



Daisy-Dot III

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POSTSCRIPT

INTRODUCTION

1. DISTRIBUTION INFORMATION

Daisy-Dot III is copyrighted shareware. This registered version of the software (all files except fonts) and this documentation may not be distributed in any manner. A distributable version is available from on-line networks (such as CompuServe and GENie) and from user groups.

All fonts (*.NLQ) are in the public domain.

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2. THANKS

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Marty Albert, Chris Bailey, David Beifeld, Charles Blaquiere, Clifford Bohannon, Ken Cox, John Dvorak, Robert Lee, Iver Possehl, David Richardson, and Ronnie Riche.

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I would also like to thank Horizon Computers, an excellent source for Atari software and hardware: 695 S Colorado Blvd, Denver, CO, 80222, (303) 777-3883.

3. WHAT IS DAISY-DOT III?

Daisy-Dot III (DD3) gives Atari 8-bit computer systems sophisticated Near Letter Quality typesetting capabilities that until now have been reserved for much more expensive systems with much more memory. It is compatible with most popular 9-pin printers. (DD3 is a complete package and does not require Daisy-Dot, Daisy-Dot II, or knowledge of either one.)

Near Letter Quality (NLQ) is a phrase generally used to describe dot-matrix output that rivals typeset print quality. NLQ text is produced by printing two passes for each line, advancing the paper minimally between passes. "Double strike" text is similar except that the two printed passes are identical and resolution stays the same. With NLQ, however, each pass is different and print resolution is doubled.

But NLQ alone, as found on many printers, is quite limited. Usually only one, built-in font (typestyle) is available, and print is monospaced.

— an "I" takes the same amount of space as a "W". Because of this monospacing, centering is often inaccurate and margin justification introduces uneven spacing.

Daisy-Dot III, on the other hand, gives you the capability to use an unlimited number of NLQ proportional fonts at many different sizes. Also, centering is accurate up to the width of one dot, and justification is micro-spaced to make sure that the extra space needed to make the line even with the margins is distributed equally throughout the line.

Different fonts and proportional spacing posed a problem in my earlier program, Daisy-Dot II. It was sometimes difficult to make a word processor, which usually deals with fixed font and character sizes, format text in such a way to produce attractive NLQ, proportional output. Daisy-Dot III alleviates this trouble by controlling ALL formatting, from word wrap to margins to page breaks to headers and footers. As a result, producing perfectly formatted results in any font is now a simple task for the user.

Also, DD3 introduces new font formats that support larger, more detailed fonts. And DD3 is still compatible with the dozens of Daisy-Dot II fonts widely available.

Besides the formatting options mentioned above, DD3 has many print formatting commands for effects like underlining, hanging indents, different types of tabs with dot leaders, controllable line-spacing, chaining text files, and switching fonts at any point in a document.

Producing a document with Daisy-Dot III is a simple two-step process:

1. Create a document with your favorite text or word processor, using DD3's formatting commands. (Virtually any word or text processor can be used). Save the file.

2. Run the DD3 Print Processor, specifying the font you want to print with and the name of the file saved in step 1. That's all it takes!

The DD3 package also includes a powerful font editor that allows you to design new fonts or modify existing ones, and a font utilities package that helps you expand your collection of fonts.

3. DOCUMENTATION

In addition to this Introduction, DD3 documentation includes four parts: Part I, the Print Processor; Part II, the Font Editor; Part III, the Font Utilities; and Part IV, with information about DD3 font formats.

4. BACK-UP

Before continuing, please make one or two copies of the two DD3 disks "just in case."

PART I: Daisy-Dot III Print Processor

1. INTRODUCTION

The DD3 Print Processor (DD3PP), written in C and machine language, is the main program of the DD3 system. It processes raw text files and produces formatted NLQ output. DD3PP recognizes more than 25 formatting commands that can be included in a text file preceded by a backslash ("\"). These commands control features such as margins, headers, footers, centering, justification, etc.

If this is the first time you're using DD3PP, read the next section, GETTING STARTED.

Section 3 describes, in detail, the steps involved in creating a DD3 document, including descriptions and examples of all DD3 formatting commands.

Section 4 gives a detailed description of running DD3PP and the program's different printing options.

2. GETTING STARTED

Read, in order, the subtopics in this section to set up DD3PP and print your first sample document.

2.1 System Requirements

DD3PP will work with the following system configurations:

Computer:

- Atari 400/600/800/1200/XL/XE with 48K minimum

DOS:

- Atari DOS 2.5, MyDOS, SmartDOS, or SpartaDOS 3.2.X

Printer:

- Epson EX/FX/JX/LX/MX/RX printers and 100% compatibles
- BlueChip 120/10, Legend 1080, Mannesmann Tally Spirit 80
- Star Gemini 10X/SG10
- NEC Prowriter/C.Itoh 8510A
- Atari KMM801

Word Processor:

- DD3 directly supports "SAVED" files from almost any word processor, including TextPro, PaperClip, AtariWriter, AtariWriter Plus, XLENT's First Word Processor, and any other word processor that saves files "verbatim" from the text buffer and uses standard DOS format.

While DD3PP will work with almost any word processor, TextPro 4.54+ by Ron Riche is by far the best choice — it is an excellent program that works well with DD3. For \$5, I will send you the latest version of

TextPro with complete documentation on a disk. Also, Mr. Riche is offering a \$10 discount on registration if you get TextPro from me.

See section 3.1 for more information about word processors.

2.2 Configuration

Before you use DD3PP you must customize it for your system. The program PPCUSTOM.BAS configures DD3PP for your printer and other default settings. Customization settings are saved into the program itself and can't be changed without running the Customizer again.

Before continuing, note that two versions of DD3PP are included: PPX.COM is compatible with SpartaDOS X, and PP.COM is compatible with every other supported DOS.

2.2.1 Running the Customizer

The DD3PP Customizer is written in BASIC and machine language. To run it, enter BASIC in your system (after booting DOS), insert the appropriate disk (see the file listing) and type RUN "D1:PPCUSTOM.BAS".

You will be presented with a menu of customization options. If this is the first time you are using DD3, choosing the correct printer is all that is really needed. You can always customize the other options later.

At any prompt, pressing [RETURN] only or entering an illegal value will take you back to the menu.

2.2.2 [L]ocation of the Program

Choose this option tell the Customizer where to find DD3PP. The default filename is D1:PP.COM. SpartaDOS X users should use the filename PPX.COM. Also change the filename if the program is on a drive other than drive 1.

2.2.3 [P]rinter

Press [P] to cycle through the different supported printers. Note that each time you press [P] the graphic density is reset to Low. Epson EX/FX/JX/LX/RX is the default setting.

2.2.4 [W]idth

Press [W] to configure DD3PP for the width of the paper you are using. Values are in units of 1/40", and can range from 120 (3") to the default of 320 (8"), the width of ordinary paper. An entry will be ignored if the new width is too small for the current left and right margin.

Sometimes specified width values may be invalid. See section 2.2.12.1 for more details.

2.2.5 [L]eft Margin

The left margin is measured in units of $1/40''$. The default left margin is 40 ($1''$). Press [L] to change the value — entries from 0 to 255 are legal, as long as the new margin and the current right margin don't overlap under the current page width.

Sometimes seemingly valid entries will be ignored — see section 2.2.12.1 for an explanation.

2.2.6 [R]ight Margin

The right margin is measured in units of $1/40''$. The default right margin is 40, or $1''$. Press [R] to change the default margin — entries from 0 to 255 are legal, as long as the new margin and the current left margin don't overlap under the current page width.

Sometimes seemingly valid entries will be ignored — see section 2.2.12.1 for an explanation.

2.2.7 [E]n]gth

Press [E] to configure DD3PP for the length of the paper you are using. Values are measured in units of $1/72''$. The default page length is 792 ($6''$, the length of standard American paper). Values from 288 ($4''$) to 1008 ($14''$) are legal, as long as the current top margin plus the current bottom margin plus 98 is still less than the page length.

2.2.8 [T]op Margin

The top margin is measured in units of $1/72''$. Press [T] to change the default top margin of 72 ($1''$). Values from 0 to 255 are legal as long as the new value plus the current bottom margin plus 98 is still less than the page length.

2.2.9 [B]ottom Margin

The bottom margin is measured in units of $1/72''$. Press [B] to change the default margin of 72 ($1''$). Values from 0 to 255 are legal as long as the new value plus the current top margin plus 98 is still less than the page length.

2.2.10 [C]haracter Spacing

Press [C] to change the default character spacing (the number of blank dot-columns between characters). 2 is the default value. Values from 0 to 19 are legal.

2.2.11 Line [S]pacing

In Daisy-Dot III, line spacing is the vertical space, measured in units of $1/72''$, from the bottom of one line to the top of the next. Note that this is different from line spacing's typical definition, the space from the top of one line to the top of the next. The default line spacing is 4. Values can range from 0 to 33.

2.2.12 [D]ensity

Press [D] to cycle through the different graphic densities available on the current printer (see section 2.2.3). Density describes how close together dots are printed across the page, and it is commonly measured in dots per line (dpl). When density increases, horizontal resolution increases and more text can fit on one line. The following are the densities available on each supported printer.

Epson EX/FX/JX/LX/RX, Star Gemini/SG/10:

Low (960 dpl)

Draft (960 dpl) — Prints twice as fast, with loss of resolution

High (1920 dpl)

Epson MX, Atari XMM801:

Low (960 dpl)

NEC/C.Itoh Prowriter, Mannesmann Tally, BlueChip 120/10, Legend 1090:

Low (640 dpl)

High (1280 dpl)

The default density for each printer is Low.

2.2.12.1 High Density with Epson and Star

Because of memory constraints, High density on Epson or Star printers only supports 1480 dots per line. This means that the width minus the left and right margins must be equal to or smaller than 240 (60% of standard 8" paper, the left and right margins together can be no smaller than 80, or 2"). Because of these limitations, any attempt to modify density, width, left or right margins that would not meet the above requirement will be ignored.

2.2.12 Screen Color

The default screen color for all DD3 programs is a dark green background with yellow text. If you want to change this color use [.] to move forward through the available colors and [-] to move backwards.

2.2.13 Customize

Once you've made all the configuration changes you want, press the [SPACE] bar to customize the Print Processor as specified by the [L]ocation of Program option. Remember that any changes you make actually become part of the program and can only be changed back by running the Customizer, again.

2.2.14 [X]iting the Customizer

Once you have customized the Print Processor or decide you don't want to change the configuration press [X] to quit back to BASIC.

2.3 Making a Work Disk

The next step is to create a DD3PP work disk. You have many options, but most likely you'll want to put DD3PP, your favorite word processor, and some of your favorite fonts on the work disk. The following are steps for creating sample DD3PP work disks (In these sections, the phrase "copy DD3PP" refers to the file PP.COM or PPX.COM, depending on the DOS you are using — see section 2.4):

2.3.1 Atari DOS 2.5 with a Word Processor Such as PaperClip or AtariWriter *

With such a system, you'll have to reboot each time you switch between DD3PP and your word processor. Your best bet for a work disk is to first write DOS to a blank disk (option H from the DOS menu), then copy DD3PP to the disk and rename it to AUTORUN.SYS, and finally copy some fonts to the disk.

2.3.2 Atari DOS 2.5 with TextPro and a RAMdisk.

Because TextPro will run from DOS, with this system you won't need to reboot each time. Write DOS to a blank disk (option H from the DOS menu), then copy DD3PP and the word processor files to the disk, and copy some fonts to the disk. Once this disk boots, you can copy all the files to your RAMdisk and work exclusively from RAM. If you have access to a program like ANALOG Magazine's RAMcopy (Issue #44, July 1986), you can create an AUTORUN.SYS file that will automatically copy these files to your RAMdisk.

2.3.3 SpartaDOS, TextPro, and a RAMdisk

This combination is the best for DD3PP. Copy DD3PP, the TextPro files, and some fonts to a disk. Next, create a start-up batch file which copies all these files to your RAMdisk. With this set-up, you only need to boot one disk and all files will then be available to you without rebooting or swapping disks again.

2.4 Running the Print Processor

SpartaDOS X: Run PPX.COM by typing X PPX on the command line.

SpartaDOS 3.2: Run PP.COM by typing PP on the command line. (BASIC must be disabled).

Menu based DOS's: Run PP.COM either as an AUTORUN.SYS file or with the L option from the menu. (BASIC must be disabled).

Users of SpartaDOS have the option of including command line parameters to automate printing, described later in section 4.6.

2.5 Sample Session

This section briefly describes the essential steps involved in creating and printing a document with DD3PP. Some of the instructions are

generalized to make them compatible with every possible system setup. Many of these steps are described later in more detail — this session is meant only to give you a feel for the process that will be common to producing almost every document.

1. Run your word processor, and type the words "Hello World" followed by a [RETURN]. Save the file under the name SAMPLE. (If you're using AtariWriter + make sure you use CTRL-S to save the file).
2. Run DD3PP. (See section 2.4 for help).
3. Insert the disk with the font ROMAN2.NLQ on it (see file listing), enter D1:ROMAN2 and press [RETURN].
4. Insert the disk with the SAMPLE file you created in step 1. Enter Dn:SAMPLE (where n is the number of the disk drive containing the file) and press [RETURN].
5. Turn on your printer and advance to Top of Form (position where the page perforation lines up with the top of the printer ribbon).
6. Press START. The document should print out.
7. Press X, then Y to exit DD3PP.

If there are any problems, run the DD3PP customizer (see section 2.2) again and make sure it has been configured for your printer.

3. CREATING A DOCUMENT

The following sections give you detailed information about creating documents to be printed with DD3.

3.1 Word Processors

Almost every document you print with DD3 will be created with a word processor. DD3PP directly supports any word processor that saves files byte-for-byte from the text buffer and uses standard DOS format. Such word processors include TextPro, PaperClip, Xient's First Word Processor, and AtariWriter + (if CTRL-S is used from the main menu to save a file). In addition, DD3PP supports native files from the original AtariWriter cartridge.

NOTE TO DAISY-DOT II USERS: Daisy-Dot II requires files to be "printed to disk," but this is not the case with DD3. DO NOT PRINT TO DISK! Always SAVE the file.

3.2 Text Entry

Follow these guidelines for creating DD3 text with a word processor.

3.2.1 Word Processor Formatting Codes

Because DD3 controls all text formatting, DO NOT use ANY of your word processor's formatting commands. For example, if you want to center a line of text, use DD3's centering command (see section 3.3.6), not the command your word processor uses to center text.

3.2.2 Returns

Type a [RETURN] in your document only where you want to begin a new line or a new paragraph. DD3 controls word wrap by itself.

3.2.3 Legal Characters

DD3PP supports the 91 standard keyboard generated characters (ASCII codes 32-95,97-122,124). Any other characters included within a text file are ignored by DD3PP.

3.3 Formatting Commands

DD3PP supports more than 25 formatting commands, as described below. Each command is preceded by a backslash character (\). Type these commands into your document as if they were standard text. When printing, DD3PP recognizes the backslash as a signal that a formatting command is following. In all instances, lower- and upper-case letters are treated the same.

For TextPro users, I've included a macro file PP.MAC (see file listing) to make formatting command entry easier. With this macro loaded, holding down the [OPTION] key and pressing the first character of a DD3 command produces a backslash and that character. For example, [OPTION] [U] would insert \u into your document. [OPTION] [*] produces a backslash. See the TextPro documentation for information on loading this macro.

DD3PP's formatting commands make it a powerful and flexible system, but these sophisticated capabilities require care. While every effort has been made to make DD3PP bug-free when used under normal conditions, it would be next to impossible to make it fool-proof to all unorthodox, impractical combinations of formatting commands.

The following sections describe DD3PP's formatting commands. Included for each command is the command's syntax, a note about where it is allowed in a document, a description of how to use the command, and an example where applicable.

Brackets shown as part of a command syntax should not be typed — they designate a command parameter or a key such as [SPACE].

In examples, [RETURN]'s part of the example are marked specifically — line breaks alone don't represent a [RETURN].

Commands are generally grouped by topic.

3.3.1 \ = Forced Backslash

Legal anywhere in a document.

Because DD3PP recognizes the backslash as a command signal, type two backslashes for every one backslash that you want actually printed.

EXAMPLE:

You Type:

\\\\\\\\\\\\\\\\[RETURN]

DD3PP Output:

\\\\\\\\

3.3.2 \\SPACE] = Hard Space

Legal anywhere.

Use a hard space instead of a normal space between any words you want to make sure aren't broken between lines. This is especially useful for keeping proper names from being separated between lines.

EXAMPLE:

(Notice that both lines are identical except the second one has a hard space between the first and last names, so both are shifted to the next line)

You Type:

This example shows how to keep our President's name together: George Bush.[RETURN]

This example shows how to keep our President's name together: George Bush.[RETURN]

DD3PP Output:

This example shows how to keep our President's name together: George Bush.

This example shows how to keep our President's name together: George Bush.

3.3.3 \\- = Hard Hyphen

Legal anywhere.

Similar to the hard space, the hard hyphen prevents hyphenated words from being split between lines.

EXAMPLE:

You Type:

Here's an example of a familiar phrase which includes a hyphen: Daisy-Dot III.[RETURN]

Here's an example of a familiar phrase which includes a hyphen: Daisy-Dot III.[RETURN]

DD3 Output:

Here's an example of a familiar phrase which includes a hyphen: Daisy-Dot III.

Here's an example of a familiar phrase which includes a hyphen:
Daisy-Dot III.

3.3.4 \Ffilename.ext] = Change to Font Stored in filename.ext

Legal anywhere.

This command allows you to switch to a different font at any point in a document. The logged drive and the .NLQ extender are assumed. The filename can be up to 30 characters long. If there is an I/O error, the font in memory is retained. When a new font is loaded, the underline position and font height change too. Line spacing is in terms of the largest font printed on a line.

All fonts are identified by an .NLQ extender (see file listing). Daisy-Dot and Daisy-Dot II fonts are also supported. If you want to use a magnified font comprised of several files (see Part III), the file with the .NLQ extender should still be the one you specify.

EXAMPLE:

You Type:

```
\fpoet\Mixing \fcentury\fonts \fmadrid\is \fcreamy\fun[RETURN]
```

DD3PP Output:

Mixing fonts is fun!

3.3.5 \L = Block Left

Legal anywhere.

This command sets the alignment to block left for the current line and all following lines. It turns centering, block right, and justification off. (Block left is the default mode).

EXAMPLE:

You Type:

```
\LThis line will be blocked left.[RETURN]
```

DD3PP Output:

This line will be blocked left.

3.3.6 \C = Center

Legal anywhere.

This sets the alignment mode to centering for any text following the command. It turns block left, block right, and justification off.

DD3PP uses microspace centering to make sure the line is perfectly centered across the page.

Text is centered about the center of the page width as defined with

the DD3PP customizer (see section 2.2). Text is only centered if it will still fit within the current margins.

EXAMPLE:

You Type:

\CThis line will be centered.(RETURN)

DD3PP Output:

This line will be centered.

3.3.7 \R = Block Right

Legal anywhere.

This turns off block left, centering, and justification, and turns on block right for all text following the command.

EXAMPLE:

You Type:

\RThis line will be blocked right.(RETURN)

DD3PP Output:

This line will be blocked right

3.3.8 Combining Alignment Modes

Block left, centering, and block right can all be combined on one line. Make sure that no spaces surround text to be centered in such an arrangement to ensure perfect centering.

EXAMPLE:

You Type:

\LLLeft\CCenter\RRight(RETURN)

DD3PP Output:

Left

Center

Right

3.3.9 \J = Justification

Legal in a new line after a hard return (or in the first line of a file), before the first character to be printed as text on that line.

This command turns on justification and turns off block left, centering, and block right. All lines of a paragraph (except the last one) are padded with spaces to make the left and right margins equal. DD3PP uses microspace justification to evenly distribute this extra space.

EXAMPLE:

You Type:

\JThis paragraph will be justified when printed with DD3PP. After determining how many words will fit on a line, DD3PP justification evenly adds space to the spaces already in the line to make the margins equal. The last line of a paragraph is never justified.(RETURN)

DD3 Output:

This paragraph will be justified when printed with DD3PP. After determining how many words will fit on a line, DD3PP justification evenly adds space to the spaces already in the line to make the margins equal. The last line of a paragraph is never justified.

3.3.10 \U = Underline On/Off

Legal anywhere.

The \U command toggles underlining on and off. In DD3PP, spaces between words are also underlined. However, spaces across a page not represented by actual space characters are not underlined. For example, the space between text that is blocked left and centered on the same line is NOT underlined.

The position of the underline bar for each font depends on the font's underline value. Use the font editor (Part II) to modify this value for any font.

EXAMPLE:

You Type:

Here is an example of \uunderlined\u text.[RETURN]

DD3PP Output:

Here is an example of underlined text.

3.3.11 \W[1-4] = Character Width, from Single to Quadruple

Legal anywhere.

This command changes the width of characters. Character spacing is not affected. The larger widths are most useful with fonts that have already been magnified vertically (see Part III).

Single width is the default.

EXAMPLE:

You Type:

\W1Single \W2Double \W3Triple \W4Quad[RETURN]

DD3PP Output:

Single Double Triple Quad

3.3.12 \S[0-9] or A-J = Character Spacing, from 0-19 Columns

Legal anywhere.

This command changes the number of blank dot-columns printed between characters. (A-J represents 10-19 columns).

The default value is determined by the DD3PP Customizer (see section 2.2)

EXAMPLE:

You Type:

\s0No Space \s5Five Columns \sJNineteen[RETURN]

DD3PP Output:

No space Five Columns N i n e t e e n

3.3.13 \DCL, L, or HJ = Graphic Density

Legal in a new line after a hard return (or in the first line of a file), before the first character to be printed as text on that line.

This command sets the graphic density to Draft, Low, or High, depending on whether or not your printer supports that density (see section 2.2.12).

EXAMPLE:

You Type:

\ddDraft[RETURN]

\dlLow[RETURN]

\dhHigh[RETURN]

DD3PP Output:

Draft

Low

High

3.3.14 \XLnnn, where nnn form a 3 digit number = Left Margin

Legal in a new line after a hard return (or in the first line of a file), before the first character to be printed as text on that line.

This command sets the left margin to nnn/40". Values too large for the current page width, right margin, and density (see section 2.2.12.1) are ignored.

EXAMPLE:

You Type:

Default left margin[RETURN]

\xlc80Two inch margin[RETURN]

\xll00Two and a half inch margin[RETURN]

DD3PP Output:

Default left margin

Two inch margin

Two and a half inch margin

3.3.15 \XRnnn, where nnn form a 3 digit number = Right Margin

Legal in a new line after a hard return (or in the first line of a file), before the first character to be printed as text on that line.

This command sets the right margin to nnn/40". Values too large for

the current page width, right margin, and density (see section 2.2.12.1) are ignored.

EXAMPLE:

You Type:

```
\rBlock right, default margin[RETURN]
\r080Block right, two inch margin[RETURN]
\r1002.5 inch margin[RETURN]
```

DD3PP Output:

```
Block right, default margin
Block right, two inch margin
2.5 inch margin
```

3.3.16 \XSnnn, where nnn form a 3 digit number = Relative Shift

Legal anywhere.

This command shifts the print head $nnn/40''$ to the right of the current position as long as the right margin isn't exceeded.

In addition, the print head may have to move slightly to align itself with a position evenly divisible by $1/40''$.

This command should only be used with block left or justification alignment.

EXAMPLE (prints 3 numbers 1" apart):

You Type:

```
\xs0402\xs0403[RETURN]
```

DD3PP Output:

```
1          2          3
```

3.3.17 \XAnnn, where nnn form a 3 digit number = Absolute Shift

Legal anywhere.

This command shifts the print head to the absolute position $nnn/40''$ across the page, as long as that position doesn't exceed the right margin or isn't to the left of the current position.

This command should only be used with block left or justification alignment.

EXAMPLE (prints the date at the center of the page):

You Type:

```
\xa180February 2, 1990[RETURN]
```

DD3PP Output:

```
February 2, 1990
```

3.3.18 \XHH or \XHnnn, where nnn form a 3 digit number = Hanging Indent

Use this command to set up a hanging indent, where every line of a paragraph except the first line is indented. The command itself should be included in the first line of a paragraph to be indented, and the left margin must be reset (see section 3.3.14) after the paragraph. Use `\XHH` to set the hanging indent at the current print head position (the print head may shift slightly to reach a position evenly divisible by $1/40''$), or use `\XHnnn` to set the hanging indent $nnn/40''$ in from the left side of the page.

Hanging indents should only be used with block left or justification alignment.

EXAMPLE 1:

You Type:

```
\x10401.\xnhhThis paragraph demonstrates a hanging indent using the
\xHH command. Notice that all text on the lines of this paragraph line
up with the "T" from the first word.[RETURN]
\x1040c[RETURN]
```

DD3PP Output:

1. This paragraph demonstrates a hanging indent using the `\XHH` command. Notice that all text on the lines of this paragraph line up with the "T" from the first word.

EXAMPLE 2:

You Type:

```
\x1040--\xn060This example demonstrates the second type of hanging
indent. In this case, each of the lines of the paragraph (except the
first) are indented half an inch.[RETURN]
\x1040c[RETURN]
```

DD3PP Output:

--This example demonstrates the second type of hanging indent. In this case, each of the lines of the paragraph (except the first) are indented half an inch.

3.3.19 Tabs

DD3PP includes full support of proportional tabs. Up to 10 tabs can be set at a time. Each tab can be either left (standard), center (specified text centered around the tab), right (end of specified text lined up with the tab), or decimal (right tab that lines up decimals within numbers). Also, dot leaders can be printed with each tab.

An example of tabs is given in section 3.3.19.6.

3.3.19.1 \E = Erase Tabs

Legal in a new line after a hard return (or in the first line of a file), before the first character to be printed as text on that line.

Use this command to erase any current tab settings.

3.3.19.2 \FEL, C, or R] = Position Left, Center, or Right/Decimal Tab

Legal anywhere, but all tab settings should be on the same line.

This command sets the specified tab at the current position. Use this command in conjunction with the absolute shift (see section 3.3.17) to set tabs at absolute positions across the page.

3.3.19.3 \T = Tab to Next Tab Setting

Legal anywhere.

This command tabs to the next tab as set with the position tab command.

3.3.19.4 \. = Tab to Next Tab Setting with Dot Leader

Legal anywhere.

This command is similar to \T except that the interval up to the next tab setting is filled with periods, separated by the current character spacing (see section 3.3.12).

3.3.19.5 \Z = End Text for Center or Right/Decimal Tab

Legal after a corresponding \T command.

This command marks the end of text for a corresponding center or right/decimal tab.

3.3.19.6 Tab Example

You Type:

```
\e\xa060\p1\xa140\pc\xa200\pr[RETURN]
\lItem \lMaker\z \lPrice\z[RETURN]
\lPencil \lWicked Wood\z \$.0.\z49[RETURN]
\lPen \lPerfect Plastic\z \$.1.\z11[RETURN]
\lEraser \lRadical Rubber\z \$..\z99[RETURN]
```

DD3PP Output:

Item	Maker	Price
Pencil	Wicked Wood	\$0.49
Pen	Perfect Plastic	\$1.11
Eraser	Radical Rubber	\$.99

3.3.20 \N = New Page

Legal in a new line after a hard return, before the first character to be printed as text on that line. It can't be in the first line of a file.

This command begins a new page — any text after this command will be on the next page.

3.3.21 \XTnnn, where nnn form a 3 digit number = Top Margin

Legal in the first line of a file (before any characters to be printed on that line); or in any line containing a \N command, after the \N command but before any characters to be printed on that line.

This command changes the top margin to $nnn/72''$, as long as nnn is between 0 and 255 and the new value isn't too large for the current bottom margin and page length.

3.3.22 \XBnnn, where nnn form a 3 digit number = Bottom Margin

Legal in the first line of a file (before any characters to be printed on that line); or in any line containing a \N command, after the \N command but before any characters to be printed on that line.

This command changes the bottom margin to $nnn/72''$, as long as nnn is between 0 and 255 and the new value isn't too large for the current top margin and page length.

Note that before DD3PP includes a line on the current page, it checks to see if the height of the text PLUS the line spacing that follows the text will fit. Therefore, if you are using a very large line spacing value (see section 3.3.23), you may want to make the bottom margin smaller than the actual desired printed margin.

3.3.23 \XVnn, where nn form a 2 digit number = Line Spacing

Legal in a new line after a hard return (or in the first line of a file), before the first character to be printed as text on that line.

This command changes the line spacing to $nn/72''$, where nn ranges from 0 to 33. See section 2.2.11 for more information about DD3PP line spacing.

3.3.24 \Hnntexttexttexttext[RETURN], where nn form a 2 digit number and texttexttexttext is the header text = Define Header

Legal in the first line of a file (before any characters to be printed on that line), or in any line containing a \N command, after the \N command but before any characters to be printed on that line.

This command defines a header for the current and all following pages. The header will print $nn/72''$ below the top of the page. The header text can be up to 80 characters. A header (or footer) can only print on one line. Note that the [RETURN] following the header (or footer) text is part of the command and does not begin a new line in the document. Header (or footer) text should include formatting commands for any feature that is changed somewhere in your document. For example, if character spacing is never changed within a document there is no reason to include a resetting command in your header or footer. But, for example, if the left margin varies throughout your document make sure that the header or footer text begins with a command to set the left margin. The following example is the extreme, resetting all

possible formatting options.

```
\h02\x1040\xr040\w1\s2\d1\ \froman2\HEADER[RETURN]
```

This would ensure identical headers on each page regardless of the formatting used on that page. Underlining may also be used in headers and footers. Except for underlining, avoid using any formatting commands in headers (or footers) not included in the above example.

To turn off a header (or a footer), follow the nn with a [RETURN] only.

A header (or footer) will only print if it will fit within the top (or bottom) margin.

The following is the header used in this part of the documentation:

```
\h04\x1040\xr040\w1\s2\d1\ \froman2\ \r*\[RETURN]
```

(The * command is explained in section 3.3.27)

3.3.25 \Gnntextttextttext[RETURN], where nn form a 2 digit number and textttextttext is the footer text = Define Footer

Legal in the first line of a file (before any characters to be printed on that line); or in any line containing a \N command, after the \N command but before any characters to be printed on that line.

This command defines a footer, to be printed nn/72" below the top of the bottom margin. See the section on headers for more information (section 3.3.24)

3.3.26 \X*nnn, where nnn form a 3 digit number = New Page Number

Legal in the first line of a file (before any characters to be printed on that line); or in any line containing a \N command, after the \N command but before any characters to be printed on that line.

This command gives a new page number to the current page. All subsequent pages are numbered based on this number. nnn can range from 1 to 255.

3.3.27 * = Insert Page Number

Legal inside the text of a header or a footer

This command inserts the current page number into the header or footer.

3.3.28 \A[filename.ext]\ = Append File

Legal anywhere.

Put this command anywhere in a document to instruct DD3PP to print the specified file after printing the current document. This feature

allows you to split a large document into several files.

EXAMPLE:

You Type in DOC1:
Document 1\adoc2\RETURN]

You Type in DOC2:
Document 2\adoc3\RETURN]

You Type in DOC3:
Document 3\RETURN]

DD3PP Output (When DOC 1 is printed):
Document 1
Document 2
Document 3

3.3.29 \# = Begin Comment

Legal anywhere.

Any text after this command until the next [RETURN] will be ignored by DD3PP. Use this command for including comments within a document.

EXAMPLE:

You Type:
Hello\#This will not print.\RETURN]

DD3PP Output:
Hello

3.4 Formatting Notes

DD3PP supports "words" up to about 145 characters long. A word is any combination of text and formatting commands not interrupted by a space, hyphens or a [RETURN] (If several hyphens are included in a row, such as to form a dash, the word is broken after the last hyphen). Make sure that no words become this long — formatting commands at the end of words that are too long will yield unpredictable results.

If one word is too long for the current margins, DD3PP truncates the end of it. This feature is useful for making one continuous line of text, perhaps as a border. Make the line too long on purpose, and DD3PP will cut it off to make it stretch exactly from the left margin to the right margin.

The maximum length of any printed line (including formatting commands) is about 140 characters. Note that this isn't the length of the line as created from a word processor, but the length of a printed line. In most cases, this won't be a problem. However, it may show up when printing a very small font with very small margins or when using many lengthy formatting commands among just a few words.

4. PRINTING

This section describes the user-interface of the DD3PP and the printing options available.

4.1 Enter Font

When you first run DD3PP, you are prompted to enter the initial font for printing the document. Type [I]-[9] for a disk directory (see Part III, section 2.6). The logged drive and the ".NLQ" extender are assumed. Subdirectories are supported. The maximum filename length is 26 characters. The font will then load, or DD3PP will respond with Error #0 if there were any I/O errors.

See section 3.4 for more information about fonts.

You can press [ESC] at this prompt to quit the program.

4.2 Enter Text File

After the font has been loaded, enter the name of the text file to print. Again, press [I]-[9] for a disk directory (see Part III, section 2.6). The logged drive is assumed, but no extender is assumed. Subdirectories are supported. The filename can be up to 26 characters long. The text file isn't accessed at this point.

See section 3 for information about creating a text file.

4.3 Print Menu

After the text file has been entered, you are presented with a print menu with the following options. Press [ESC] or [RETURN] at any menu prompt to keep the current value and return to the menu.

4.3.1 [F]ont File

Press [F] if you decide you want to print with a different initial font. You can get a disk directory by pressing [I]-[9].

4.3.2 [T]ext File

Press [T] to select a new text file to print. Press [I]-[9] for a disk directory.

4.3.3 [O]utput

By default, DD3PP sends all output to the printer (P). If you want to redirect output to a disk file, press [O] and enter a filename. Make sure you have A LOT of free space on the disk you are writing to — a page can take over 100K.

4.3.4 [C]opies

Press [C] to select the number of copies to be printed, from 1 to 255.

4.3.5 [P]age Select

Press [P] to cycle through the 3 different page select options: ALL, ODD, or EVEN.

For most purposes you will want ALL pages printed. The ODD and EVEN selections can be used to print on both sides of paper and also to print double column text.

To print on both sides of the paper, first print the odd pages of a document. Then turn the paper over, feed it back through, and print the even pages of the same document.

To print a document in double columns, you must first save two copies of a document that should differ ONLY in left and right margins. The left and right margins of the first document should place the text in the left side of the paper, and the margins of the second document should place the text on the right side of the paper. The actual printed width must be the same for each document. For example, to print double-column text on 8 1/2" paper with one inch margins surrounding and between the two columns, save one document with a left margin of 40 and right margin of 180, and save the other document with a left margin of 190 and a right margin of 40. In DD3PP, first print the odd pages of the first document, then roll the paper back and print the even pages of the second document. Formatting commands such as centering and tabs will not work with such documents.

4.3.6 [B]egin Page

Press [B] to select the first page of a document to print, from 1-255. If the selected first page is greater than the actual length of the document, nothing will print.

4.3.7 [E]nd Page

Press [E] to select the last page of a document to print, from 1-255 (it must be greater than the current first page). The end page can be greater than the actual number of pages in a document.

4.3.8 [X] or [CTRL]X] = Exit

Press either of these keys and confirm your selection to quit the program and return to DOS.

4.4 [START] = Start Printing

Once the print menu selections are to your satisfaction, make sure the paper is aligned so that the page perforation lines up with the top of the printer ribbon and press [START] to print.

The screen will turn off while printing.

4.5 [SELECT] = Abort Printing

To abort a printout, hold down [SELECT]. DD3PP will only abort at the end of a full line of text, so you may have to hold down [SELECT] for a while.

4.6 [OPTION] = Pause Printing

To pause a printout, hold down [OPTION]. Press any key to continue after you've paused the printing.

4.7 "Print Preview"

After the file is printed (or was aborted), DD3PP returns you to the print menu and tells you how many pages were processed. This feature, combined with the [B]egin Page option, lets you preview how long a document will be. For example, say you are writing a document that needs to be one page long or less. Set the [B]egin Page to 255 and press [START]. After DD3PP processes the file, it will tell you the length — if it says one page, change the [B]egin Page to 1 and print the document. If the document is too long, go back to your word processor and change the margins or modify the text.

4.8 Command Line Options

If you are using SpartaDOS, printing a document with DD3PP can be fully automated. To use DD3PP this way, the first parameter must be the desired font and the second parameter is the text file to be printed. If there are no errors, DD3PP will print the text file according to default print menu selections and then return to DOS. If there are any I/O errors, DD3PP will run as usual. Both the [SELECT] and [OPTION] keys are still enabled during printing for aborting or pausing (see sections 4.5-8). DD3PP will return to DOS if a printout was aborted.

Here is a sample command line that would print a document named SAMPLE with the font BOSTON (provided all files are on the current drive):

```
PP BOSTON SAMPLERETURN
```

5. CONCLUSION

The Print Processor is an NLQ typesetting program that can produce some remarkable documents. Don't try to master every feature at once — just be patient and gradually you will be able to do almost anything you want with DD3PP.

PART II: Daisy-Dot III Font Editor

1. INTRODUCTION

The Daisy-Dot III Font Editor (DD3FE), written in C and machine language, is a design studio for creating and modifying DD3 fonts. The program has many editing features yet still is fast and straight-forward. With DD3FE, designing fonts has become easier than ever.

Users of Daisy-Dot II will note that the major difference between DDII and DD3 fonts is the allowable size of each character. With DDII, the maximum size for a character of any font is 19 columns by 18 rows. DD3 breaks these barriers and now allows each character to be up to 32 columns wide by 32 rows high. With this new size, DD3 fonts are larger, have better detail, and are more pleasing to look at.

DD3FE is upward compatible with DDII fonts — DD3 will load DDII fonts but DDII can't handle DD3 fonts.

If this is the first time you are using the font editor, follow the subtopics in sequence in the following section, Getting Started. The other sections are references for DD3 commands and are grouped by category. Follow the table of contents to find information about specific topics.

2. GETTING STARTED

Follow the subtopics in this section in order to get DD3FE off and running and to learn some of the program's conventions.

2.1 System Requirements

DD3FE will work with the following Atari 8-Bit systems:

Computer:

- Atari 400/600/800/1200/XL/XE with 48K minimum

DOS:

- Atari DOS 2.5, MyDOS, SmartDOS, or SpartaDOS 3.2.X

Printer:

- Epson EX/FX/JX/LX/MX/RX printers and 100% compatibles
- BlueChip 120/10, Legend 1080, Mannesmann Tally Spirit 80
- Star Gemini 10X/SG10
- NEC Prowriter/C.Itoh 8510A
- Atari KMM801

Accessory:

- Joystick (Optional)

2.2 Configuration

The first step in using DD3FE is to customize the program for your system. The DD3FE Customizer bypasses the traditional but annoying method of storing information in a configuration file. Instead, the DD3FE Customizer saves your choices right into the program itself. Indeed, once you set your configuration it will remain intact without any additional files.

2.2.1 Running the Customizer

The DD3FE Customizer was written in BASIC and machine language. To run it, enter BASIC in your system (after booting DOS), insert the correct diskette (see the file listing), and type RUN "D1:FECUSTOM.BAS".

You will be presented with a menu of options that are described in the following paragraphs. If this is your first time using DD3FE, all you really need to worry about are the Printer, Help Drive, and Screen Color selections. You won't need to customize the Width Default or Cursor Delay options until you are more familiar with the program.

At any prompt, pressing only [RETURN] or entering an illegal value will take you back to the menu.

2.2.2 [L]ocation of Font Editor

This tells the Customizer where to find the program to customize. The default filename is D1:FE.COM. If you are using SpartaDOS X, press [L] and change the name to D1:FEK.COM. Also change the filename if for some reason the program is on a drive besides drive *1.

2.2.3 [P]rinter

If you are using a printer different than an EPSON EX/FX/JX/LX/RX or compatible, press [P] to cycle through the different printer options.

2.2.4 [H]elp File Drive

The on-line help feature of DD3FE, as described in section 2.7, searches for the help file on a specific drive. If you will be working from a drive other than drive 1 (perhaps a RAMdisk), press [H] and select the drive number (1-9) you want DD3FE to search when looking for the help file.

2.2.5 [C]ursor Delay

To change the default cursor delay, press [C] and enter a value between 0 (fast) and 9 (slow). 3 is the default.

2.2.6 Screen Color

The default screen color for all DD3 programs is a dark green background with yellow text. If you want to change this color use [+] to move forward through the available colors and [-] to move backwards.

2.2.7 [W]idth Default

The default width for every character in DD3FE (including the space) is 15. If you are working on a series of fonts that are either much smaller or larger and want to reduce the time of adjusting the window for each character, press [W] and select a new default width. Values from 1 to 32 are acceptable.

2.2.8 Customize

Once you've made all the configuration changes you want, press the [SPACE] bar to customize the font editor as specified by the [L]ocation of Font Editor option. Remember that any changes you make actually become part of the program and can only be changed back by running the Customizer again.

2.2.9 E[X]iting the Customizer

Once you have customized your font editor or decide you don't want to change the configuration press [X] to quit back to BASIC.

2.3 Running the Font Editor

Once you have customized the font editor, you are ready to run it. There are two versions of the program on the disk, one for SpartaDOS X (FEX.COM) and the other for every other DOS (FE.COM). BASIC must be disabled, so 400/800 users must remove the BASIC cartridge and XL/KE users not using SpartaDOS X must hold down [OPTION] while booting. Before you run DD3FE, boot your favorite DOS. If you are using a menu-based DOS (such as DOS 2.5 and SmartDOS), run the program by selecting the Load Binary option and typing in FE.COM. With a command line DOS, run the program by typing FE (or X FEX for SpartaDOS X) from the command line. There is one command line option; see section 5.2.2 for more information.

2.4 Exiting the Font Editor

To exit the font editor, press [X] and confirm your selection.

2.5 Work Screen

Once the font editor is run, you are presented with the DD3FE work screen. At the left side of the screen is the character window, where characters of the fonts are graphically represented and edited. To the left of the character window are two small lines that mark the underline and height row positions (see sections 4.6 and 4.7). In the upper left corner of the window is the blinking cursor. Whenever the cursor is blinking, all DD3FE commands are available.

At the right side of the screen is a list of pertinent data for the current font and character. Listed are the current font's name, the current character, the character's width, the X and Y positions for the cursor, the Draw/Erase mode, the current graphics mode, the font height, the font underlining position, the space width, the mirror

status, and the cursor delay.

At the bottom right corner of the screen is the I/O window, where all user input is entered, where disk directories are displayed, and where all error messages are shown.

The first character displayed for editing is the letter "A".

2.6 Prompts

Whenever you are prompted for input in the I/O window and decide not to input, press [ESC] or [RETURN] before typing anything else to exit the I/O window.

2.7 On-line Help

DD3FE has a help file describing every font editor command. To use it, the file on the disk FE.HLP must be in the location as specified by the DD3FE customizer (see section 2.2.4).

To activate the help, press [SELECT]. The numerous screens of the help file will be displayed one screen at a time. Press [SPACE] to move from one screen to the next, and press [ESC] to quit the help.

3. CHARACTER EDITING

The commands in this section are available for editing each character.

Remember when creating a character that the top of the tallest character of the font should generally be at the top of the character window.

Also, because character spacing is controlled by the main printing program, blank columns at the sides of the characters shouldn't be added unless you want to force a non-proportional font.

3.1 Cursor control

DD3FE presents several options for controlling the cursor. Both a joystick and the keyboard are supported, and both can be used at the same time.

The X and Y coordinates of the cursor are continually updated on the right side of the screen. These coordinates are useful for matching cursor positions in one character with those in another.

3.1.1 Keyboard

In DD3FE, the keyboard provides 8-directional cursor movement. Use [CTRL] and the four arrow keys to move the cursor up, down, left, or right. Use [SHIFT] and the four arrow keys to move in the four diagonal directions. On the keyboard, the [RETURN] key is the "button" used for drawing, erasing, and setting positions in certain graphics

modes.

3.1.2 Joystick

A joystick in port #1 provides 8-directional cursor movement, and the joystick button draws or erases.

3.1.3 Cursor Delay

To change the cursor delay, press [C] and enter a digit from 0 to 9 (0 is fast, 9 is slow). The default cursor delay is determined by the DD3FE Customizer (see section 2.2.5).

3.2 Restore

The Restore command is the most important editing command. Any time you accidentally damage a character, pressing [R] will effortlessly undo the accident.

The DD3FE restore command will undo almost anything, including any editing command described here in section 3 that alters the character window, any shape drawn with a special graphic mode, and any freehand drawing.

IMPORTANT: [R] MUST be the next key pressed after an accident if you want to undo the damage! (Even before you press the joystick button again!)

3.3 Character Width

To decrease the width of the character window press [L], and press [R] to increase the width. 1 is the minimum width and 32 is the maximum.

In general, it is easiest to start with a large window, draw the character, and only then reduce the window's size.

3.4 Draw/Erase

All work done in the graphics modes (see section 3.5) is either drawn or erased. Press the [SPACE] bar to toggle between the two. Draw is the default.

3.5 Graphics Modes

DD3FE provides seven different graphics modes for drawing either freehand or with geometric shapes.

For modes that require setting several cursor positions (such as lines, boxes, circles, and ellipses), you can reset the mode after setting one of the cursors simply by pressing the corresponding [CTRL]-key combination again. Also, these modes will do nothing if you set more than one cursor at the same position.

Plot is the default mode.

3.5.1 Plot

Press [^P] to enter the Plot mode. This freehand mode is the one you'll probably use most often. Pressing the button simply draws or erases one pixel at the current cursor position.

3.5.2 Box

Pressing [^B] enters the Box mode. Once in box mode, pressing the button once will set one corner of the box. Next, move the cursor to the opposite corner of the box and press the button again to draw the box.

3.5.3 Line

To enter the Line mode press [^L]. Press the button once to determine one of the line segment's endpoints, then move the cursor to the other endpoint and press the button again to draw the line.

3.5.4 Outline

Enter the Outline graphics mode by pressing [^O]. This mode is similar to Line mode, except that after the first line segment is drawn the second endpoint of the first line becomes the first endpoint of the next line. This way, it is easy to draw large polygon outlines.

Remember, you can resort to pressing [^O] again after a line is drawn if you want to reset the first endpoint.

3.5.5 Spoke

Press [^S] to enter Spoke mode. This mode is similar to the other line drawing modes except that once the first endpoint is set it remains constant for all following lines. With this method, it is easy to create the effect of spokes radiating from a specific point.

3.5.6 Circle

Press [^C] to switch to Circle mode. Pressing the button once determines the center of the circle. Next, move the cursor and press the button to determine the circle's radius and draw the circle.

If any part of the circle exceeds the character window's boundaries that part will be clipped.

The circle drawn by this routine is round algebraically, but it most likely won't come out perfectly round on paper. If you are in search of the perfectly round circle, experiment with the Ellipse mode (see section 3.5.7) until you find the ellipse that will come out round on your printer.

3.5.7 Ellipse

Pressing [^E] sets the graphic mode to Ellipse. Press the button once

to set the center of the ellipse. Once the center is set, move the cursor vertically to change the vertical axis, and move the cursor horizontally to change the ellipse's horizontal axis. Once the three cursors determine the desired ellipse, press the button again to draw it.

As with the circle, any parts of the ellipse that do not fit in the character window will be clipped. This effect can be used to draw arcs of different sizes and curvature.

3.6 Scrolling

The image in the character window can be scrolled in four directions. Press [^F] to scroll up, [^V] to scroll down, [^G] to scroll left, and [^H] to scroll right.

With these scrolling facilities available, you don't really have to know the size and position of the character before you start. In fact, sometimes you may want to set the window to its largest possible size, draw the character in the middle of the window, and then, when you're finished, use the scrolling commands to position it where you really want it to be in the window.

3.7 Adding/Deleting Columns/Rows

DDJFE makes it easy to insert or delete rows or columns while editing a character. [^K] inserts one blank column at the cursor's position and shifts the rest of the character to the right of the cursor over one column to the right. [^J] deletes the column at the cursor position and shifts the rest of the character to the right of the cursor one column to the left. [^I] deletes the row at the cursor's position and shifts the rest of the character below the cursor up one row. [^M] inserts one blank row at the cursor's position, shifting the rest of the character below the cursor down one row.

If you accidentally lose part of your character with these commands, use the Restore command (see section 3.2) to undo the damage.

These commands are particularly useful when used in combination with the mirror options. With these commands, you can set the window to the largest possible size and then draw the desired character with the mirrors turned on. When you're finished, the mirrored parts of the characters will be spread out around the window, and you can use these commands to reconstruct the character.

3.8 Flips

Press [V] to vertically flip the image in the character window, and press [H] to horizontally flip it.

Flips, when used in conjunction with the Transcribe command (see section 4.3), are great for characters like "p" and "q".

3.9 Inverse

Press [I] to create an inverse image (on pixels are turned off, off pixels are turned on).

3.10 Mirrors

DD3FE provides four different "mirrors" to make drawing symmetrical characters easier. Press [^R] to cycle through the five reflection options: None, the default; Horizontal, reflecting drawing across a horizontal mirror in the middle of the window; Vertical, reflecting drawing across a vertical mirror down the middle of the window; Diagonal, reflecting drawing across a mirror stretching between opposite corners of the character window; and Four, which reflects any drawing in the other three corners of the character window.

Mirrors are great for many letters, including c, k, o, s, v, w, x, A, C, H, I, K, M, O, S, U, V, and W.

Mirrors will reflect drawing from all the graphics modes but won't reflect fills.

Remember that even if the mirrors leave too much space between the symmetrical parts of the character, you can reconstruct them easily using the commands to add or delete rows or columns (see section 3.7).

3.11 Fill

DD3FE allows you to quickly fill ANY closed outline by positioning the cursor within the outlined area and pressing [A]. If any boundaries of the outline are not closed, the fill will "leak," and there's a good chance your character will be temporarily ruined — use the Restore command (see section 3.2) to undo any unwanted fills.

If you want to fill a colored area with blanks, the best way to do it is first press [I] to inverse the image (see section 3.9), fill the area, and then press [I] again to restore the image.

3.12 Clear Window

Press [W] to clear the character window. If you do it by accident use the Restore command (see section 3.2) to repair the damage.

4. FONT MANAGEMENT

The following commands apply to a font as a whole or involve moving through the different characters of a font.

One note should be made about moving through a font. Whenever you exit one character to edit another, DD3FE checks the bit arrangement of the current character to see if it would result in the program trying to send either of the illegal values 13 or 155 to the printer. If such a bit arrangement is found in the character, DD3FE will ask you to edit a specific column (numbered 0-31 to match the "X" cursor position) within either the top or bottom half of the character. Changing one or two

pixels is usually enough to avoid the illegal values.

Also, for commands that require you to specify a character (Goto and Transcribe), be aware that the capital/lower case toggle key is recognized and remembered by DD3FE. For example, when working with lower case letters, you only need to change the setting to lower case letters once — it will be remembered for subsequent character specifications.

4.1 Adjacent Characters

If you are editing a certain character and wish to edit an adjacent character (i.e. move from "A" to "B" or from "3" to "2"), press [=] to move to the next character or [-] to move to the previous character.

4.2 Goto

Use Goto to edit a specific character. For example, if you are currently working on the letter "A" and want to switch to the letter "Z", press [G] and then [Z].

4.3 Transcribe

This character copying feature is great for working on two or more related characters. For example, let's say you've just finished creating a lower case "p", and you want to work on the letter "q". Since they're so similar, it's a waste of time to redo the character. Instead, from the "p" window press [=] to move to the "q" window (see section 4.1), press [T] and then [p] to transcribe the letter into the new window, and finally press [H] to flip the character and change the "p" to a "q" (see section 3.8).

4.4 Clear Memory

To start over with a new font, press [M] and confirm your selection. Once you clear a font from memory it's GONE, so be careful! This command will also reset height and underline bars to 31 (see sections 4.6 and 4.7) and set the space width to the default width (see section 4.5).

4.5 Space Width

In DDII fonts, the space character was treated just like any other. But because the space character in every font I had ever seen was blank, it seemed a waste of space to allocate all that memory to the space character. So instead, the space in DD3 fonts is controlled only in terms of its width. The default space width is the same as the default character window width as configured within the Customizer (see section 2.2.7). To change the space width, press [B] and enter a value between 1 and 32.

When DD3FE loads in DDII fonts, the width of the space character from the original font is preserved. If, however, for some strange reason the font's space character wasn't blank, the data for that character

will be lost.

4.6 Height

Each DD3 font can be up to 32 rows high. However, if a font you are designing is smaller than that, DD3 allows you to specify the actual height of the character so line spacing within the main printing program will match the size of the characters. The height marker can range from the second row (referred to as row 1) to the last row (row 31).

Whenever you begin a font, the height should start at 31. When you complete the font, use [^] to raise the height bar (the column directly to the left of the character window) so it lines up with the lowest point of any character in the font. If you go too far you can use [] to lower the bar again.

Another consideration for setting the height is printing time. Any font with the height set at value 16 or greater will require 4 printer passes to print. In contrast, when the height bar is set at 15 or less the character requires only two passes (as in DDII fonts). Keep this in mind when a font you're working on could easily have a height value of either 15 or 16.

IMPORTANT WARNING

In general, you should not set the height bar any higher than the lowest extremity of any character in any font. However, for some cases when special line spacing effects are desired you may want to do this.

BUT DO NOT DO THIS IF YOU ARE SETTING THE HEIGHT AT VALUES 1-15" IF YOU DO, AND USE ANY COMMAND SUCH AS GOTO, +, -, LOAD, SAVE, OR PRINT BEFORE CHANGING IT BACK, ANY DATA BELOW ROW 15 FOR THAT CHARACTER AND POSSIBLY THE ENTIRE FONT WILL BE LOST FOREVER"

4.7 Underline

In the same manner you can set the height of a DD3 font, you can also set the row where the font is to be underlined. Use [] to lower the underline bar (the bar directly to the left of the height bar) and [^] to raise it. The underline bar can't be below the height bar.

5. FILE I/O

DD3FE provides several commands for disk input and output.

5.1 Disk Directory

To get a directory of "Dn:*.NLQ", showing only the fonts on the drive, press [1]-[9]. To get a directory of every file on the drive, press [0]-[0]. The directory is shown in the I/O window one file at a time. To proceed from one file to the next press any key except [ESC] or press

[ESC] to quit.

When a font is shown in the window, you can automatically load it by pressing [L].

5.2 Load Font

In addition to loading fonts within the directory command (see section 5.1), there are two more options for loading fonts. In both cases, the logged drive (the drive set at the command line when running the font editor, or drive 1 for menu-based DOS's) and the extender ".NLQ" are assumed unless specified otherwise.

DD3 will load both DD3 fonts AND DDII fonts. Any time a DDII font is loaded the height and underline bars will be set at 15. Also, the space width will be set according to the space definition within the DDII font (see section 4.5).

In addition to any standard Atari I/O errors that may come up, DD3FE will display an Error #0 if you try to load a file that is neither a DDII nor a DD3 font.

Be aware that you can't load magnified fonts into the Font Editor (See Part III, section 3) — DD3FE will respond with Error #0 if you try.

5.2.1 Load From Font Editor

One option is to press [L] and specify the name of the font. Loading a font will erase any font in memory. Be careful!

5.2.2 Load with Command Line Option

The other method for loading fonts is limited to users of command line DOS's. When you run the program, specifying a font on the command line will automatically load that font when the program is run. For example, with SpartaDOS 3.2, typing "FE SWISS" will run the font editor and load the font SWISS.NLQ from the logged drive.

If there is an I/O error the font editor will simply begin with no font in memory.

5.3 Save

Press [S] and specify a filename to save the current font. As with the Load command (see section 5.2), the logged drive and the extender ".NLQ" are assumed unless otherwise specified. If the font in memory already has a name, simply pressing [RETURN] at the prompt will save the font under its current name. You can still save it under another name by just entering the new name.

In addition to saving the data for the 90 DD3 font characters (ASCII codes 33-95, 97-122, and 124), DD3FE also saves the height position, the underline position, and the space width for the font.

DD3FE saves every font in DD3 format, even if the font in memory is a DDII font. Thus, any time DD3 loads a DDII font and saves it back again it will no longer be compatible with DDII.

Before DD3FE saves the font it may request that you alter the current character slightly. See section 4 for more information.

6. PRINTING

DD3FE allows you to print your work in DD3 format, either one character at a time or the entire font at once. Also, you can set a couple of printing options to get different views of fonts.

The aspect ratio on the screen almost never matches that of the printer, so printing characters is about the only way to see exactly how they will look when used in the main DD3 program.

Before printing, DD3FE may request you to alter the current character. See section 4 for more information.

If you get garbage from your printer, make sure you have customized DD3FE for your specific printer (see section 2.2).

6.1 Print Parameters

DD3FE allows you to set the graphic density and spacing for any printouts by pressing [^Q]. Remember you can press [ESC] or [RETURN] at either prompt to keep the current values.

6.1.1 Density

After pressing [^Q] you will first be prompted for either [L]ow or [H]igh density. (If your printer supports only one density this prompt will be skipped).

High density depends on your printer: for non-MX Epsoms and Stars, this is 1920 dpi; for NEC, Legend, BlueChip, and Mannesmann Tally printers, this is 1280 dpi; for Epson MX's and the Atari XMM801, there is no high density. Low density also varies from printer to printer: for all Epsoms, Stars, and the Atari XMM801, it's 960 dpi; for NEC, Legend, BlueChip, and Mannesmann Tally it is 640 dpi.

The default density is Low, and the capitalized density in the prompt is the current setting.

6.1.2 Spacing

After selecting the density (or if you weren't presented with the density prompt), select [S]pace or [N]o Space. If you select Space, font and character printouts will have 3 blank columns between characters. If No Space is selected, there will be no blank space printed between characters; this option is useful for testing cursive fonts or border characters that should be connected.

The default selection is Space, and the capitalized spacing option in the prompt is the current setting.

6.2 Quick Print

Press [Q] to print the current font's name, the current character, the character's width, and a row with seven samples of the current character.

The printout follows the guidelines as set by the Print Parameters command (see section 6.1).

6.3 Print Font

Press [F] to print the current font's name, the space width, the height position, the underline position, and each character in the font.

The font is printed out with 18 characters on each of 5 rows. The printout follows the guidelines set with the Print Parameters command (see section 6.1).

7. CONCLUSION

I hope you will find DD3FE to be an efficient, straight-forward, and powerful tool for creating or editing fonts.

PART III: Daisy-Dot III Font Utilities

1. INTRODUCTION

Daisy-Dot III Font Utilities (DD3FU), written in C and machine language, contains three sub-programs to help expand your font collection:

Magnifier — Creates taller versions of fonts, up to four times the height of the original fonts.

Italicizer — Creates italic versions of fonts.

Converter — Converts Atari screen fonts to DD3 format with options for double width and/or double height (Based on an original idea by Robert Lee).

DD3FU supports subdirectories and full path specification for filenames. Also, each sub-program allows the use of wildcards to make it easy to process many fonts at one time.

Users of Daisy-Dot II will notice that the new Italicizer and Converter are both faster than the originals. In addition, DD3FU can, as an option, automatically make the resulting fonts proportional and save you much of the time required with DDII to manually remove the extra blank columns surrounding some characters in italicized or converted fonts.

2. GETTING STARTED

This section describes how to run DD3FU and also describes some conventions common to all three sub-programs.

2.1 System Requirements

DD3FU will work with the following Atari 8-bit systems

Computer:

- Atari 400/600/800/1200/XL/XE with 48K minimum

DOS:

- Atari DOS 2.5, MyDOS, SmartDOS, or SpartaDOS 3.2,X

2.2 Running the Program

DD3FU is under the filename FU.COM (see file listing). This program will work with every supported DOS.

To run DD3FU, BASIC must first be disabled, so 400/800 users must remove the BASIC cartridge and XL/XE users not using SpartaDOS X must hold down [OPTION] while booting. Boot your favorite DOS. If you are using a menu-based DOS (such as DOS 2.5 and SmartDOS), run the program by selecting the Load Binary option and typing in FU.COM. With a

command line DOS, run the program by typing FU (or X FU for SpartaDOS X) from the command line. There are no command line options.

2.3 Main Menu

When the program runs you are presented with the main menu with four options. Press [M] for the Magnifier, [I] for the Italicizer, [C] for the Converter, or [X] to exit to DOS.

2.4 Prompts

Prompts for all three sub-programs are similar. At any prompt requesting a filename, you have three options:

- Enter the filename and press [RETURN]. See section 2.5.
- Press [1]-[9] for a disk directory. See section 2.6.
- Press [ESC] or [RETURN] alone to move back one prompt (or to the main menu if you're at the first prompt).

For prompts requesting one-character responses, just press the desired key without hitting [RETURN]. At most of these prompts you can also press [ESC] or [RETURN] alone to move back to the previous prompt.

In the Magnifier and the Converter, you will be prompted to confirm your selections before the actual process begins. Press [ESC] or [RETURN] to move back one prompt, or press any other key to start the procedure.

2.5 Filenames

Whenever entering filenames (either source or destination files), the logged drive (or drive 1 with Atari DOS and SmartDOS) are assumed unless specified otherwise.

Also, the .NLQ extender (or .FNT when specifying Atari screen fonts within the Converter) are assumed unless specified otherwise.

DD3FU supports the "~" and ">" characters to designate moving forward through subdirectories, and "<" is recognized for moving backwards. Avoid using the MyDOS ":" and the SpartaDOS X "." characters — they aren't fully compatible with DD3FU. Check your DOS manual for more information about using subdirectories.

DD3FU fully supports wildcards (both "*" and "?") for specification of both source and destination files. DD3FU can keep track of up to 64 files that fit a wildcard. Wildcards help you automate each of the three sub-programs. If you are not familiar with the use of wildcards consult your DOS manual.

The maximum length for an entered filename (before wildcard expansion) is 29 characters.

Besides the usual I/O error messages, each sub-program in DD3FU will respond with Error #0 if you specify a file with an incompatible file

format.

2.6 Directories

Press [1]-[9] from any filename entry prompt to see a disk directory of the corresponding drive. After specifying the drive number, you will be prompted to enter the directory mask (for example, a mask of *.NLQ would only list the files with an .NLQ extender). Either press [RETURN] for the default mask or enter a new one. The maximum length for the directory mask is 29 characters.

Files are displayed twenty at a time. After twenty files are shown, press [ESC] to stop or any other key to continue with the rest of the directory.

After a directory is displayed, the file listing remains on the screen to make it easier to enter the filename.

2.7 File Window

During the execution of each sub-program, DD3FU displays the current source and destination files. If a filename, after wildcard expansion, is too long for the screen's width, the filenames won't be displayed but the process will continue as usual.

2.8 Progress Line

During the execution of all three sub-programs, dots are displayed on the bottom line of the screen to measure progress. When the dots cover the entire bottom line the process is complete.

2.9 After The Process

When each sub-program finishes the specified process, the sub-program restarts and you are prompted for the source file again. Press [ESC] or [RETURN] to go back to the main menu.

2.10 Illegal Values

In all three sub-programs, illegal values of 13 and 155 generated during the process are converted to 9 and 153, respectively.

3. THE MAGNIFIER

The DD3 Font Magnifier allows you to create vertically magnified versions of fonts at two, three, or four times magnification. A large font magnified four times will be almost an inch high, suitable for headlines, titles, and other special effects. (Horizontal magnification is a simple process controlled within the Print Processor).

If resulting magnified fonts are taller than 32 rows (the "maximum" DD3 font size), the Magnifier splits the new font into two, three, or four smaller fonts depending on the size. For example, consider an original

font SAMPLE.NLQ that is 32 rows high. By choosing quadruple height and selecting SAMPLE4.NLQ as the destination, the Magnifier will create the following files:

```
SAMPLE4.NLQ — First "Pass"
SAMPLE4.NL2 — Second "Pass"
SAMPLE4.NL3 — Third "Pass"
SAMPLE4.NL4 — Fourth "Pass"
```

These four fonts are each in a special format that instruct the Print Processor how to manage and print them as a quadruple height font (See Part IV). You cannot load any of these fonts into the DD3 Font Editor, and you can't italicize them. The Magnifier uses this special format only when the magnified font requires more than one font file. If the magnified font is 32 rows high or shorter, the magnified font is saved in standard DD3 format and can be italicized or modified with the DD3 Font Editor.

Height and underline values of fonts are changed proportionally to the magnification of the font. For example, if the height value of the original SAMPLE font was 30, SAMPLE4 would have a height value of 120. Note that even if a font's height is magnified, the underlining from the Print Processor will always be one dot high.

When copying magnified fonts between disks, remember that a font such as the SAMPLE4 font described above is not complete unless ALL 4 files are on the same disk and in the same directory. When copying fonts, it would be a good idea to use the .NL? wildcard extender instead of only the .NLQ extender to make sure all pieces of a magnified font are copied.

The Magnifier uses complex routines to generate the variable height fonts. These routines can be very slow — a large font magnified to quadruple height could take as many as 20 minutes to process. However, magnification is a one-time operation. Also, the use of wildcards (see section 2.5) lets you leave your computer unattended while it magnifies many fonts.

The files that comprise a magnified font can be very large — over 200 total single density sectors for a large original font magnified to quadruple height. But because of the nature of the data in these files, compression programs such as ARC are very effective and can compress a magnified font up to 85%.

The following sections describe the different prompts of the Magnifier in order of their appearance within the sub-program.

3.1 Source File

After selecting the Magnifier, the first step is to enter the name of the source font(s) you want to magnify. Both DD3 and Daisy-Dot II fonts can be magnified. You can't magnify a font that's already been magnified unless it is 32 rows high or less (i.e. comprised of only one file).

The Magnifier relies on the height value of a font to calculate the new height and number of passes required. Before you magnify a font, use the DD3 Font Editor (see Part II) to make sure that the font's height value corresponds to the lowest extender of any character in the font. This is especially important when magnifying Daisy-Dot II fonts.

See sections 2.3-2.6 for more information about prompts.

3.2 Destination File

Next, enter the name of the destination file(s). Remember that, depending on the size of the magnified font, the Magnifier may create one, two, or three files (*.NL2, *.NL3, *.NL4) (in addition to the *.NLQ file) on the same disk and in the same subdirectory you specify for the destination file. Make sure you have quite a bit of free space on the destination drive.

Because the Magnifier accesses the disk drive repeatedly, I strongly recommend choosing your destination file on a RAMdisk if at all possible.

See sections 2.4-2.6 for more information about prompts.

3.3 New Height

The next step is to enter a magnification factor: [2] for double height, [3] for triple height, and [4] for quadruple height.

After confirmation of the information you've entered, the magnification process will begin.

4. ITALICIZER

This sub-program creates an Italicized version of any standard DD3 or Daisy-Dot II font. (It can't italicize magnified fonts comprised of more than one file — italicize the original font before magnifying it). The Italicizer automatically makes the italics font proportional, so if you want a fixed-pitch italics font you must edit it with the DD3 Font Editor (see Part II).

If an italicized character is wider than the maximum 32 columns, the extra columns will be truncated.

The following two sections describe the two prompts of the Italicizer in order of their appearance within the sub-program.

4.1 Source File

After you choose the Italicizer from the main menu, enter the filename of the font(s) you wish to italicize. See sections 2.4-2.6 for information about prompts and filenames.

4.2 Destination File

Next, enter the filename for the destination italics font(s). Personally, I like to identify my italics font with an "I" at the end of the filename. For example, I gave the name ROMANI to the italics version of my ROMAN font.

See sections 2.4-2.6 for more information about prompts.

After entering the destination file, the process begins.

5. CONVERTER

The DD3 Atari to Daisy-Dot Font Converter, based on an original idea from Robert Lee, converts Atari 9 sector screen fonts into DD3 format with options for conversion to double height and/or double width.

The following sections describe the different prompts of the Converter in order of their appearance within the sub-program.

5.1 Source File

Specify the name of the Atari screen font(s) you wish to convert. In this case, the .FNT extender is assumed. See sections 2.4-2.6.

5.2 Destination File

Enter the name of destination DD3 font(s). See sections 2.4-2.6.

5.3 Height

Hit [1] for single height or [2] for double height. If you want even taller characters, you can use the Magnifier to enlarge the converted font. However, because of the small size of the screen fonts, they will look very jagged if magnified too much.

5.4 Width

Hit [1] for single width or [2] for double width. Still wider characters can be selected when printing with the Print Processor (see Part I).

5.5 Proportional?

Answer [Y] to have DD3FU generate a proportional version of the screen font or press [N] to keep the font at a fixed pitch.

After answering these prompts, confirm your entries to begin the conversion process.

6. CONCLUSION

The DD3 Font Utilities is a toolkit that lets you easily add many fonts to your collection. It's pleasantly surprising how a magnified and italicized font often looks like a brand new font instead of just a derivative of another font.

PART IV: Daisy-Dot Font Formats

1. INTRODUCTION

The information in this part is more technical and can be ignored by beginners.

With larger font sizes and the many new capabilities of Daisy-Dot III, there is no limit to what creative Atari users could do with the system. For those interested in writing additional utility programs for DD3, I'm including the detailed font format of each of the three types of DD3 fonts:

- Daisy-Dot/Daisy-Dot II Fonts
- Standard Daisy-Dot III Fonts
- Magnified Daisy-Dot III Fonts

Here are some ideas for additional font utility programs that could be written:

- A program to convert PrintShop, Newsroom, or other types of fonts into DD3 format.

- A program that lets the user create graphics screens for import PrintShop icons) and then breaks up the graphics into multiple characters of magnified fonts. For example, a picture of a 128 X 128 matrix could be saved as four characters in a quadruple height font. Then, from the Print Processor, choosing the correct font and printing the four characters (maybe "ABCD") with zero character spacing would reproduce the graphics in the document. (The DD3 logo, printed at the beginning of the documentation, is a manually-done example of this idea.) Even larger graphics could be used by selecting zero spacing between lines and printing several lines of different fonts.

- A program to create high resolution multiple height fonts. (As it is now, magnified fonts have lower resolution than the original versions of those fonts.)

Programmers could go even one step further and design stand-alone applications that create their own fonts and text files and then call the DD3 print processor with command line options to print the data. For example, a WYSIWYG (What you see is what you get) label generating program could translate an on-screen display into a text file that guides the DD3 print processor into reproducing the image. This method would save a programmer a lot of time — routines like centering and drivers for numerous printers are already available with DD3 and wouldn't have to be reprogrammed.

I'd be delighted to see any utilities you can come up with.

The following three sections describe the three font formats mentioned above.

2. DAISY-DOT / DAISY-DOT II (DDII)

These fonts are compatible with every version of Daisy-Dot. They have a maximum character matrix of 19 X 16. Because they don't have height or underline values, DD3 assumes height and underline values of 15. Over one hundred fonts in this format have been developed over the last few years. The DD3 Font Editor and the DD3 Font Utilities do not save fonts in this format.

2.1 Header

Each DDII font begins with a 19 byte header: DAISY-DOT NLQ FONT followed by a [RETURN].

2.2 Characters

The header is followed by the data for 91 characters: ASCII values 32-95, 97-122, and 124.

The first byte for each character is the ATASCII character equivalent to the width of the character (from 1 to 19). For example, a character that is 4 columns wide would be represented by a CTRL-D (ATASCII value 4). After the width byte comes "width" number (the numerical value represented by the width byte) of bytes which make up the graphics data for the first pass of the print head, followed by "width" number of bytes to make up the second pass, followed by a [RETURN]. For example, the width byte of a character 4 columns wide would be followed by 4 bytes for the first pass, 4 bytes for the second pass, and a [RETURN].

The graphics data is stored in Epson format: the top of the 8 pins used for graphics has the value of 128 and the bottom pin has the value of 1.

3. DAISY-DOT III (STANDARD)

This is the new font format which allows characters to be up to 32 X 32 dots in size. It also includes height and underline values to instruct DD3 how to add vertical space between lines and how to underline the font's characters. The space character is stored only in terms of its width.

3.1 Header

Each standard DD3 font begins with a 2 byte header: 3 followed by a [RETURN].

3.2 Characters

The DD3 font header is followed by character data for 90 ASCII characters: 33-95, 97-122, and 124. This data is followed by 3 more bytes, as described in section 3.3.

The data for each character begins with one byte representing the ATASCII value of the character's width (from 1 to 32) plus 64 if the character is more than 16 rows high. For example, the first byte for a character 16 columns wide and 12 rows high would be CTRL-P (ATASCII value 16). As another example, the first byte for a character 8 columns wide and 32 rows high would be "H" (ATASCII value 72, or 64+8).

The first byte for each character is followed by "width" number (the numerical value represented by the width byte) of columns of graphics data for the first pass, followed by "width" columns for the second pass. Since two passes accounts for only up to 16 rows, if the character is taller (i.e. the width byte includes the value 64), the data for the first two passes is followed by "width" columns for the third pass and "width" columns for the fourth pass.

Note that unlike DDII fonts, the data for each character is NOT followed by a [RETURN].

3.3 Extra Values

The data for all 90 characters is followed by three more bytes. The first byte is the height value, from ATASCII values 1-31. Next comes the underline value from ATASCII values 1-31. The final byte is the space width, ranging between ATASCII values 1-32.

4. DAISY-DOT III (MAGNIFIED)

This special format is found in magnified font files created by the DD3 Magnifier sub-program within the DD3 Font Utilities when the magnified font requires more than one font file (i.e. taller than 32 rows). A magnified font can be comprised of up to 4 separate files. See Part III, section 3 for more information.

This is the format one could use for converting graphics into a font or for creating a very tall, high resolution font.

The format is almost identical to the standard DD3 font format. This specific format is recognized only by the Print Processor.

4.1 Header

Magnified DD3 fonts begin with a two-byte header: B followed by a [RETURN]

4.2 Characters

The header is followed by the graphics data for the 32 rows corresponding to the specific font file. For example, in a quadruple height font made up of *.NLQ, *.NL2, *.NL3, and *.NL4, *.NLQ has the data for the first 32 rows, *.NL2 has the data for the next 32 rows, *.NL3 has the data for the next 32 rows, and *.NL4 has the data for the final 32 rows.

The character data is in the exact format of the standard DD3 font. See section 3.2.

4.3 Extra Values

As with the standard DD3 font, the character data is followed by three more bytes. The first is the height value. If this is the first font file of a magnified font (*.NL0), the height value applies to the entire font and ranges from ATASCII 1-127. A height value of 127 equates to 128 rows of dots. It is this height value that tells the DD3 Print Processor how many font files to look for to form the entire font:

total # of files = Integer value of (height + 1)/32. Add 1 if the division leaves a remainder.

For all other magnified font files of a certain font (*.NL2, *.NL3, and *.NL4), the height value contains the ATASCII number 31.

The next byte is the underline value for the entire font, from ATASCII 1-127. This underline value will be the same for each file that makes up a magnified font.

The final byte is the space width, ranging from ATASCII 1-32. The space width is the same in each file that makes up the magnified font.

5. CONCLUSION

This part summarizes the different font formats compatible with Daisy-Dot III, hopefully giving the user all the information needed to write new font utilities.

As one final note, please remember not to include the illegal values 13 and 155 as graphics data for any character in any font format. The DD3 Print Processor assumes that the program which made the font already checked for these values; it doesn't perform any additional checks on the legality of a font's data.

POSTSCRIPT

I hope you enjoy Daisy-Dot III and can find many practical uses for its capabilities. Please feel free to contact me with any comments or questions. Also, I'd love to see a copy of any special documents you create with the system.

If you're curious, here is a short history of the Daisy-Dot programs: I wrote the very first version of Daisy-Dot in 1986 at the age of 14. Written in BASIC, it included two fonts, had no font editor, and had no formatting features. This version was under VERY limited distribution. In March of 1987, I added a font editor and released the program in TurboBASIC. Thanks to GENie and CompuServe, the program reached Atari users across the country and was very well-received. In December of 1987, I released Daisy-Dot II, with many more formatting features. Again, thanks to on-line networks and enthusiastic reviews from Antic magazine and Computer Shopper, DDII became very popular with thousands of people around the world. I began work on Daisy-Dot III in the fall of 1988 — this project has been under development for more than a year.