being marked on the right (as determined by Mcstpos), Mcsrm sets the right margin for the mark to n characters to the right of Lmbase. Optionally, m may be specified; m is a photocomposition measure of the distance from Lmbase and replaces n on output to photocomposition. If only m is specified (Mcsrm=,m), the nonphotocomposition value will not be changed. The left margin of right marks is controlled by Mcstrpos. Note that right marks can only appear between Brm and Mcsrm, i.e., in the margin to the right of the body of the page. The initial value is 76 for display or typewriter terminals and 72 for all other nonphotocomposition devices.

Mcscn "Count marked statements"
Mcscn=n
Initial value: 0

Use Mcscn to record the number of marked statements. The marked statements are counted up from the number you specify. For example, if you set Mcscn=0 on every page, you could record the number of changes on each individual page. Mcscn is useful as the argument of the generate number directive (e.g., Gn=Mcscn), enabling you to print the number of changes in an entire document or on a single page. It can also be included in the text of a footer or a statement mark (e.g., Mcstext=".Gn=Mcscn; *").

Mcslev "Mark statements of only these levels"
Mcslev=intervals
Initial value: All
Range: [0, 35]

Statements will be marked only if they are in the specified intervals of levels and have met the conditions given in the Mcs directive. Mcslev takes effect beginning with the next statement.

"intervals" represents a series of intervals of levels in any of the following forms (where n and m are integers between 1 and 35):

n	Level n only
<n	Levels 1 through n-1
<=n	Levels 1 through n
>n	Levels n+1 through 35
>=n	Levels n through 35
(n, m)	Levels n+1 through m-1
[n, m)	Levels n through m-1
(n, m]	Levels n+1 through m
[n, m]	Levels n through m
All/On/Yes	Levels 1 through 35
None/Off/No/0	No levels (resets the directive)

To specify more than one interval, separate them with commas (e.g., <=3,[10,12]). You may not specify an interval from one number through a lower number (e.g., [12,10]).

Mcsforce "Force mark of statement"
Mcsforce=On/Off

Mcsforce forces the current statement to be marked (if Mcsforce=On) or not marked (if Mcsforce=Off), regardless of any other conditions controlled by Mcs or Mcslev.

Mcsf "Text of marked statements footer"
Mcsf="string"/"odd","even"
Initial value: F

When Mcsfsw is On, the string defined by Mcsf will be used in place of the standard footer text for those pages that contain a marked statement. On pages with no marks, the standard footer will appear (when Fsw=On, though Fsw does not have to be On for Mcsf and Mcsfsw to take effect). When two strings are defined in Mcsf, the first applies to odd numbered pages and the second applies to even numbered pages. Directives (surrounded by delimiters) may appear in the text of the footer; they will be executed each time the footer is printed. The Mcscn directive may be used to indi-

cate the number of changes on each page (for example, Mcsf=".Gn=Mcscn; changes on this page .Mcscn=0;"). The Mcsf footer will conform to the standard footer positioning, font, and margin directives. Mcsf takes effect on the current page.

Mcsfsw "Marked statements footer switch"
Mcsfsw=On/Off
Initial value: Off

When Mcsfsw is On, the string defined with the Mcsf directive will be printed at the bottom of each page that contains at least one marked statement (in place of the footer defined with the F directive). (If Fsw=Off, no footer will appear on pages with no marked statements.) If no string is defined for Mcsf, the footer on pages with marked statements will be no different from the footer on pages with no marked statements. When Mcsfsw is Off, the current values of the F and Fsw directives will apply.

Case

Casemode "Force case of text"
Casemode=0/1/2
Initial value: 0

Casemode sets the case mode of the text.

0	print text as it appears in the file
1	print text as lower case
2	print text as upper case

Casemode takes effect immediately and remains in effect until subsequently changed.

Character and text substitution

Tabs "Effect of tabs on output"
Tabs=0/1/2/Off/On
Initial value: 1

When Tabs is set to 0 or Off, nothing will happen when a tab is encountered in the text; when set to 1 or On, a tab will occur when the tab character is encountered; when set to 2, a single space will be printed when a tab is encountered. (See Gtab.)

Code "Change character to another character"
Code[character]=character

This directive assigns a different value to a particular character upon output wherever the character is found in the current statement and in subsequent statements, until a statement with a Code directive changing the character back to itself is reached. (The last Code directive in any statement affects the entire statement.) The character following the equal sign will be generated instead of the character specified in the brackets. Either character may be expressed in ASCII code (e.g., 121B) or typed in with a preceding apostrophe (e.g., Code['P]='Q). If a space or other invisible character is substituted by Code for a printing character, procedures to determine line breaks between visibles will take place before the substitution is made. Thus, you can prevent line breaks by inserting obscure printing characters in the text and using Code to substitute spaces for those characters.

Text "Define a name to print a text string"
Text[name]="string"

From this point on, the given name is a valid directive. When it is encountered as a directive (between the proper delimiters), the string will be printed at that point. The first character of the name must be in the case specified by the Dcase directive, normally upper case. For example, if you want header 1 to be "Input Commands", you can set Text[Xx]="Input Commands" and H1=".Xx;", and if you want the header to change for another chapter, you can do so merely by changing the Text directive, e.g., Text[Xx]="Output Commands". The given string may not contain another Text directive, although other directives may be included. The end of the string is a double quote mark immediately followed by the directive right delimiter; therefore, a double quote mark may appear in the string only if it is not immediately followed by the right delimiter character. The left delimiter character may not be the last character of the string. For example, if the left delimiter is "." and you want it to appear at the end of the string, you could follow it with a <CTRL-N>.

Stored Values

U0 "User storage directive 0"

U0 can be used in the argument of another directive. You set its value by typing U0 followed by an equal sign and the desired value. The initial value is 0. For example, you may set U0=Dec+Brackets+Colon and Pxn[3]=U0. You may insert a value from another directive in U0, e.g., U0=Pn records the page number at a given point for use in a table of contents in which you use the directive Gn=U0. You may also use U with any positive number, i.e., U1, U2, U3, U4, and so on, up to U299.

Slc "Number of current line in statement"

Slc can be used only in the argument of another directive. You cannot change its value. The value of Slc is the number of lines in the current statement up to and including the current line. It counts both overflow lines and forced new lines, but does not count blank lines between lines (as with Ybl, Gybl, Gyel). When the Output Processor cannot fit a statement or a line all on one print line, it begins a new line; this new line is called overflow. An instance of a forced new line is one that begins after a return character. If you were printing labels, for example, you could use the directive Gyes=9-Slc at the end of each statement, so that even though each contained a different number of lines, only enough vertical space would be generated after each one to total 9 lines.

Slcrc "Number of lines ended by return character in statement"

Slcrc can be used only in the argument of another directive. You cannot change its value. The value of Slcrc is the number of lines ended by a return character that have been completely printed so far in this statement (i.e., it is incremented *after* the return character). Overflow lines are not counted.

Lev "Level of current statement"

Lev can be used only in the argument of another directive. You cannot change its value. The value of Lev is a number indicating the level of the current statement. (The origin statement has the level number 0, top level statements have the level number 1, the next level down has the number 2, etc.)

Levps "Level of previous statement"

Levps can be used only in the argument of another directive. You cannot change its value. The value of Levps is a number indicating the level of the statement one back from the current statement. (The origin statement has the level number 0, top level statements have the level number 1, the next level down has the number 2, etc.)

X "X coordinate of current character position"

X can be used only in the argument of another directive. You cannot change its value. On nonphotocomposition devices, the value of X is the position (relative to Lmbase) of the last character printed. On output to photocomposition, it is a measurement (in thousandths of an inch) from Lmbase to the left edge of the next character to be printed.

Y "Y coordinate of start of this statement, header, or footer"

Y can be used only in the argument of another directive. You cannot change its value. The value of Y is a number indicating the vertical distance from the top of the page to the first line of the current statement, header, or footer. On nonphotocomposition devices, Y is expressed as a number of lines; on output to photocomposition, it is in thousandths of an inch. For photocomposition, Y is measured from the top edge of the page to the tops of the characters in the first line (after processing of the Ybs directive, if any). Use the Yrel directive to measure from the beginning of a statement to a particular line within it; use Y+Yrel to measure from the top of a page to a particular line (see Yrel).

Yrel "Y coordinate relative to start of this statement, header, or footer"

Yrel can be used only in the argument of another directive. You cannot change its value. The value of Yrel is a number indicating the vertical distance from the first line of the current statement, header, or footer, to the line in which this directive appears. On nonphotocomposition devices, Yrel is expressed as a number of lines; on output to photocomposition, it is in thousandths of an inch. For photocomposition, Yrel is measured between the tops of the characters. If used in a statement that began printing on a previous page, Yrel measures the combined vertical distance occupied by the statement in the body area of the previous page(s) and on the current page up to this point. Yrel is useful in a vertical page measurement argument, such as with Gyel or Yfh.

Y+Yrel is the Y coordinate of the current position, as long as the current statement did not begin on a previous page. (See the Y directive.) It can be used in an argument as the vertical measurement from the top of the current page to the top of the current line. For instance, Gcr=33-(Y+Yrel) or, equivalently, Gcr=33-Y-Yrel used anywhere in the top half of the page will space down to the second half of a 66-line page in a position to begin printing on the 34th line. If you use Y+Yrel in a statement that begins on the previous page, you will get the vertical distance from the top of the previous page to the top of the last body line of the previous page, plus the vertical distance occupied by the part of the statement appearing on the current page.

Typesetting (photocomposition only)

Setting page elements

Defaultfont "Default for all fonts"
Defaultfont=size,face,style
Initial value: 10p, Courier, Medium (or 10p, Timesroman, Medium on devices not having a Courier face)

For photocomposition only. The fonts for all areas of text are set to the size, face, and style given in this directive. Its most common use is at the beginning of the file to set up a default font for all subsequent font directives. (It will not affect any preceding font directives.) If any of the values are not specified, the initial values will be assumed. Defaultfont takes effect immediately. Note that not all size, face, and style options are available on every device.

Size options: From 50 to 2500 thousandths of an inch, or from 4 to 144 points.

Face options:

Courier	0
Directory	1
Film	2
Ocrb	3
Nmamicrofont	4
Newsgothic	5
Timesroman	6
Spectra	7
Messenger	8
Centuryschool	11
Futura	12
Optima	13
Vcmono	14

Style options:

Medium	0
Light	1
Bold	2
Slanted	4
Underlined	8
Mono	16

You may combine the style options by adding their numbers or alphabetic equivalents, e.g., either 2+4+8 or 14 or Bold+Slanted+Underlined would produce bold, slanted (Italic), and underlined text.

Bfont "Body font"
Bfont=size,face,style
Initial value: Defaultfont

For photocomposition only. The text of the body will be set in the type size, face, and style given in this directive. If any of the values are not specified, they will not be changed from the current font. If you do not wish to change the style, the second comma is not necessary. Bfont takes effect immediately. If you wish to change only one of the values, it is usually easier to use one of the directives Size, Face, Style, Slant, Underline, Monospace, Lightface, or Boldface. Note that not all size, face, and style options are available on every device.

Size options: From 50 to 2500 thousandths of an inch, or from 4 to 144 points.

Face options:

Courier	0
Directory	1
Film	2
Ocrb	3
Nmamicrofont	4
Newsgothic	5
Timesroman	6
Spectra	7
Messenger	8
Centuryschool	11
Futura	12
Optima	13
Vcmono	14

Style options:

Medium	0
Light	1
Bold	2
Slanted	4
Underlined	8
Mono	16

You may combine the style options by adding their numbers or alphabetic equivalents, e.g., either 2+4+8 or 14 or Bold+Slanted+Underlined would produce bold, slanted (Italic), and underlined text.

H1font "Header 1 font"
H1font=size,face,style
Initial value: Defaultfont

For photocomposition only. The text of header 1 will be set in the type size, face, and style given in this directive. If any of the values are not specified, they will not be changed from the current font. If you do not wish to change the style, the second comma is not necessary. Hfont is a synonym for H1font. This directive takes effect immediately. Note that not all size, face, and style options are available on every device.

Size options: From 50 to 2500 thousandths of an inch, or from 4 to 144 points.

Face options:

Courier	0
Directory	1
Film	2
Ocrb	3
Nmamicrofont	4
Newsgothic	5
Timesroman	6
Spectra	7
Messenger	8
Centuryschool	11
Futura	12
Optima	13
Vcmono	14

Style options:

Medium	0
Light	1
Bold	2
Slanted	4
Underlined	8
Mono	16

You may combine the style options by adding their numbers or alphabetic equivalents, e.g., either 2+4+8 or 14 or Bold+Slanted+Underlined would produce bold, slanted (Italic), and underlined text.

H2font "Header 2 font"
H2font=size,face,style
Initial value: Defaultfont

See H1font description.

H3font "Header 3 font"
H3font=size,face,style
Initial value: Defaultfont

See H1font description.

H4font "Header 4 font"
H4font=size,face,style
Initial value: Defaultfont

See H1font description.

Ffont "Footer font"
Ffont=size,face,style
Initial value: Defaultfont

For photocomposition only. The text of footers (defined by F or Mcsf) will be set in the type size, face, and style given in this directive. If any of the values are not specified, they will not be changed from the current font. If you do not wish to change the style, the second comma is not necessary. This directive takes effect immediately. Note that not all size, face, and style options are available on every device.

Size options: From 50 to 2500 thousandths of an inch, or from 4 to 144 points.

Face options:

Courier	0
Directory	1
Film	2
Ocrb	3
Nmamicrofont	4
Newsgothic	5
Timesroman	6
Spectra	7
Messenger	8
Centuryschool	11
Futura	12
Optima	13
Vcmono	14

Style options:

Medium	0
Light	1
Bold	2
Slanted	4
Underlined	8
Mono	16

You may combine the style options by adding their numbers or alphabetic equivalents, e.g., either 2+4+8 or 14 or Bold+Slanted+Underlined would produce bold, slanted (Italic), and underlined text.

Hjfont "Journal header font"
Hjfont=size,face,style
Initial value: Defaultfont

For photocomposition only. The text of the Journal header will subsequently appear in the type size, face, and style given in this directive. If any of the values are not specified, they will not be changed from the current font. If you do not wish to change the style, the second comma is not necessary. Note that not all size, face, and style options are available on every device.

Size options: From 50 to 2500 thousandths of an inch, or from 4 to 144 points.

Face options:

Courier	0
Directory	1
Film	2
Ocrb	3
Nmamicrofont	4
Newsgothic	5
Timesroman	6
Spectra	7
Messenger	8
Centuryschool	11
Futura	12
Optima	13
Vcmono	14

Style options:

Medium	0
Light	1
Bold	2
Slanted	4
Underlined	8
Mono	16

You may combine the style options by adding their numbers or alphabetic equivalents, e.g., either 2+4+8 or 14 or Bold+Slanted+Underlined would produce bold, slanted (Italic), and underlined text.

Font "Change font"
Font=size,face,style

For photocomposition only. The text of the area in which this directive appears will be set in the type size, face, and style given in this directive. This directive applies to text in headers and footers as well as body text. For example, if the Font directive were included in the string for the footer, the font of the footer would be as specified until changed by Ffont or Defaultfont or by another Font directive in the footer. If any of the values are not specified, they will not be changed from the current font. If you do not wish to change the style, the second comma is not necessary. If you wish to change only one of the values, it is usually easier to use one of the directives Size, Face, Style, Slant, Underline, Monospace, Lightface, or Boldface. You can also change fonts by naming the page area, e.g., Bfont, H1font, etc. Note that not all size, face, and style options are available on every device.

Size options: From 50 to 2500 thousandths of an inch, or from 4 to 144 points.

Face options:

Courier	0
Directory	1
Film	2
Ocrb	3
Nmamicrofont	4
Newsgothic	5
Timesroman	6
Spectra	7
Messenger	8
Centuryschool	11
Futura	12
Optima	13
Vcmono	14

Style options:

Medium	0
Light	1
Bold	2
Slanted	4
Underlined	8
Mono	16

You may combine the style options by adding their numbers or alphabetic equivalents, e.g., either 2+4+8 or 14 or Bold+Slanted+Underlined would produce bold, slanted (Italic), and underlined text.

Pxfont "Font by level"
Pxfont [level] =size,face,style
Initial value: Defaultfont

For photocomposition only. The text of all statements of the specified level will be set in the type size, face, and style given in this directive, when Pxfontshow is set for that level. If you omit [level], the directive applies to all levels set by Pxfontshow. If any of the values are not specified, they will not be changed from the current font. If you do not wish to change the style, the second comma is not necessary. Note that not all size, face, and style options are available on every device.

Size options: From 50 to 2500 thousandths of an inch, or from 4 to 144 points.

Face options:

Courier	0
Directory	1
Film	2
Ocrb	3
Nmamicrofont	4
Newsgothic	5
Timesroman	6
Spectra	7
Messenger	8
Centuryschool	11
Futura	12
Optima	13
Vcmono	14

Style options:

Medium	0
Light	1
Bold	2
Slanted	4
Underlined	8
Mono	16

You may combine the style options by adding their numbers or alphabetic equivalents, e.g., either 2+4+8 or 14 or Bold+Slanted+Underlined would produce bold, slanted (Italic), and underlined text.

Pxfontshow "Levels for Pxfont"
Pxfontshow=intervals
Initial value: 0
Range: [0, 35]

For photocomposition only. Pxfontshow controls the levels on which Pxfont will take effect. The listed intervals of levels will be set according to the current value of Pxfont for those levels. Pxfontshow takes effect on the next statement.

"intervals" represents a series of intervals of levels in any of the following forms (where n and m are integers between 1 and 35):

n	Level n only
<n	Levels 1 through n-1
<=n	Levels 1 through n
>n	Levels n+1 through 35
>=n	Levels n through 35
(n, m)	Levels n+1 through m-1
[n, m)	Levels n through m-1
(n, m]	Levels n+1 through m
[n, m]	Levels n through m
All/On/Yes	Levels 1 through 35
None/Off/No/0	No levels (resets the directive)

To specify more than one interval, separate them with commas (e.g., <=3, [10,12]). You may not specify an interval from one number through a lower number (e.g., [12,10]).

Setting special text

Snfont "Left statement numbers font by level"
Snfont [level] =size,face,style
Initial value: Defaultfont

For photocomposition only. The left statement numbers of the specified level will be set in the type size, face, and style given in this directive, when Snfontshow is set for that level. If you omit [level], this directive applies to all levels set by Snfontshow. If any of the values are not specified, they will not be changed from the current font. If you do not wish to change the style, the second comma is not necessary. Note that not all size, face, and style options are available on every device.

Size options: From 50 to 2500 thousandths of an inch, or from 4 to 144 points.

Face options:

Courier	0
Directory	1
Film	2
Ocrb	3
Nmamicrofont	4
Newsgothic	5
Timesroman	6
Spectra	7
Messenger	8
Centuryschool	11

Futura	12
Optima	13
Vcmono	14

Style options:

Medium	0
Light	1
Bold	2
Slanted	4
Underlined	8
Mono	16

You may combine the style options by adding their numbers or alphabetic equivalents, e.g., either 2+4+8 or 14 or Bold+Slanted+Underlined would produce bold, slanted (Italic), and underlined text.

Snfontshow "Levels for Snfont"
Snfontshow=intervals
Initial value: 0
Range: [0, 35]

For photocomposition only. The left statement numbers of the listed intervals of levels will be set in the font specified by Snfont for those levels. If the Snfontshow directive does not include a given level, or if no Snfontshow directive appears, the statement number will be set in the font at which the statement was initialized (Bfont or Pxfont for that level).

"intervals" represents a series of intervals of levels in any of the following forms (where n and m are integers between 1 and 35):

n	Level n only
<n	Levels 1 through n-1
<=n	Levels 1 through n
>n	Levels n+1 through 35
>=n	Levels n through 35
(n, m)	Levels n+1 through m-1
[n, m)	Levels n through m-1
(n, m]	Levels n+1 through m
[n, m]	Levels n through m
All/On/Yes	Levels 1 through 35
None/Off/No/0	No levels (resets the directive)

To specify more than one interval, separate them with commas (e.g., <=3,[10,12]). You may not specify an interval from one number through a lower number (e.g., [12,10]).

Snffont "Right statement numbers font by level"
Snffont[level]=size,face,style
Initial value: Defaultfont

For photocomposition only. The right statement numbers of the given level will be set in the type size, face, and style given in this directive, when Snffontshow is set for that level. If you omit [level], the directive applies to all levels. If any of the values are not specified, they will not be changed from the current font. If you do not wish to change the style, the second comma is not necessary. Note that not all size, face, and style options are available on every device.

Size options: From 50 to 2500 thousandths of an inch, or from 4 to 144 points.

Face options:

Courier	0
Directory	1
Film	2
Ocrb	3
Nmamicrofont	4
Newsgothic	5
Timesroman	6
Spectra	7
Messenger	8
Centuryschool	11
Futura	12
Optima	13
Vcmono	14

Style options:

Medium	0
Light	1
Bold	2
Slanted	4
Underlined	8
Mono	16

You may combine the style options by adding their numbers or alphabetic equivalents, e.g., either 2+4+8 or 14 or Bold+Slanted+Underlined would produce bold, slanted (Italic), and underlined text.

Snffontshow "Levels for Snffont"
Snffontshow=intervals
Initial value: 0
Range: [0, 35]

For photocomposition only. The right statement numbers of the listed intervals of levels will be set in the font specified by Snffont for those levels. If the Snffontshow directive does not include a given level, or if no Snffontshow directive appears, the

statement number will appear in the font at which the statement was initialized (Bfont or Pxfont for that level).

"intervals" represents a series of intervals of levels in any of the following forms (where n and m are integers between 1 and 35):

n	Level n only
<n	Levels 1 through n-1
<=n	Levels 1 through n
>n	Levels n+1 through 35
>=n	Levels n through 35
(n, m)	Levels n+1 through m-1
[n, m)	Levels n through m-1
(n, m]	Levels n+1 through m
[n, m]	Levels n through m
All/On/Yes	Levels 1 through 35
None/Off/No/0	No levels (resets the directive)

To specify more than one interval, separate them with commas (e.g., <=3,[10,12]). You may not specify an interval from one number through a lower number (e.g., [12,10]).

Pxnfont "Font for Pxn numbers by level"
Pxnfont[level]=size,face,style
Initial value: Defaultfont

For photocomposition only. The numbering of statements of the specified level will be set in the type size, face, and style given in this directive, when that level is set by Pxnfontshow. This directive applies only to numbers resulting from the use of the Pxn and Pxnshow directives. If you omit [level], the directive applies to all levels set by Pxnfontshow. If any of the values are not specified, they will not be changed from the current font. If you do not wish to change the style, the second comma is not necessary. Note that not all size, face, and style options are available on every device.

Size options: From 50 to 2500 thousandths of an inch, or from 4 to 144 points.

Face options:

Courier	0
Directory	1
Film	2
Ocrb	3
Nmamicrofont	4
Newsgothic	5
Timesroman	6
Spectra	7
Messenger	8
Centuryschool	11
Futura	12
Optima	13
Vcmono	14

Style options:

Medium	0
Light	1
Bold	2
Slanted	4
Underlined	8
Mono	16

You may combine the style options by adding their numbers or alphabetic equivalents, e.g., either 2+4+8 or 14 or Bold+Slanted+Underlined would produce bold, slanted (Italic), and underlined text.

Pxnfontshow "Levels for Pxnfont"
Pxnfontshow=intervals
Initial value: 0
Range: [0, 35]

For photocomposition only. The numbering of statements of the listed intervals of levels will be set in the font specified by Pxnfont for those levels. If the Pxnfontshow directive does not include a given level, or if no Pxnfontshow directive appears, the number will be set in the font at which the statement was initialized (Bfont or Pxfont for that level).

"intervals" represents a series of intervals of levels in any of the following forms (where n and m are integers between 1 and 35):

n	Level n only
<n	Levels 1 through n-1
<=n	Levels 1 through n
>n	Levels n+1 through 35
>=n	Levels n through 35
(n, m)	Levels n+1 through m-1
[n, m)	Levels n through m-1
(n, m]	Levels n+1 through m
[n, m]	Levels n through m
All/On/Yes	Levels 1 through 35
None/Off/No/0	No levels (resets the directive)

To specify more than one interval, separate them with commas (e.g., <=3,[10,12]). You may not specify an interval from one number through a lower number (e.g., [12,10]).

Sigfont "Font for statement signatures"
Sigfont=size,face,style
Initial value: Defaultfont

For photocomposition only. The statement signatures will be set in the type size, face, and style given in this directive. If any of the values are not specified, they will not be changed from the current font. If you do not wish to change the style, the second comma is not necessary. Note that not all size, face, and style options are available for every device.

Size options: From 50 to 2500 thousandths of an inch, or from 4 to 144 points.

Face options:

Courier	0
Directory	1
Film	2
Ocrb	3
Nmamicrofont	4
Newsgothic	5
Timesroman	6
Spectra	7
Messenger	8
Centuryschool	11
Futura	12
Optima	13
Vcmono	14

Style options:

Medium	0
Light	1
Bold	2
Slanted	4
Underlined	8
Mono	16

You may combine the style options by adding their numbers or alphabetic equivalents, e.g., either 2+4+8 or 14 or Bold+Slanted+Underlined would produce bold, slanted (Italic), and underlined text.

Mcstfont "Font for statement marks"
Mcstfont=size,face,style
Initial value: Defaultfont

For photocomposition only. The text of the statement mark defined by Mcstext will be set in the type size, face, and style specified by this directive. If any of the values are not specified, they will not be changed from the current font. If you do not wish to change the style, the second comma is not necessary. Note that not all size, face, and style options are available on every device.

Size options: From 50 to 2500 thousandths of an inch, or from 4 to 144 points.

Face options:

Courier	0
Directory	1
Film	2
Ocrb	3
Nmamicrofont	4
Newsgothic	5
Timesroman	6
Spectra	7
Messenger	8
Centuryschool	11
Futura	12
Optima	13
Vcmono	14

Style options:

Medium	0
Light	1
Bold	2
Slanted	4
Underlined	8
Mono	16

You may combine the style options by adding their numbers or alphabetic equivalents, e.g., either 2+4+8 or 14 or Bold+Slanted+Underlined would produce bold, slanted (Italic), and underlined text.

V1 "Set next n visibles according to V1font"
V1=n
Range: [1, 102]

For photocomposition only. The next n visibles will be set in the font specified in the V1font directive. V is a synonym for V1. If n is not specified, 1 will be assumed. You may also use V2, V3, etc., up to V10.

V1font "Font for V1"
V1font=size,face,style
Initial value: Defaultfont

For photocomposition only. Whenever a V1 directive appears, the text of the number of visibles specified in the V1 directive will be set in the type size, face, and style given in this directive. Vfont is a synonym for V1font. If any of the values are not specified, they will not be changed from the current font. If you do not wish to change the style, the second comma is not necessary. Note

that not all size, face, and style options are available on every device. You may also use V2font, V3font, etc., up to V10font.

Size options: From 50 to 2500 thousandths of an inch, or from 4 to 144 points.

Face options:

Courier	0
Directory	1
Film	2
Ocrb	3
Nmamicrofont	4
Newsgothic	5
Timesroman	6
Spectra	7
Messenger	8
Centuryschool	11
Futura	12
Optima	13
Vcmono	14

Style options:

Medium	0
Light	1
Bold	2
Slanted	4
Underlined	8
Mono	16

You may combine the style options by adding their numbers or alphabetic equivalents, e.g., either 2+4+8 or 14 or Bold+Slanted+Underlined would produce bold, slanted (Italic), and underlined text.

Setting individual aspects

Size "Change type size"
Size=size
Range: [4p, 144p]

For photocomposition only. The text of the area in which this directive appears will be set in the given type size from that point on, until it is changed by another directive controlling font. For example, if the Size directive were included in the string for the footer, the size of the footer would be as specified until changed by Ffont or Defaultfont or by a Font or Size directive in the footer. This directive applies to text in headers and footers as well as body text. Note that not all size options are available on every device.

Size options: From 50 to 2500 thousandths of an inch, or from 4 to 144 points.

Face "Change type face"
Face=face

For photocomposition only. The text of the area in which this directive appears will be set in the given type face from that point on, until it is changed by another directive controlling font. For example, if the Face directive were included in the string for the footer, the face of the footer would be as specified until changed by Ffont or Defaultfont or by a Font or Face directive in the footer. This directive applies to text in headers and footers as well as body text. Note that not all face options are available on every device.

Face options:

Courier	0
Directory	1
Film	2
Ocrb	3
Nmamicrofont	4
Newsgothic	5
Timesroman	6
Spectra	7
Messenger	8
Centuryschool	11
Futura	12
Optima	13
Vcmono	14

Style "Change type style"
Style=style

For photocomposition only. The text of the area in which this directive appears will be set in the given type style from that point on, until it is changed by another directive controlling font. For example, if the Style directive were included in the string for the footer, the style of the footer would be as specified until changed by Ffont or Defaultfont or by a Font, Style, or individual style directive in the footer. The following directives can be used to change individual style characteristics: Lightface, Boldface, Slant, Monospace, and Underline.

Style options:

Medium	0
Light	1
Bold	2
Slanted	4
Underlined	8
Mono	16

You may combine the style options by adding their numbers or alphabetic equivalents, e.g., either 2+4+8 or 14 or Bold+Slanted+Underlined would produce bold, slanted (Italic), and underlined text.

Lightface "Change to Light type style"
Lightface=On/Off

For photocomposition only. The text of the area in which this directive appears will be set in Light type of the same size and face as the current font. This directive applies to headers and footers as well as body text. If no Light type is available for the type face currently in effect, the directive will have no effect. If no argument is given, On will be assumed. This directive takes effect immediately. If the type style is Light, it may be set to Medium by setting Lightface to Off.

Boldface "Change to Bold type style"
Boldface=On/Off

For photocomposition only. The text of the area in which this directive appears will be set in Bold type of the same size and face as the current font. This directive applies to text in headers and footers as well as body text. If no true Bold is available for the face currently in effect, the photocomposition device may create an imitation Bold. If no imitation Bold is available, the directive will have no effect. If no argument is given, On will be assumed. This directive takes effect immediately. If the type style is Bold, it may be set to Medium by setting Boldface to Off.

Slant "Change to Slanted type style"
Slant=On/Off

For photocomposition only. The text of the area in which this directive appears will be set in Italic type of the same size and face as the current font. This directive applies to text in headers and footers as well as body text. If no true Italic is available for the face currently in effect, the photocomposition device may create an imitation Italic. If no imitation Italic is available, the directive will have no effect. If no argument is given, On will be assumed. This directive takes effect immediately.

Underline "Change to Underlined type style"
Underline=On/Off

For photocomposition only. The text of the area in which this directive appears will be set in underlined type from that point on. This directive applies to text in headers and footers as well as body text. If no argument is given, On will be assumed. This directive takes effect immediately.

Monospace "Change to Monospaced type style"
Monospace=On/Off

For photocomposition only. The text of the area in which this directive appears will be set in monospaced type from that point on. This directive applies to headers and footers as well as body text. It has meaning only when a type face that is normally proportionally spaced is in effect. Those type faces which may be (and initially are) proportionally spaced are: Courier (0), Newsgothic (5), Timesroman (6), Centuryschool (11), Futura (12), and Optima (13). If no argument is given, On will be assumed. This directive takes effect immediately.

Directives That Control Directives

Dld "Directive left delimiter"
Dld=character
Initial value: '.

Initially, the left delimiter of a directive is a period. Dld will change it to one of the following characters: ! " # $ % & ' ( ) @ : = ↑ [ ] ; <> . , ? + * / - and back arrow (underline). The character may be expressed in ASCII code (e.g., 72B) or typed in with a preceding apostrophe (e.g., ':). Changing delimiters can make it easier for you to find directives in your file or to show standard directive usage in your output (i.e., include directives surrounded by the standard delimiters as part of the text). The change takes effect immediately after the Dld directive; from that point on, only directives using the new left delimiter will be recognized.

Drd "Directive right delimiter"
Drd=character
Initial value: ';

Initially, the right delimiter of a directive is a semicolon. Drd will change it to one of the following characters: ! # $ % & ' ( ) @ : = ↑ [ ] ; <> . , ? The character may be expressed in ASCII code (e.g., 72B) or typed in with a preceding apostrophe (e.g., ':). Changing delimiters can make it easier for you to find directives in your file or to show standard directive usage in your output (i.e., include directives surrounded by the standard delimiters as part of the text). The change takes effect immediately after the Drd directive (although you must end the Drd directive with the old right delimiter); from that point on, only directives using the new right delimiter will be recognized.

Dcase "Directive recognition case"
Dcase=0/1/2
Initial value: 2

Dcase sets the case requirements for the first letter of directives and alphabetic equivalents (such as All, None, Fl, etc.).

0 recognize either upper or lower case for first letter of the directive

1 recognize directives beginning with a lower case letter only

2 recognize directives beginning with an upper case letter only

Dcase takes effect immediately, so all succeeding directives must conform to its specifications, even a subsequent Dcase.

Defsyn "Define synonym for directive"
Defsyn [directive] =name

Defsyn defines the given name to be a synonym for the directive that you specify in brackets. The first character of the name must be in the case specified by the Dcase directive (normally upper case). The two names can be used interchangeably from that point on. Defsyn is sometimes used to abbreviate directives or to name them for their purpose in the document.

D "Print directives switch"
D=On/Off
Initial value: Off

When D=On, it and every directive thereafter will be printed as part of the output (and executed as well). When D=Off, this directive and all that follow will be executed but not printed.

Igd "Ignore directives switch"
Igd=On/Off
Initial value: Off

All directives except Igd will not be executed while Igd is On. Directives will be recognized, however, by the D directive. Igd applies only to the body area, so directives in the headers and footer will be executed.

Printing

Level and line clipping

Levclip "Do not print levels below n"
Levclip=n
Initial value: AUGMENT
Range: [0, 72]

Levels below level n will not be printed. Directives in unprinted levels will be ignored. AUGMENT viewspecs determine which levels are printed where this directive is not used. Where this directive is used, levels n and above will be printed only if passed by the current AUGMENT viewspecs.

Levshow "Show only these levels"
Levshow=intervals
Initial value: AUGMENT
Range: [0, 35]

Beginning with the next statement, only statements of the given intervals of levels will be printed. Directives in unprinted levels will be ignored. AUGMENT viewspecs determine which levels are printed where this directive is not used. Where this directive is used, the given levels will be printed only if passed by the current AUGMENT viewspecs.

"intervals" represents a series of intervals of levels in any of the following forms (where n and m are integers between 1 and 35):

n	Level n only
<n	Levels 1 through n-1
<=n	Levels 1 through n
>n	Levels n+1 through 35
>=n	Levels n through 35
(n, m)	Levels n+1 through m-1
[n, m)	Levels n through m-1
(n, m]	Levels n+1 through m
[n, m]	Levels n through m
All/On/Yes	Levels 1 through 35
None/Off/No/0	No levels (resets the directive)

To specify more than one interval, separate them with commas (e.g., <=3,[10,12]). You may not specify an interval from one number through a lower number (e.g., [12,10]).

Trun "Truncate to n lines"
Trun=n
Initial value: AUGMENT
Range: >=0

Starting with the current statement, all statements will be truncated to n lines, as with AUGMENT viewspecs. If no number is given, 1 is assumed. This directive overrides the AUGMENT viewspecs. Directives in all lines of truncated statements will be executed (although directives that apply only to truncated lines will have no effect).

Printing selected sections of a document

Pshow "Show only these pages"
Pshow=interval
Initial value: All

Only the given interval of pages will be printed, but all the other pages will be formatted and scanned for directives. Pshow takes effect on the current statement.

"interval" represents an interval of pages in any of the following forms:

n	Page n only
<n	Pages 1 through n-1
<=n	Pages 1 through n
>n	Pages n+1 through last page
>=n	Pages n through last page
(n, m)	Pages n+1 through m-1
[n, m)	Pages n through m-1
(n, m]	Pages n+1 through m
[n, m]	Pages n through m
All/On/Yes	All pages
None/Off/No/0	No pages

You may not specify an interval from one page through a preceding page (e.g., [12,10]).

Igls "Ignore line segment"
Igls

The text of the current line segment will not be printed. Directives in the line segment will be executed, however.

A line segment is a string of text terminated by:

- a tab character or Gtab directive
- a Split or Dotsplit directive
- a Tabto or Dotto directive

a change in type size, face, or style (photocomposition only)

an end-of-line condition (return character or Gcr directive, line overflow beyond the right margin, or end of statement).

Igs "Ignore statement"
Igs

The current statement will not be printed. Directives in the statement before, but not after, the Igs directive will be recognized and executed.

Igrest "Ignore rest of statement"
Igrest

From that point on, the rest of the current statement (both text and directives) will be ignored, as if it were at the end of the statement.

Igb "Ignore branch"
Igb

The current statement and all its substatements will not be printed. The directives before the Igb directive will be executed. After the Igb directive, there will be no scanning for directives and no printing.

Igtext "Ignore text switch"
Igtext=On/Off
Initial value: Off

When Igtext is set to On, all text in the file and all directives except Igtext will be ignored until Igtext is set to Off (as if that section of the file were not there).

Halt "Ignore rest of file"
Halt

This directive stops the processing of directives and the output of the file from that point on, as if it were at the end of the file.

Post "Send output switch"
Post=On/Off
Initial value: On

When Post is On, the formatted file will be sent to the output device or file as usual (post-processed). When Post is Off, the Output Processor will format the file as usual, reading all the directives and composing all the pages, but the output will not be sent to the device or file. It will be as if the printer were turned off while that section was being sent to it. Note that if you set Post=Off in the middle of a page and Post=On in the middle of a subsequent page, the two fragments will print on the same physical page. Two fragments on the same page may throw off numbering on the following page; a Pbs directive next to the Post=On will solve that problem.

GLOSSARY

Apparent right margin. The body right margin unless multiple columns are being printed, in which case it is the column right margin.

Argument. The part of an Output Processor directive in which you can specify a value. For example, in the directive Gcr=3 the number three is the argument.

Columnate. Means "start a new column".

Electrostatic printer. In this guide we are using the term "electrostatic printer" to include all high-resolution (100 dots per inch or greater) dot matrix printers. All Output Processor directives that apply to photocomposition devices also apply to electrostatic printers.

Flush left. Characters are printed so that lines are aligned on the left *only.* This alignment is also called "ragged right". When an AUGMENT statement is flush left, it is aligned on the statement's left margin, not the body left margin or the left margin base for the overall document.

Flush right. Lines are aligned on the right margin *only.*

Font. The complete character set of type of one size, face, and style, for example, 12 point Times Roman Medium. The Output Processor knows how much space a particular character in a particular font occupies, and this space may vary on different photocomposition devices.

Footer. One or more lines at the foot of a page that most often contain the page number (folio) and sometimes other information such as the title or publication name. Traditionally, the footer is referred to as a "running foot".

Header. One or more lines at the head of a page that may contain the title or publication name and other information, such as the page number (folio), chapter name or number, and date of publication. Traditionally, the header is referred to as a "running head".

Initial value. The value that the Output Processor automatically assigns to an individual aspect of format before a directive changes it. The overall format of a document that is printed through the Output Processor without any directives is called the "initial format".

Interval. In this guide, the argument for a directive may be expressed as "intervals". For such a directive you are not limited to a single value but can specify a range of values. An example of an interval of levels is all statements of levels greater than two but not more than six.

Invisible. A series of (generally) nonprinting characters that may include return character, space, tab, escape, line feed, form feed, null, and control characters.

Journal header. A special header that is automatically included in every document that is submitted to the AUGMENT Journal. The Journal header contains the following information: the ident of the person(s) who sent the Journal item, the date and time the Journal item was sent, and the Journal catalog number. While a regular header is printed below the top margin of a page, the Journal header is printed within the top margin.

Full justification. The process of spacing out type between two margins so that all full lines are of equal length.

Leaders (pronounced like people who go ahead of groups). Rows of dots or dashes used to direct the reader's eye across large gaps of white space.

Leading (pronounced like the heavy grey metal). In photocomposition, the space between lines of type. The word stems from the traditional use of thin strips of lead between hand-set type. Leading is *not* the same as double spacing. The leading for each line of text is considered part of the type, unlike the blank lines in double-spaced text. For photocomposition, the Output Processor adds the amount of leading and the height of the current type face to calculate the size of one "blank line" or "line space". You can set leading equal to 0, but type that is set without leading is hard to read. Determine the amount of leading according to the type face, type size, and line length you are using. A general rule of thumb is that leading should be no more than 25 percent of the size of the body type.

Left margin base. An AUGMENT term for the Output Processor's absolute margin from which most horizontal margins are calculated. Nothing can be printed to the left of the left margin base, and if you change the position of the left margin base, all other horizontal margins will move equivalently.

Line. To the Output Processor, a "line" is any string of characters that ends with a return character, end of statement, or right margin overflow. Note that a line may consist of only a return character.

Line segment. To the Output Processor, a "line segment" is a string of text terminated by a tab character or a Gtab directive, a Split or Dotsplit directive, a Tabto or Dotto directive, a change in type size, face, or style, or the end of a line. A line segment may be a part of a line or an entire line itself.

Line space. A line space is the amount of vertical space taken up by a line of text; it includes the height of the current type plus the leading. For nonphotocomposition formats, a blank line is always equal to one line space because you cannot control the size of the type or the size of a "blank line". For photocomposition formats, if you do not specifically set the size of a blank line, the Output Processor will use a line space.

Monospaced type. Type in which all the characters in the alphabet are of uniform width. Each takes up the same amount of space, whether it is a punctuation mark, a lower case letter, or an upper case letter.

Nonphotocomposition device. In this guide, we are using the term "nonphotocomposition device" to include the broad spectrum of devices that can print or display files formatted by the Output Processor, including line printers, display terminals, and typewriter terminals.

Overflow. When the Output Processor cannot fit a statement or a line all on one print line, it begins a new line; this new line is called "overflow".

Paginate. Means "start a new page".

Photocomposition. Photocomposition or phototypesetting is the process of photographically casting type to produce proofs or camera-ready copy. You can use an AUGMENT command to prepare a file to be composed on one of the four photocomposition devices currently available to AUGMENT users.

Point. A point is the smallest unit of type measurement (actually .01384 inches or approximately 1/72 of an inch). Traditionally used to describe

the size of type, points can also be used with the Output Processor to specify vertical and horizontal measurements for photocomposition.

Proportional type. Type in which the width of various characters in the alphabet varies; the letter "i" is the narrowest and the letters "m" and "w" are the widest. A proportional type face is more legible and attractive than a monospaced type face and saves space.

Slant. When you request a Slanted type style and no true Italic is available for the type face currently in effect, the photocomposition device may "slant" an upright or Roman type face to create an imitation Italic.

Statement's left margin. In AUGMENT, when statements are indented by viewspecs or directives, the left margin of an individual statement is measured after the indenting (the blank space) that precedes the statement. A statement's left margin may or may not be equivalent to the left margin that is controlled by the directive Blm.

Type face. All the type of a single design, regardless of size. The following traditional type faces are currently available to AUGMENT users: Century Schoolbook, Futura, News Gothic, Optima, and Times Roman. Courier, a special type face that was created to look like typewriter or line printer characters, is also available. We also offer several type faces easily read by an Optical Character Reader, but not suitable for high-quality printed documents. Note that not all type faces are available on every photocomposition device. There are samples of the type faces available on the Videocomp in Appendix II, those available on the COMP80 in Appendix III, and those available on the Singer 6000 in Appendix IV.

Type size. Type size is the height of a font, traditionally measured in points, from the top of the ascender (the part that sticks up on an "h") to the bottom of the descender (the part that extends down on a "p"). Size does *not* measure the width of the characters; the width of the letter "m" in different fonts that are of identical height or point size will vary. Note that not all type sizes are available on every photocomposition device.

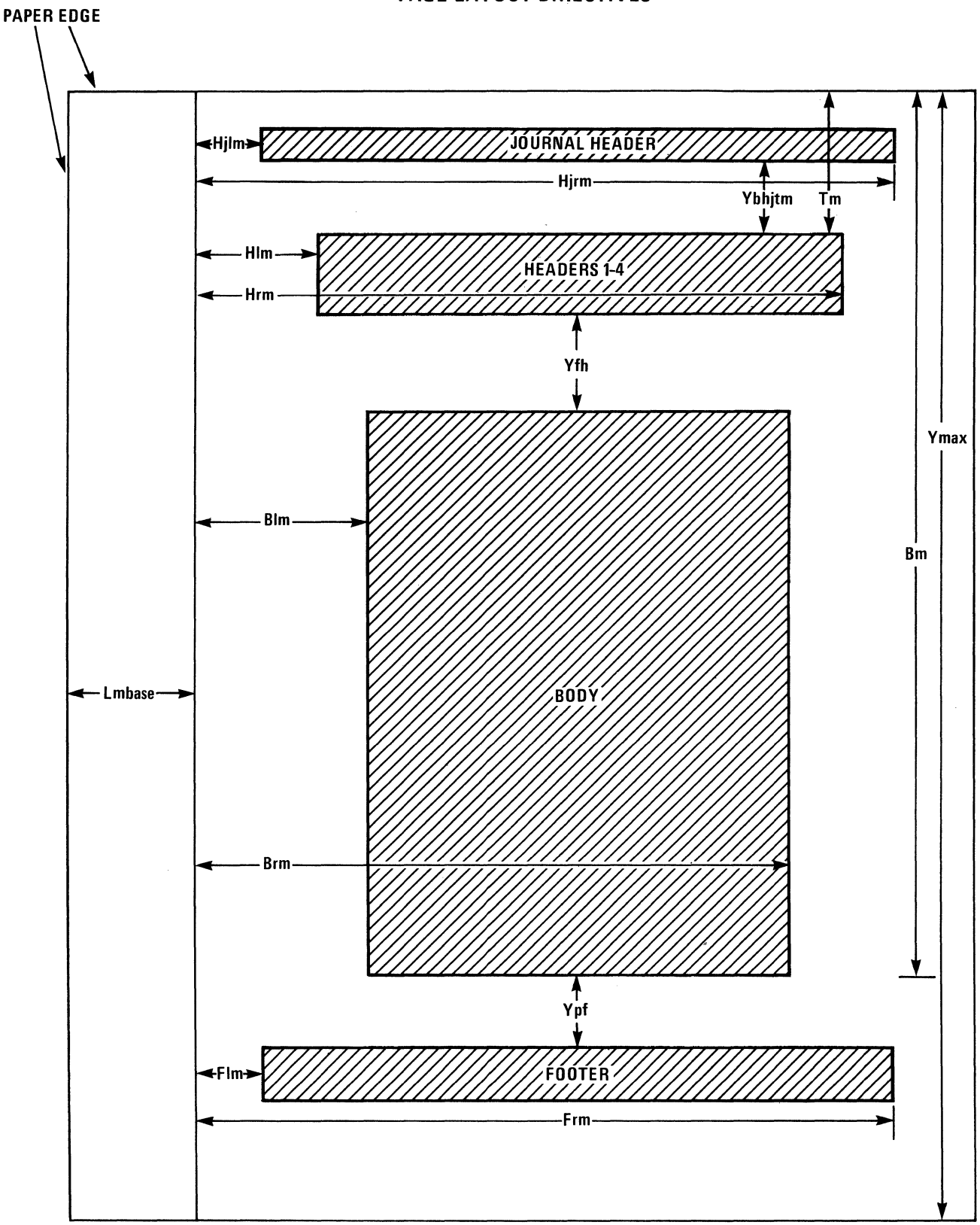
Type style. Type style includes the range of variations for an individual type face. This includes both the weight of the letters, including light, medium, and bold (heavy), and the choice between upright (Roman) or Italic. (If Italic is not available, the upright letters may be slanted by the photocomposition device.) Although underlining is not truly a type variation, underlining is also an option for type style with the Output Processor.

Visible. A series of printing characters, excluding all "invisible" characters such as spaces and return characters.

X coordinate. A number that indicates the horizontal distance from the left margin base to a specified character.

Y coordinate. A number that indicates the vertical distance from the top of the page to a specified character. For photocomposition, Y is measured from the top edge of the page to the tops of the characters.

PAGE LAYOUT DIRECTIVES



NOTE: Lm sets Hlm, Blm and Flm.
Rm sets Hrm, Brm and Frm.

APPENDIX I: Page Composition

How To Lay Out A Page

Study of the diagram on the facing page should clarify the relationships between the various directives that control the horizontal and vertical dimensions of a page. This section explains those relationships in words and describes some common calculations of page measurements. Suggestions on how to prepare for different printing devices and for the Journal copy of your document are also given here.

Horizontal Page Dimensions

The left and right margins of the various page areas are all measured from the left margin base, an absolute left margin. Thus, you can change the left margin base and move all page areas while maintaining the relative positions of the various left and right margins. The left margin base is set by the Lmbase directive and is measured with respect to the leftmost printing position of the device.

The initial value of Lmbase is zero for nonphotocomposition devices. A nonphotocomposition horizontal measurement is specified in character positions. For example, if you set Blm (body left margin) to 2 and do not change the initial value of Lmbase, printing in the body area will start in position 3 (following two spaces). The initial value of Lmbase is 1.5 inches for photocomposition devices.

Nothing will be printed to the left of Lmbase. Therefore, if you want to print photocomposed text one inch from the left edge of the paper, you can set Lmbase to one inch and Blm to zero, or Lmbase to zero and Blm to one inch, and so on.

Note that the left edge of the paper may be aligned differently on different devices and may not coincide with the first printing position. On photocomposition devices, printing begins at the left edge, but on most line printers the paper is installed one-half inch to the left of the first position. Thus, a left margin base of zero is actually located one-half inch from the edge. You will have to adjust your calculations according to the device you plan to use. Most high-quality typewriter terminals and printers allow you to adjust the paper, so you can determine a standard position for paper insertion. We recommend that you align the paper guide one-half inch to the left of the machine's local left margin setting. For those terminals on which the paper edge setting cannot

be varied, determine how far the first printing position is from the left edge so you know how much paper width is available for Output Processor measurement.

The Lm directive provides a short way of setting the left margin for the body, headers, and footer all at once. Blm, Hlm, and Flm will change one particular aspect of a previous Lm setting, and Lm will change all of them.

Similarly, the Rm directive sets the right margin for the body, headers, and footer, and you can change these margins using Brm, Hrm, Frm, or another Rm directive. Note that right margin settings are also measured from the left margin base; they do *not* measure blank space on the right side of the page.

To measure the length of a line in a particular page area, subtract the left margin setting for that area from the right margin setting, as in:

(Brm) - (Blm) = maximum length of line in body

For instance, on a high-quality typewriter terminal printing at 12 characters per inch, using the initial values for Brm and Blm, you would calculate:

65 - 0 = 65 characters = 5.4 inches at 12 characters per inch

Many office typing or printing regulations specify left and right margins in terms of the amount of blank paper that must appear to the left and right of the printed text. In this case, the blank space to the left of the body text on line printer output is:

(paper left of position 1) + (Lmbase) + (Blm) = blank space at left

Assuming there is one-half inch of paper to the left of position 1, the initial values yield:

.5 + 0 + 0 = .5 inch = 5 characters at 10 characters per inch

The blank space to the right of the body text is:

(width of paper) - (paper left of position 1) - (Lmbase) - (Brm) = blank space at right

If the width of the paper is 8.5 inches, the initial values yield:

8.5 - .5 - 0 - 7.2 = .8 inches

85 - 5 - 0 - 72 = 8 characters at 10 characters per inch

Note that the left margin setting is not included in the last formula because right margins are measured from Lmbase. Try using these formulas to see that if you change Blm to 5 and Brm to 70, you will get one blank inch at the left and one blank inch at the right on line printer output, and your lines will be 6.5 inches long.

Vertical Page Dimensions

Most vertical page dimensions are measured from the top of the page, thus allowing you to change the top margin without disturbing the bottom margin, and vice versa. (For information on the location of the top of the page, see *Top Of Form* later in this section.)

The Ymax directive sets the total length of a page. The initial value directs the Output Processor to start each new page 11 inches from the beginning of the last one. You may change Ymax to request shorter pages (such as 10.5 inches for government paper) or longer pages. None of the other vertical measurements may exceed Ymax.

Vertical page dimensions are measured in lines on nonphotocomposition devices. For descriptions of photocomposition measurements, see the "Photocomposition Measurements" section of this appendix. Most line printers and typewriter terminals print six lines per vertical inch. Some high-quality typewriter terminals or printers also print eight lines per inch. Format your page for a particular setting. The initial Output Processor values are only appropriate for six lines per inch. For example, Ymax is initially set to 66 lines, or 11 inches at six lines per inch.

The top margin is the amount of blank space left at the top of each page before the first header or, if there are no headers, before the first line of body text on the page. If headers are printed, blank space will appear between them as specified by directives such as Ybh1h2. After all headers are printed, the blank space following headers (Yfh) will appear followed by the first line of body text.

If there were two headers, you would calculate the amount of vertical space from the top of page to the first line of the body text as follows:

(Tm) + (H1) + (Ybh1h2) + (H2) + (Yfh) = distance before body

Since no headers appear when the initial format is used, the space preceding the first line of the body text is 3 lines, the initial size of the top margin.

The bottom margin is the last line on which body text will be printed. After that line, the Output Processor will print the footer, if any, preceded by the distance specified by the Ypf directive. If you change the value of Ymax, you may also need to change the bottom margin, leaving room for the footer and any blank space.

The number of lines in the body area of the page can be calculated as follows:

(Bm) - (distance before body) = lines in the body area

Using the initial values, this would yield:

56 - 3 = 53 lines

The actual blank space at the bottom of the page will be:

(Ymax) - ((Bm) + (Ypf) + (lines in footer)) = blank space at bottom

The initial values would yield:

66 - (56 + 3 + 1) = 6 lines

Top Of Form

The top of the page, called "Top of Form" or TOF, is wherever the form feed control character <CTRL-L> or a simulation will cause the printer to stop feeding paper.

A terminal with a continuous roll of nonperforated paper needs no form feed function because there is no particular Top of Form position. AUGMENT simply counts lines to fill a particular size page from wherever you start the printing; in this case, you ask it to "simulate" form feeds.

A line printer or high-quality typewriter terminal can accept a box of paper that is perforated (every 11 inches or any other measurement).

We have set up our printers at ARC so that the form feed control character will cause the printer to stop one line below the horizontal perforation, ready to print on the topmost line of the page. If a page length of 11 inches is specified to the Output Processor, the printer stops at the top line of the next page. If any top margin space is specified, it is counted from that first line. For instance, initially the top margin is three lines and the printer will feed three lines before printing the first line of text on each page.

Some computer centers set up their line printers so that Top of Form is on the fourth line of the page (since they assume that formatting programs do not manipulate the top margin). The Output Processor's initial top margin would thus cause six blank lines to appear at the top of each page. A page length of 11 inches would cause such a printer to stop again at the fourth line of the next page, ready to print as before. However, if any printing is to occur on the last three lines of such a page, it will appear below the perforation on the next page. Be sure to compensate for this.

When using separate sheets of paper, make sure you insert each sheet to the same vertical position. We recommend that you set the pressure plate's line guide (which shows where the bottoms of the characters will rest) so that it is ready to print on the topmost line of the paper, one line *below* the top edge.

If you are using perforated paper, set Top of Form when the carriage is situated at the first line of a new page (that is, set the line guide one line below the perforation). The printer should "remember" this setting for all your AUGMENT printing jobs as long as it is turned on, unless you move the platen.

Journal Format

When an AUGMENT file or part of one is submitted to the Journal, a permanent Journal copy is created. It is this copy that the recipients read and print and the catalogs refer to. AUGMENT users often "journalize" the final version of documents that they print for distribution. This Journal copy will always be available for historical purposes and as a source for future editions of the document. The directives in the text that you journalize will also be contained in the permanent Journal copy. If you want your document to be printed in the same format after it is journalized, you need to know that the Journal adds directives of its own that change some initial values you may assume are still in effect.

The Journal copy may be a file containing only the text you submitted, in which case the directives that are added appear in the origin statement of that file. If your text is brief, however, it may be added to an existing file, with the added directives appearing in a statement immediately preceding the submitted text.

When the Journal copy is a file containing only the text you submitted, the origin statement of that file has the following form:

```
< XJOURNAL, #####.NLS;1, >, DATE TIME
XXX ;;;; .HJOURNAL="AUTHOR-IDENTS
DATE ####"; Title:
.H1="TITLE-OF-SUBMISSION"; Author(s):
NAMES/IDENTS; Distribution: IDENTS; Sub-
Collections: IDENTS; Clerk: IDENT; .IGD=0;
.SNF=HJRM; .RM=HJRM-7; .PN=-1; .YBS=1;
.PES; Origin:
FULL-ORIGIN-STATEMENT-OF-SUBMIT-
TED-FILE

.PEL; .PN=PN-1; .GCR; COMMENT-GIVEN-
WITH-SUBMISSION
```

The idents, title, and comment come from information you supply when you send the Journal item. The last two lines shown above are inserted only if you supply a comment. Including a comment should *not* affect your format, since the comment appears on a separate page and page numbering is readjusted. However, the format you constructed will be affected by the directives the Journal adds *preceding* the origin statement from your original file. (Of course, if the text you submitted did not contain an origin statement, none is included in the Journal file.) Readers of the Journal file may begin printing at its origin statement, in which case the directives added by the Journal will take effect unless you specifically overrode them in the text you submitted.

The directives you should be concerned about are Hjournal, H1, Snf, Rm, Pn, Ybs, and Pes.

Hjournal (also called Hj): You cannot override this directive; however, it should not change your format in any way, since the Journal header is printed *inside* the top margin. As shown in the page layout diagram, Ybhjtm measures from the first line of the Journal header to the end of the top margin. By default, the Journal header will appear on the line immediately preceding any other headers, because the initial value of Ybhjtm is zero blank lines. Increasing Ybhjtm in your origin statement will move the Journal header up without moving the other headers or the body. Changing Tm will move the Journal header up or down equivalently with the headers and the body.

H1: If you set header 1 in your origin statement, your setting will override the Journal's. If you do not want a header, you should turn off H1sw, or the H1 directive created by the Journal will cause the body text to start further down on the page.

Snf=Hjrm: This causes right statement numbers to appear in position 76 or 72 (see Hjrm). Reset Snf or turn numbers off altogether with Snfshow.

Rm=Hjrm-7: To override this directive, set Rm explicitly in your origin statement.

Pn=-1: This causes statement 1 to appear at the top of page 0. We recommend that you set Pn to zero in your origin statement.

Ybs=1: Include a Ybs setting in your origin statement if one blank line between statements is inappropriate.

Pes: This causes the text of your origin statement to appear on a separate page. It will cause trouble only if you wish to print part of your origin statement on the same page as statement 1.

We recommend that you print your file before submitting it to the Journal, so that you can see the effect of any directives you added to override Journal directives. You can define a Journal header in your file if you wish, to take effect when you print the file before journalizing it. If you wish to include the Journal catalog number in your file, you may have the number assigned *before* you actually submit the file. You can then insert this number into your file where appropriate, and specify that number when you later submit the item.

Photocomposition Measurements

Almost every directive that specifies a measurement can take two arguments, separated by a comma. The second is the photocomposition measurement, and you can specify inches, points, or centimeters by typing a measurement as follows:

A number without a decimal point is interpreted as thousandths of an inch.

A number with a decimal point is interpreted as inches.

A number followed by an upper or lower case "p" is interpreted as points. This number may have but does not need a decimal point.

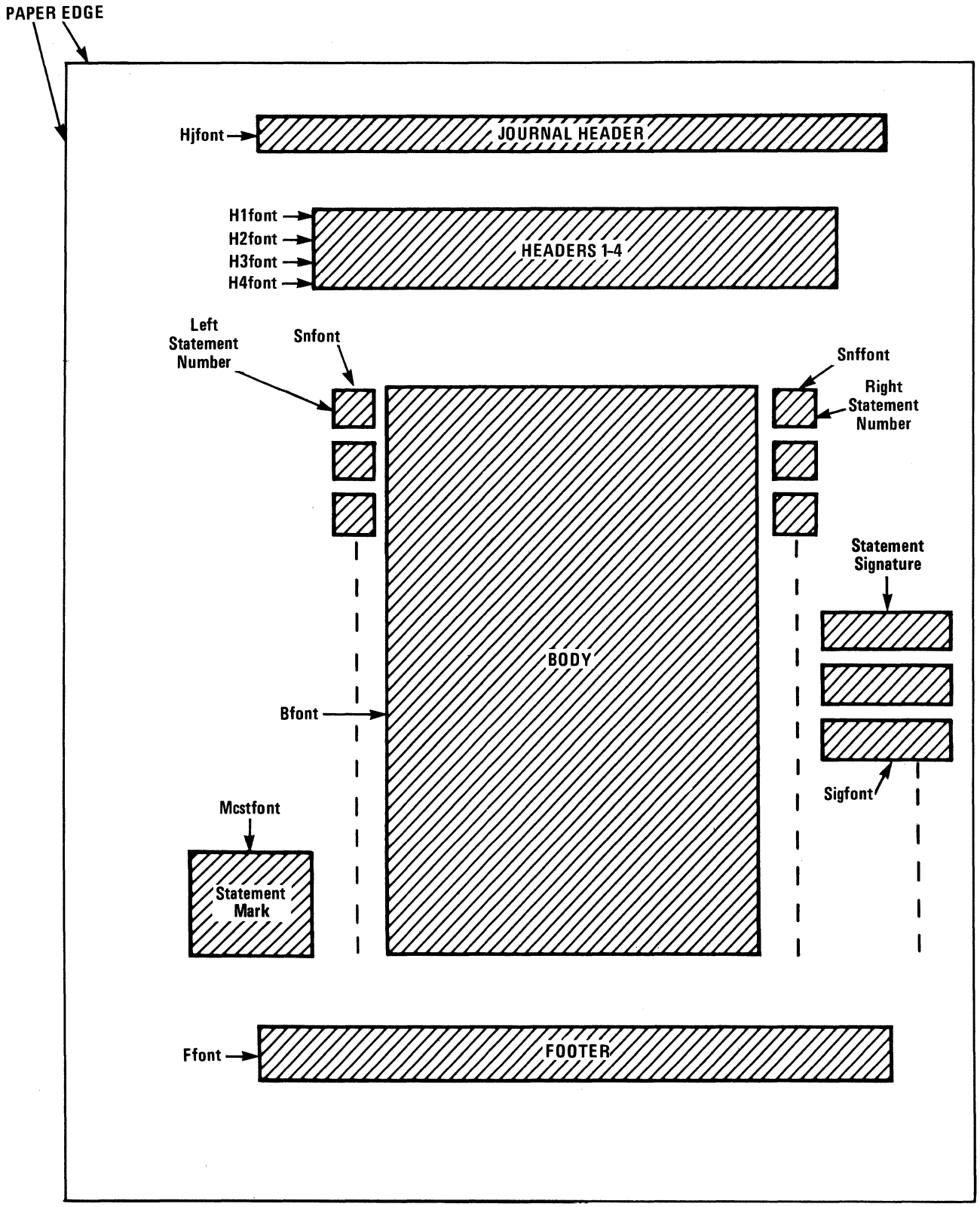
A number without a decimal point that is followed by an upper or lower case "c" is interpreted as thousandths of a centimeter.

A number with a decimal point that is followed by an upper or lower case "c" is interpreted as centimeters.

For example, the following measurements are all different ways of specifying an equivalent distance: 1000, 1.0, 72p, 2540c, and 2.54c.

To specify characters or lines for photocomposition, simply give a nonphotocomposition measurement and the Output Processor will calculate an equivalent measurement according to the type size and leading you are using.

TYPESETTING DIRECTIVES



NOTE: Defaultfont sets the font for Hjfont, H1font, H2font, H3font, H4font, Bfont, Ffont, Mcstfont, Snfont, Sigfont, and Snffont.

Pxfont sets the font for individual levels in the body.

Typesetting

When you send a file that contains no directives to a photocomposition device, the Output Processor applies an initial photocomposition format. When a file does not have typesetting directives, the Output Processor uses the initial value for the directive Defaultfont to determine the font that is used. This means that, unless you specify otherwise, all the text in the photocomposed document, including headers, footers, statement numbers, and so on will be set in the default font.

You may want to begin typesetting by setting the Defaultfont directive to the font you have chosen for your overall document. Since the Defaultfont directive takes effect immediately and resets all other typesetting directives, we recommend that if you use this directive, it should be the first directive in your file. The directives shown in the illustration of typesetting directives on the facing page enable you to specify the font for individual page elements. The page elements that you set will be in the font you specify while all others will be in the default font.

Note: If a typesetting directive appears within the first visible on a line or at the end of the first visible, the font change will take place at the start of that visible (rather than immediately following the directive). Therefore, we recommend that you insert typesetting directives immediately preceding the visible at which you want the directive to take effect.

APPENDIX II:
Type Samples for the Videocomp

Note: All of the type faces in this appendix are available on the Videocomp 800. The Videocomp 500 currently provides only the following type faces: Times Roman, News Gothic, and Century School.

Times Roman

16 point Times Roman

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those

Italic

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who

10 point Times Roman

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a

Italic

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for

6 point Times Roman

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew, more beef than mutton, of hash most nights, boiled bones on Saturdays, lentils on Fridays, and a young pigeon as a

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew, more beef than mutton, of hash most nights, boiled bones on Saturdays, lentils on Fridays, and a young pigeon as a

Italic

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew, more beef than mutton, of hash most nights, boiled bones on Saturdays, lentils on Fridays, and a young pigeon as a

New Gothic

16 point News Gothic

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of

Slanted

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those

10 point News Gothic

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack

Slanted

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack

6 point News Gothic

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew, more beef than mutton, of hash most nights, boiled bones on Saturdays, lentils on Fridays, and a young pigeon as a

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew, more beef than mutton, of hash most nights, boiled bones on Saturdays, lentils on Fridays, and a young pigeon as a

Slanted

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew, more beef than mutton, of hash most nights, boiled bones on Saturdays, lentils on Fridays, and a young pigeon as a

Century School

16 point Century School

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--

Italic

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those

10 point Century School

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield,

Italic

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack

6 point Century School

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman–one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew, more beef than mutton, of hash most nights, boiled bones on Saturdays, lentils on Fridays, and a young pigeon as a

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman–one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew, more beef than mutton, of hash most nights, boiled bones on Saturdays, lentils on Fridays, and a young pigeon as a

Italic

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman–one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew, more beef than mutton, of hash most nights, boiled bones on Saturdays, lentils on Fridays, and a young pigeon as a

Futura

16 point Futura

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those

Light

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who

Slanted

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a

10 point Futura

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and

Light

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for

Slanted

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His

6 point Futura

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew, more beef than mutton, of hash most nights, boiled bones on Saturdays, lentils on Fridays, and a young pigeon as a

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew, more beef than mutton, of hash most nights, boiled bones on Saturdays, lentils on Fridays, and a young pigeon as a

Light

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman–one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew, more beef than mutton, of hash most nights, boiled bones on Saturdays, lentils on Fridays, and a young pigeon as a

Slanted

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman–one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew, more beef than mutton, of hash most nights, boiled bones on Saturdays, lentils on Fridays, and a young pigeon as a

Optima

16 point Optima

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of

Italic

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those

10 point Optima

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack

Slanted

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a

6 point Optima

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew, more beef than mutton, of hash most nights, boiled bones on Saturdays, lentils on Fridays, and a young pigeon as a

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew, more beef than mutton, of hash most nights, boiled bones on Saturdays, lentils on Fridays, and a young pigeon as a

Slanted

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew, more beef than mutton, of hash most nights, boiled bones on Saturdays, lentils on Fridays, and a young pigeon as a

Monospaced New Gothic (Vcmono)

16 point Monospaced News Gothic

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long

Slanted

In a certain village in La Mancha, which I do not wish to name, there lived not long

10 point Monospaced News Gothic

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have

Slanted

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have

6 point Monospaced News Gothic

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His

Slanted

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His

APPENDIX III:
Type Samples for the COMP80

Note: Appendix III was typeset on the COMP80; this accounts for differences in the overall appearance of the pages in the appendix and in the body of the document.

Times Roman

24 point Times Roman

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long

Light

In a certain village in La Mancha, which I do not wish to name, there lived not long

Slanted

In a certain village in La Mancha, which I do not wish to name, there lived not long

10 point Times Roman

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His

Light

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His

Slanted

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His

6 point Times Roman

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew, more beef than mutton, of hash most nights, boiled bones on Saturdays, lentils on Fridays, and a young pigeon as a

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew, more beef than mutton, of hash most nights, boiled bones on Saturdays, lentils on Fridays, and a young pigeon as a

Light

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew, more beef than mutton, of hash most nights, boiled bones on Saturdays, lentils on Fridays, and a young pigeon as a

Slanted

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew, more beef than mutton, of hash most nights, boiled bones on Saturdays, lentils on Fridays, and a young pigeon as a

News Gothic

24 point News Gothic

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long

Light

In a certain village in La Mancha, which I do not wish to name, there lived not long

Slanted

In a certain village in La Mancha, which I do not wish to name, there lived not long

10 point News Gothic

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for

Light

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for

Slanted

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for

6 point News Gothic

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew, more beef than mutton, of hash most nights, boiled bones on Saturdays, lentils on Fridays, and a

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew, more beef than mutton, of hash most nights, boiled bones on Saturdays, lentils on Fridays, and a

Light

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew, more beef than mutton, of hash most nights, boiled bones on Saturdays, lentils on Fridays, and a

Slanted

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew, more beef than mutton, of hash most nights, boiled bones on Saturdays, lentils on Fridays, and a

Courier

24 point Courier

Medium

In a certain village in La Mancha, which I do not wish

Bold

In a certain village in La Mancha, which I do not wish

Light

In a certain village in La Mancha, which I do not wish

Slanted

In a certain village in La Mancha, which I do not wish

10 point Courier

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who

Light

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who

Slanted

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who

6 point Courier

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman-- one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman-- one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for

Light

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman-- one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for

Slanted

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman-- one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for

Directory

24 point Directory

Medium

In a certain village in La Mancha, which I do not wish

Bold

In a certain village in La Mancha, which I do not wish

10 point Directory

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have

6 point Directory

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His

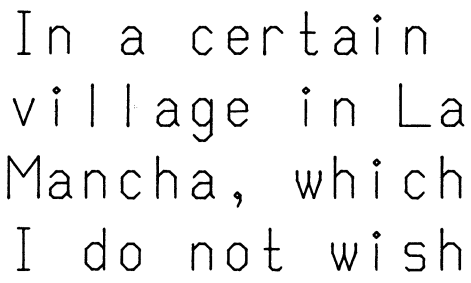
Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His

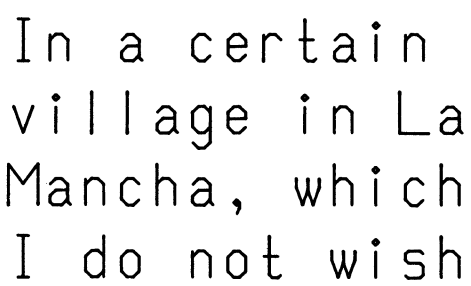
Film

24 point Film

Medium



Bold



10 point Film

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have

6 point Film

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His

OCRB

24 point OCRB

Medium

In a certain village in La Mancha, which I do not wish

Bold

In a certain village in La Mancha, which I do not wish

10 point OCRB

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have

6 point OCRB

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His

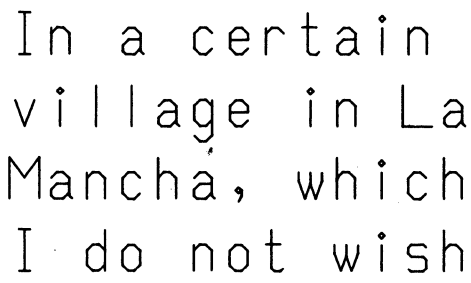
Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His

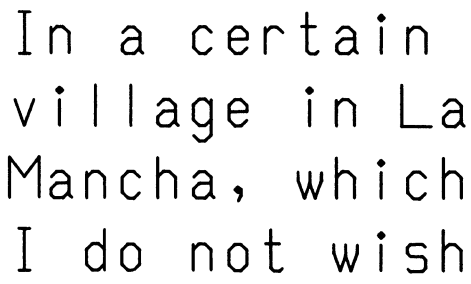
NMA Microfont

24 point NMA Microfont

Medium



Bold



10 point NMA Microfont

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have

6 point NMA Microfont

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His

APPENDIX IV:
Type Samples for the Singer 6000

Note: Appendix IV was typeset on the Singer 6000; this accounts for differences in the overall appearance between the appendix and the body of the document.

Times Roman

24 point Times Roman

Medium

In a certain village in La Mancha, which I do not wish to

Bold

In a certain village in La Mancha, which I do not wish to

Light

In a certain village in La Mancha, which I do not wish to

Italic

In a certain village in La Mancha, which I do not wish to

10 point Times Roman

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient

Light

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient

Italic

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient

6 point Times Roman

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew,

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew,

Light

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew,

Italic

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew,

News Gothic

24 point News Gothic

Medium

In a certain village in La Mancha, which I do not wish to name, there

Bold

In a certain village in La Mancha, which I do not wish to name, there

Light

In a certain village in La Mancha, which I do not wish to name, there

10 point News Gothic

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack

Light

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hcck

6 point News Gothic

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew, more beef than mutton, of hash most

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew, more beef than mutton, of hash most

Light

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew, more beef than mutton, of hash most

Courier

24 point Courier

Medium

In a certain village in La Mancha, which I do not wish to

Bold

In a certain village in La Mancha, which I do not wish to

Light

In a certain village in La Mancha, which I do not wish to

Italic

In a certain village in La Mancha, which I do not wish to

10 point Courier

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient

Light

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient

Italic

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient

6 point Courier

Medium

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew, more beef than

Bold

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew, more beef than

Light

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew, more beef than

Italic

In a certain village in La Mancha, which I do not wish to name, there lived not long ago a gentleman--one of those who have always a lance in a rack, an ancient shield, a lean hack and a greyhound for coursing. His habitual diet consisted of a stew, more beef than

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The people who produce AUGMENT documentation want your comments on this users' guide to make future documents more useful. Please write any comments in the space below.

****

Fill in as many of these as you wish.

Errors:

What you liked:

Suggestions for improvements:

Your occupation:

Your name:

organization:

address:

****

After you have filled out this sheet, tear it out along the perforated line, fold it as indicated by the folding lines on the back, put a stamp on it, and mail it to us. The form is also available online in <userguides,opguide-comments,>; you can copy it, fill it in with AUGMENT, and sent it to INFO with the AUGMENT Journal.

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Cupertino, California 95014