



# LOADING INSTRUCTIONS

## PAGE PRO 99

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### INTRODUCTION

PAGE PRO 99 has a long and varied history. The program was begun almost two years ago by Chris Bobbitt and Ed Johnson. In its original conception it was simply a modified version of TI-Writer that would allow you to generate a form on the screen with a limited number of line patterns. Originally, we decided to call the program "Form Maker 99" (you may have seen it advertised under this name). The program worked fine, but we weren't satisfied.

The program wasn't capable of doing things that form programs for other computers could do. Ed and Chris thought of a lot of things they both wanted to see in the program - in retrospect things which redefined the concept they originally had. Ed started from scratch in assembly and what you see before you is the result of nearly two years of development and "fine tuning". PAGE PRO 99 is a program that, to put it simply, allows you to create full page forms. With PAGE PRO 99 you can type in any of four different directions using a small or large text font, draw lines with a line font, and include up to 28 pictures of any size anywhere on the page. You can "import" a TI-Writer text file and "export" a page as a text file for use in other programs. You can even print out the page in different dot densities (ranging from a "rough draft" single-density to reproduction quality quadruple-density).

Due to the vast changes in the program over it's course of development, the name "Form Maker 99" just didn't seem to do justice to it's capabilities. At the recommendation of a very good friend (thanks Denny!), we decided to change the name to "PAGE PRO 99". We hope that you'll agree that the performance of this program lives up to it's new name!

PAGE PRO 99 will, in effect, let you do much of what a dedicated desktop publisher will do, much simpler and faster. PAGE PRO 99 is the only program of its type that is entirely "what-you-see-is-what-you-get". Whatever text, lines, or pictures you place on the screen will appear exactly as they will on your paper. Unlike other desktop publishing programs, it is EASY to create impressive looking letterheads, signs, charts, maps, graphs, and even forms.

However, we aren't going to call PAGE PRO 99 a true "desktop publisher". Why? Because PAGE PRO 99 will only let you have three different fonts on the page at once, and only 28 pictures. It really isn't fair to call it a desktop publisher, even though it does more in this area than most other programs that call themselves such. We simply don't want to raise everyone's expectations of what it will do. We won't object if YOU'd like to use PAGE PRO 99 as a desktop publisher, or even if YOU would like to call it one. We simply won't do so. We use it to make more than just forms, and think that you will too!

PAGE PRO 99 is an assembly program. Before doing anything else, make a backup copy of the program and use the backup copy. Before loading the program, place the appropriate module in the module port, turn on the computer, place the program in disk drive #1, and select the module. As with most assembly programs, it can be loaded in a variety of ways:

Through the Editor/Assembler module

Select E/A option #5 - Load Program File.  
Press enter for the default name "UTIL1" (even though no filename appears, this loader will look for DSK1.UTIL1).  
The program will then load and run.

Through the TI-Writer module

Select option #3 - Utility.  
Press enter for the default name that appears on the screen (DSK1.UTIL1).  
The program will then load and run.

Through the Extended BASIC module

With the program disk in drive #1, the program will load and run automatically after selecting Extended BASIC from the menu screen.

## PROGRAM CONCEPTS

All of the functions of PAGE PRO 99 are in one program. When the program first loads and runs, a title screen will appear in the upper 3/4 of the screen. This upper 3/4 area is the "page window" to a much larger area, which is the entire page.

What you see is 12 lines by 31 columns of the total 66 lines by 60 columns of the page. As you move around the page, the window will adjust itself to display the part of the page you are on. The only way to view the whole page is to print it out.

The 66 line by 60 column page of PAGE PRO 99 is almost the same size as a standard typewritten page (a standard text page is 66 by 80). When printed out, it will fill a 8 1/2 by 11 inch page from perforation to perforation, with a small margin on the left and right. Proper paper alignment is very important!

The bottom 1/4 of the screen is used for displaying the "status" line, prompts, and for getting the keyboard input for filenames, etc. The status line keeps you updated on the current cursor position on the page, the direction the cursor will move as you type, and whether or not the picture display is "on" or "off" (more on this later!).

## GETTING STARTED

Once you understand how the program represents a page, you can actually get started in creating your own layout for a page. Once you are familiar with the cursor controls and how they work, you can easily begin typing in your text.

Note that as you type, when reaching the end of a line, the cursor automatically wraps down to the next line. However, any word you may have been typing at the right-hand side of the page will be split in two. PAGE PRO 99 does not support "word-wrap" - in other words, it will not automatically keep words connected between lines. If this editing limitation is cumbersome to you, PAGE PRO 99 will let you use any text editor that saves files in Display, Variable 88 format to generate the bulk of your text, and then you can "import" it into PAGE PRO 99 to put the "finishing touches" on your work.

## CURSOR CONTROL KEYS

### ARROW KEYS - Fctn E, S, D, and X

These keys will simply move you around your page without disturbing whatever you have on the page.

### PAGE DOWN - Fctn 4

Moves the cursor down the page 12 lines at a time until it reaches the last line (line 66).

### PAGE UP - Fctn 6

Moves the cursor up the page 12 lines at a time until it reaches the first line (line 1).

### WINDOW LEFT/RIGHT - Fctn 5

Moves the cursor forward or back 38 columns to the window opposite of the one you are currently in.

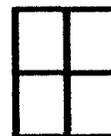
### CURSOR AUTO-MOVEMENT DIRECTION - Ctrl E, S, D, X

These keys control which direction the cursor will move after pressing a key when editing your text or drawing lines. The arrow in the lower right-hand corner of the screen indicates the direction you will move as you type.

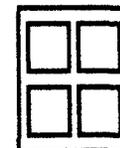
PAGE PRO 99 will always treat the cursor movement as left to right in terms of where the cursor will end up after pressing the ENTER key or when it wraps to the next line. That is, if you are typing "backwards" (right to left), the cursor will move up one line after ENTER is pressed or if you "wrap" left of column #1. Similarly, if you are typing down the page, you will end up at the top of the page one column to the left after pressing ENTER or if you wrap off the bottom of the page. On the surface this may seem trivial or too confusing, but it will make entering text with a sideways or upside-down font much easier (anyone thinking "greeting cards" yet? We were!). Spend some time getting used to typing in different directions. You will soon be a real "pro" getting around with PAGE PRO 99!

# EDITING KEYS

## LINE COMMANDS:



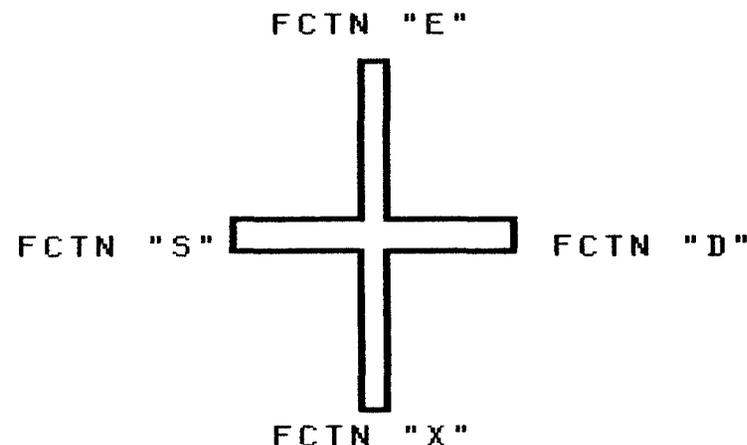
AEGB  
F F F  
IEKEJ  
F F F  
CEHD



aegeb  
f f f  
iekej  
f f f  
cehed

## EDIT KEYS:

- FCTN "E/X/S/D" - Move cursor to up/down/left or right
- FCTN "1" - Delete character
- FCTN "2" - Insert character
- FCTN "3" - Delete line
- FCTN "4" - Down one screen
- FCTN "5" - Next Screen
- FCTN "6" - Up one screen
- FCTN "8" - Insert line



## EDITING KEYS

### DELETE CHARACTER - Fctn 1

Is only active when typing small text or line characters. It will delete a single character and pull all characters to the right of the cursor one position to the left. Large text and pictures are not shifted, nor are any characters to the right of a large text character or picture affected by the delete.

### INSERT CHARACTER - Fctn 2

Is only active when typing small text or line characters. It will insert a single space and push all characters from the cursor to the right one position. Large characters as well as pictures are not affected by an insertion, nor are any characters to the right of large text or pictures. Insert does not stay "on", it just inserts a single space.

### DELETE LINE - Fctn 3

Is active at all times and will delete the line that the cursor is currently located on. Some care must be taken so that large characters are not "cut in half" (the other half that remains will look a bit funny!). Also, deleting a line that has a picture on it may give you some unwanted results. If the top row of a picture is deleted, the entire picture will be deleted. If any other row of a picture is deleted, only that row of the picture will be removed. All lines below the deleted one will be pulled up to "close the gap" and a blank line will be placed at the bottom of the page.

### INSERT LINE - Fctn 8

Is active at all times and will insert a blank line at the current line the cursor is on. Some care must be taken to not "cut in half" any large text or pictures. This may result in some unwanted results or cause an error when the program tries to load a picture from disk (Handling this type of situation is discussed in more detail in the "Tips and Tricks" section of this manual). All lines from the current line down are pushed down to make room for the new line. The last line of text is pushed off the bottom of the page and can't be recovered.

## DRAWING WITH LINES

At some point you will want to draw some lines on your page. You may need a line to draw a table, a decoration, a border for a sign or memo, or to delineate different parts of the page.

In PAGE PRO 99, a line character is actually part of a "font". There are 30 line graphics representing straight pieces, corners, cross pieces, and other connectors. These line graphics are attached to the keys A through O on the keyboard. The first 15 line graphics are placed by using upper case A-O. The second 15 line graphics are placed by

## DRAWING WITH LINES (Continued)

using lower case a-o.

To get into the line graphics mode, press CTRL 8. This key acts just like a switch to turn the line mode on and off. To leave this mode, just press CTRL 8 again. Notice that the cursor changes when you turn this mode on. A small "L" appears in the center of the cursor to indicate that you are now in the line graphics mode. Much easier to notice is the line "reference" that appears in the status area whenever the line graphics mode is on. This reference is there to help remind you which characters are attached to which keys. If this display is a bit confusing at first, you may want to load and print the sample page "LINE-AID" that was included with the program and use it as a guide until you are more comfortable with the program. Entering line graphics in this manner may seem strange at first, but before long, it will become second nature to you.

You do not necessarily have to be satisfied with the line graphics that are "imbedded" into PAGE PRO 99 as the "default" characters. See the "Alternate Fonts" section for more details about using different line graphics.

## LARGE CHARACTERS

PAGE PRO 99 supports two sizes of characters, an 8 by 12 pixel font (the default set when the program starts) and a 16 by 24 pixel font. To access the large font, just press CTRL 9. You will instantly see the cursor double in size. Now as you type, you will see the large characters that are currently in memory being displayed on the screen. Due to the way large characters are handled by PAGE PRO 99, the screen must be re-drawn after each large character is keyed in. This only becomes cumbersome when pictures are also displayed. It is generally a good idea to make sure that the picture display is turned off when typing with large characters (this is one case where things were made easier for the programmer! Look for this to be addressed in future updates).

You will notice that the placement of the cursor is determined by setting the upper left-hand corner of the large to the current line and column position. The exception to this is when the small cursor is located at column 60 or line 66. If this is the case, the upper left-hand position will be set to column 59 or line 65 (backed up one space) so that you can't enter a half character. Also, pressing ENTER or wrapping the screen will always bring you to the first position of the next line or column (depending on the current auto-movement direction of the cursor). This may throw you off a bit when you reach the next line. To fix this, just turn the small characters back on (by pressing CTRL 9 again) and adjust the upper left position to the correct location and turn the large font back on. See the "ALTERNATE FONTS" section for info on loading new fonts.

## PICTURES PICTURES PICTURES

PAGE PRO 99 allows you to place up to 28 pictures anywhere on your page. These pictures are in a special file format that is different from other graphics programs. A utility to convert TI-Artist(tm) Instances to PAGE PRO 99 format has been included. Other conversion utilities are in the works and should be available soon. An important point to mention is that the size of the pictures is not limited in any way. PAGE PRO 99 can handle pictures as large as the entire page (actually larger, but anything exceeding the page boundaries would be "trimmed off") or as small as a single character. It is also possible to overlay two or more characters. While PAGE PRO 99 doesn't support the ability to actually "merge" pictures, it does ignore as much of the "white" space in pictures as possible. The "PICT-AID" file included gives a more visual example of exactly how this works.

## LOADING PICTURES

To load a picture and place it on your page, position the cursor in the upper left-hand corner of where you want the picture to start, and press CTRL L. PAGE PRO 99 will ask you for the path and filename of the picture you want to load. The picture file will then be read to determine its size and to find all of the "white" space. If the picture display is turned on, you will then see as much of the picture as will fit on the screen. If the picture display is turned off, you will see a bunch inverse "P"'s on the screen in the place of your picture.

CTRL O (oh, not zero) acts as a toggle switch for turning the picture display on and off. When the program first starts, picture display is on (indicated by the inverse P in the center of the line/column status line). To turn the picture display off, press CTRL O. You will see the P in the status line change to a "\*" to indicate that the picture display mode is off. This feature is included mainly for speed purposes. PAGE PRO 99 does not hold the picture in memory, it just keeps track of where it is located on the page and where the picture can be found on your disk. ALL PICTURES THAT HAVE BEEN LOADED MUST REMAIN IN YOUR DISK DRIVE(S) SO PAGE PRO 99 CAN FIND THEM! It is highly recommended that you copy any picture files you plan on using to your work disk before starting a session.

## DELETING PICTURES

There are 3 ways to delete pictures from your page. The first is to simply type any text over the area the picture occupies. You can type text over any part of a picture or the whole thing if you wish. There are advantages to typing over parts of a picture, but there is little advantage in

## DELETING PICTURES (Continued)

using this method to erase an entire picture. If you use this method to delete a picture, the picture data will not be deleted from the table in the program that keeps track of the pictures. This is not a big problem unless you plan on using all 28 pictures that are available. The second way to delete a picture, and this is the recommended way, is to move the cursor onto any part portion of the picture you want to delete and press CTRL K (if you think of this operation as "killing" the picture it will be easy to remember CTRL K). The status area will display a prompt asking you if you indeed want to delete the picture. Press "Y" to confirm your intent. If the display prompt tells you that a picture is not located where the cursor is, it means that you are not on the picture or are located on some "white" space in the middle of the picture area (the easiest way to see where the "white" space is located is to turn the picture display off). Just reposition the cursor and try again. The third way to delete a picture is by pressing CTRL U. This operation will delete all pictures on your page and reset the table that keeps track of picture locations. Use caution with operation. Once you confirm your action, all pictures will be erased.

## SAVING A PAGE

Once you have created a page, you may want to save it for future editing or printing. PAGE PRO 99 provides 2 ways for you to save your work. Press CTRL F to bring up the file options menu. To save your page along with your picture information, select option #2 - Save Page. This selection will save your page into a 21 sector "memory image" file that contains your text as well as your picture data. Option #4, (Export Text) should be used when you just want to save the text for use in other programs. The picture data will not be saved with this option.

## LOADING A PAGE

To load a previously saved page, just bring up the file options menu by pressing CTRL F. Select option #1 - Load Page to load a page that was previously saved with option #2. To load a text file that was saved with option #4 or created using another program (such as TI-Writer), select option #3 - Import Text. This option will read any D/V80 file and load it into PAGE PRO 99. Note that the limit is 66 lines by 60 columns of text. Any text beyond 60 characters per line or beyond 66 lines will be ignored. Also, remember that when you load a page (option #1) the picture data is also loaded. Pictures should be in the same the drives that they were in when the page was saved. See the "Tips and Tricks" section for some ideas on handling this.

## ALTERNATE FONTS

PAGE PRO 99 can hold 3 different fonts in memory at any one time—a small text font, a large text font, and a line graphics font. Each of these fonts can be changed by loading in a new font from disk. To load an alternate font, press CTRL A. A sub-menu will be displayed offering you a choice of which new font to load. Press "1" to load a new line graphics font, "2" to load a new small text font, or "3" to load a new large text font. Next, you will be asked to enter the path and filename of the new font. The new font will then be loaded and will replace the old font in memory. PAGE PRO 99 can only support one each of the three different fonts at a time. With creative use of the picture capabilities, it is easy to give the appearance of more fonts on a page. See the "Tips and Tricks" section for some ideas.

## PRINTING A PAGE

Printing a page is simple with PAGE PRO 99. Just press CTRL P and you will be prompted to enter the path and file name of the device you want to send your output to (it is possible to "print" a page to disk, but be warned that the resulting file will be very large! A single-density print file on disk will take up around 200 sectors, a double-density about 400, and a quad-density about 800.

After entering the device name for your printer, you will be prompted to select the density of your printed output. Most of the newer Epson-compatible printers will support all three of the density selections offered (single, double, and quadruple), but many of the older models will only support single and double. Check your printer manual if you are not sure. Press 1, 2, or 3 to select the desired print density.

Next, the program will check to see if the picture display mode is turned on. If not, you will be asked if you want to turn the pictures on. Press "Y" to turn pictures on or any other key to leave them off. If you print a page with pictures turned off, the inverse "P"s you see displayed on the screen will be printed instead of your pictures. Why would you ever want to do this? If you just wanted a "rough draft" to check the layout of a page, it is a bit faster to get a print-out with pictures turned off since they don't have to be read in from disk.

Everything is now set to print. You will be reminded to make sure your printer is turned on and ready to go (paper aligned, etc.). Press enter to start the printing process. The screen will go blank while the page is printed. This is a necessary evil and is nothing to be concerned about.

If you need to abort printing for any reason, just press FCTN 4. If you are using PAGE PRO 99 with print spooler, it may be necessary to turn your printer off to totally stop the printer.

## CHANGING SCREEN COLORS

Press CTRL C to change the screen colors of PAGE PRO 99. There are 12 different color combinations in all that should cover most preferences for various types of display monitors.

## MISCELLANEOUS NOTES

At virtually all prompts when PAGE PRO 99 is asking for information (filenames, menu selection, etc.), you can cancel the operation by pressing FCTN 9. If this is done when entering a filename, the name will be erased and the next time you access that particular mode, you will have to re-enter the filename (the default name is also erased).

Under certain circumstances it is necessary to turn the screen display off briefly (when inserting and deleting lines, saving or loading a page, and during printing). Do not be alarmed by this. It is done intentionally to save you from viewing some "garbage" for a moment while the operation is taking place.

When ever an "I/O error" occurs, the picture display mode is automatically turned off. This is done so that you do not necessarily have to always have your pictures located in the exact same disk drive(s) as when a page was saved. If loading a picture did not cause the error, simply press CTRL O to turn them back on.

## Disclaimer

Asgard Software provides no warranty, implicit or otherwise, that the programs constituting Page Pro 99 will be free from error, or meet the needs or expectations of the user. Asgard Software provides no warranty beyond that covering the physical components consisting of the program media, which may be returned for a free replacement at any time within 90 days of purchase if defective. After 90 days, this product may be returned for service or replacement (at the option of Asgard Software) for the cost of return postage. This product is warranted in this manner for its lifetime.

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P.O. Box 10306  
Rockville, MD 20850**

# Page Pro Utilities

Page Pro 99 comes with a collection of utilities designed to expand your page-making capabilities. These utilities allow you to convert over standard artwork into Page Pro's format, as well as manipulate text files for use in Page Pro 99. Future utility packages will enhance the capabilities of the program in remarkable new directions.

## Loading

All of the Page Pro 99 Utilities are available from a Main Menu from Extended BASIC. Follow the Extended BASIC loading procedure as outlined in the Main Manual. When the program menu has appeared, select the Utility desired by pressing the key of its number. When the Utility has finished executing, it will return you to this Main Menu, where you can load and run other utilities or the program itself, or quit.

## Columnizer

The Columnizer program is selected by pressing the key of the number to the left of its name on the Main Menu.

Please note before continuing, this utility assumes (a) some experience with TI-Writer, and (b), some experience with the TI-99/4A in general. If you don't have **both**, you may want to skip this section as it could easily be an exercise in frustration.

This utility is very simple in concept, but can be tricky in execution. In a nutshell: the program takes any TI-Writer text file, converts it into 22 to 29 character columns, and breaks it into files of exactly 1 page each. After it has done this, you load Page Pro 99, and use the Import Text file to load in each page individually so that you can add titles and pictures. Finally, you print each page and/or save it to disk and move on to the next.

However, in actual usage there are a number of conventions you have to follow to get it right.

First, create a text file in TI-Writer or a derivative. This file must obey the following rules:

(1) It must contain no TI-Writer formatting commands, such as .LM or .FI .

(2) Paragraphs should not be indented. If you must have indentation - start each paragraph with a caret (^) for each space you want left free. Then, after the Columnizer is done with the text file, type a space over each caret.

(3) Each paragraph should end in a carriage return (a little CR symbol). Blank lines should also be marked with a carriage return. Do not include line feeds in your text file (little LF symbols) under any circumstances. Columnizer will not right-justify lines ending in a carriage return, and will leave a blank line in the column for any line found with just a carriage return on it.

(4) You should save the file to disk with the PrintFile function and not the SaveFile function. Just specify your disk filename as you would always in doing so.

That is the bad news. The good news is that you can type in as many columns as you like. Columnizer takes in each line of your text file and breaks it down into its constituent words. It then re-assembles it at the appropriate margins. In this way it is very flexible, and imposes few restrictions on how you create text. The only drawback is that the program can be very slow - it can take as long as 15-45 minutes to process a single page on a TI-99/4A. This is the kind of utility you will want to start before bed. Fortunately, it is designed where it can be used in just that way.

After you have created a text file, run the program as described in the beginning. With little fanfare other than the title, the utility will appear and ask you for the filename of the text file you created. It will then ask you the size of the "gutter". In typesetting terminology, the "gutter" is the amount of space between each column in multi-column text. Columnizer defaults to a size of "4", which is to say 4 spaces between each column - or 2 columns of 28 characters each on the page. You can specify between 2 and 30 as the size of your gutter (meaning columns of from 15 to 29 characters wide). Please note that the gutter size specified must always be an even number - Columnizer can't print, say 29 1/2 characters wide (which they'd have to be if you specified a gutter width of "1").

After entering the gutter width, you must decide whether you want the columns justified or not. Justified columns are even on both the left

and right side, while not justified columns are even only on the left side only. Answer this by pressing "Y" or "N".

The next question needs a little explanation. When Columnizer does its job, it automatically leaves the top 2 and bottom 2 lines empty. This in effect makes each column 62 lines long (since a page is 66 lines). This was done deliberately because when Page Pro 99 prints out a page it leaves no top and bottom margins. Sometimes, however, Columnizer will leave extra lines at the top or bottom "accidentally". This is because of unfortunately placed blank lines in your text. To avoid these, which can be unsightly, simply answer "Y" at this option to remove any excess lines. Don't select this option if you are deliberately leaving blank lines in the text for large titling, pictures and such.

Finally, Columnizer will ask you to enter the output filename. It will allow you to enter a filename of up to 8 characters long. The limitation is because it appends the page number to the end of each page it creates. So, if your input text file was:

**DSK1.MYTEXT**

And you specified an output filename of:

**DSK1.PAGES**

It would create files:

**DSK1.PAGES01**

**DSK1.PAGES02**

**DSK1.PAGES03**

.

.

**DSK1.PAGESxx**

When "xx" equals the last page number. As you may have guessed, your text file can be up to 99 pages long, though if anyone complains we will happily make this number larger. Note that each page is about 16 sectors long, so it is highly advisable that you have plenty of disk space free before columnizing your text - otherwise you'll find only some of your pages on the disk later.

After pressing *ENTER*, the utility will get to work on your text file and create all of those files of a page long. As it works, it will tell you what page, and what line it is currently working on.

When Columnizer is done, it will then ask you if you wish to process another text file, or to return to the Main Menu.

Now that your pages are ready, it is time to load Page Pro 99 and read them in one at a time. For information about using the Import Text function, see the main manual. For more information about using the Columnizer, see the section *Advanced Techniques* elsewhere in this manual.

## Convert Instances

The Convert Instances utility is used to convert a disk of pictures from TI-Artist Instance to Page Pro 99 Picture format. Why a new picture format? Well, one reason is that in order to be able to read in only the part of a picture that needs to be displayed at any one time, the pictures must be in a different format. Another is that pictures in this format take up less than half the disk space they do in TI-Artist format. Finally, this format is not necessarily limited to 256 by 192 pixels, like TI-Artist. Future utilities will be produced for converting pictures as large as 480 x 792 pixels in size.

Before you use this utility, copy the TI-Artist instances that you want onto a separate, blank disk. If you have a single drive system, leave about half the disk free, and if you have a multiple drive system, initialize an empty disk to contain the converted pictures. While Page Pro pictures take typically half the space of their TI-Artist equivalent, we recommend leaving this amount of space just to make sure.

Next, run this utility from the Main Menu by pressing the key of the number for the option.

When the utility starts, it will ask you for the number of the disk drive containing the disk with the pictures (the "source" disk) and the disk drive where the converted pictures will go (the "destination" disk). The Convert Instances utility will now catalog the source disk, find all of the TI-Artist instances on it, and convert them one by one - writing the result to the destination disk. This process may take a while, depending on the size of the pictures and the number on the source disk.

When it is done, it will give you the option of converting another disk full, or returning to the Main Menu.

If you don't want to go to all of this trouble, Asgard Software offers a series of packages containing pre-converted pictures of various themes, called *Page Pro Pictures*. Inquire with the address in this booklet for information about these packages.

## Convert Fonts

This utility allows you to convert TI-Artist compatible fonts into Page Pro 99 format. Why do we support a different font format? For one thing, Page Pro 99 fonts, unlike TI-Artist fonts, contain all of the upper and lowercase letters, numbers and symbols. Secondly, they load a lot faster in this format, and lastly, typically take up much less space.

Before loading this utility, copy your TI-Artist fonts onto an empty disk. It is a good idea to write down their filenames as you do so, or produce a disk catalog. Next, load this utility by selecting its number from the Main Menu.

The starting menu of the Convert Fonts utility is as follows:

### Main Menu

1. Convert Small Fonts
2. Convert Large Fonts
3. Quit

Small fonts in Page Pro 99 are 12 pixels high and 8 pixels wide. When selecting TI-Artist fonts to convert, make sure that they are no more than 2 "blocks" high and 1 block wide (a block in TI-Artist is 8 pixels). Characters larger than this will be ignored.

Large fonts in Page Pro 99 are exactly 4 times the size of Small fonts - or 24 pixels high by 16 pixels wide. Make sure that TI-Artist fonts you choose are no larger than 2 blocks wide and 3 blocks high. Characters in the font wider than 2 blocks and taller than 3 will not be converted. You will find that many TI-Artist fonts don't quite fit into this area - in that case you may want to use a program such as Asgard Software's

*Artist Enlarger* or Genial Computerware's *Graphics Expander* to convert your favorite fonts to this size.

Make sure that you know the filenames of the TI-Artist fonts you wish to convert prior to using this utility, and whether they are to be converted into Large or Small fonts.

After this menu appears, select the option for the fonts you are converting. If you select Small Fonts, for instance, the following menu will appear:

### Small Fonts Conversions

1. Load a Page Pro Small Font
2. Convert TI-Artist Font
3. Save Page Pro Small Font
4. Return to previous menu

The Large Font Conversion menu is exactly the same (except that it will say "Large Font" instead of "Small Font").

Before converting in your TI-Artist font, load in a Page Pro 99 font from the Example Disk shipped with the program (FONT1\_LG for instance). Why? When Page Pro 99 converts a TI-Artist font into its format, it will try to create a font with all of the upper and lower case letters, numbers and symbols. If they aren't present in the TI-Artist font, it will simply make the characters absent blank in the font. However, if you load a Page Pro 99 font prior that contains all of the characters, it will substitute the characters in the Page Pro font for any characters not found in the TI-Artist font.

Next, select the 2nd option and specify the TI-Artist font filename.

Finally, when you are done, select the third option and save the now-converted font as a Page Pro 99 font. You may want to add the suffix "\_LG" or "\_SM" at the end of the filename (depending on whether it is a Large font or a Small font), to indicate it is a Page Pro 99 Large or Small font.

When you are done, return to the starting menu of this utility and quit to the Master Title Screen of your computer.

# Page Pro 99 Tutorial

One way to learn how to use Page Pro 99 is to sit down and use it to do something you bought it for. Another way is to look at something someone else did with it, and try to figure out how it was done. In this tutorial we'll try to use a little of both methods.

Page Pro 99 includes a disk of example pictures, fonts and pages. All the examples were created with the program, utilities provided with Page Pro 99, or from other drawing programs and were converted into Page Pro format. It is important to note that the Example Disk was created in less than a few hours by an inexperienced user of the program. If you simply try to use Page Pro 99, you can do this too.

To demonstrate some of the capabilities of the program, the following sample pages (with the same filenames) are provided on the Example Disk:

AD  
GREETING1  
GREETING2  
INVITATION  
INVOICE  
LETTERHEAD  
STATIONARY

Please note that you can use Page Pro 99 in many other ways than these 7 examples may suggest: it can be used to create a full-range of business forms, as well as labels, business cards, maps, flyers of any type, and much more.

Before we get started, please review the sections in the program manual on loading the program, and then do so.

## Getting Started

After loading the program from Extended BASIC, press any key to advance beyond the title screen.

The screen will be cleared, and a cursor will appear in the upper left hand corner of the screen. As mentioned in the main manual, the screen you see is actually only a small portion of the whole page. When you move the cursor to the edge of the screen, the screen will move to reflect a different part of the page. The best way to illustrate this is to type your name, and then move the cursor down 20 lines (by pressing FCTN-X 20 times). You'll notice your name will disappear at the top of the screen when your cursor first reaches the bottom of it. Don't worry, press the up arrow key (FCTN-E) 20 lines and your name will re-appear.

The status line at the bottom of the screen tells you what row and column you are on at all times. This is so you won't get lost.

A page in Page Pro 99 is 66 lines by 60 columns. There is typically a 1/4" margin on both sides of the page, on a standard Epson compatible printer you'll have 6 lines per inch and about 7 1/2 columns per inch. So, if you want to do (for instance), a business card of 1 1/2 by 3, you'll want to keep your text and graphics within 9 lines and 22 columns. Remember these numbers whenever you are trying to create work to fit within a specific size (such as raffle tickets, business cards and advertisements). All you have to do to create something of a given size is to take the measurements in inches of what you want to do ahead of time, and multiply the height by 6 and the width by 7.5 to get the number of columns and lines you should stay in. The status line will tell you if you've exceeded those numbers if you start your work in line 1, column 1.

Before you start creating something from scratch, look at a few of the examples first.

One very simple example is LETTERHEAD. This is actually a Page Pro version of our own letterhead, which was hand-drawn by an artist. To load this example, do the following:

First, turn off the pictures by pressing CTRL-O (letter O and not number 0). Why do this? One of the major advances of Page Pro over other programs is its ability to freely put pictures on a page. However, this comes at a price - there doesn't even begin to be enough memory in the computer to hold them all. Page Pro 99 accomplishes this feat by only loading in the pictures, and the portions of each thereof, that are displayed on the screen at any time. Because of the nature of disk access, this is a pretty slow process. You can speed it up considerably by

turning the pictures off. If they are turned off, Page Pro 99 will only display a sort of outline where the picture is, instead of the actual picture. This is also useful when you are creating a page from scratch - it is very difficult to create a page when the program constantly has to go to disk to get the part of the picture it needs to display on that part of the page.

When you turn off the pictures, the little P in the middle of the status line on the bottom of the screen becomes an asterisk (\*).

Next, press CTRL-F and select option #1 - Load Page (by pressing the 1 key). Next, make sure the Example Disk is in drive one, and type:

## **DSK1.LETTERHEAD**

It is very important that the Example Disk is in drive one. Why? When you create a page in Page Pro 99, and load pictures on it from disk, it remembers what disk drive you loaded the pictures from. Later, when you print out the page, it recalls the filenames of the pictures on your page and what disk they are on, and reads them in properly. When you save the page, it also saves this file and diskname information with the page. All of the examples on the Example Disk were created with the disk in drive one, hence when you load in one of our example pages with pictures on it, it is going to look in drive one for a disk containing the pictures found on that page. If it doesn't find them, it gives you an error message.

For a way around this, refer to the section Advanced Techniques.

When the page has loaded you'll see a bunch of Ps on the left hand side, as well as a line and some text under it. To see what the page looks like with the pictures turned on, press CTRL-O again. This kind of key is known as a toggle - when you press it once it turns a feature on, and when you press it again it turns it off again.

When you turn on the picture, the program will go to disk and pull it in a bit at a time.

Now, turn off the picture again (by pressing CTRL-O), and press FCTN-5 to window over to the other half of the page. If you use TI-Writer, you'll be familiar with this concept, but if you don't: Page Pro 99 can display a window onto the page equal to half the page wide and about 1/5th of it high (in other words - there are about 10 separate

windows on a page). When you want to see the other half of the page (width-wise), you use the FCTN-5 key to window over to the other half. Pressing it again sends you to the first half, and so on.

At this point you should see the name of our firm (Asgard Software), and our address and phone number on the screen in big text (and the status line should say you are at line 1 and column 31). Three example big fonts are provided on the Example Disk:

HDLNR\_LG  
SALOON\_LG  
FONT1\_LG

To change the big font you see on the screen, press CTRL-A, and select option #3 (LOAD ALTERNATE CHARACTER SETS - LARGE). Now, type in:

**DSK1.FONT1\_LG**

The screen will blank, and then the text will re-appear in the new font (sort of a blocky, squarish one in this example).

At this point, let's print the stationary we've created. First, turn on your printer. Before doing anything else, make sure that your paper is carefully aligned at the top of the sheet - Page Pro 99 uses practically the entire sheet of paper vertically. If you are planning to do a full page document it is a good idea to skip the first 2 and last 2 lines on the page so that you have some margin at the top and bottom of the sheet of paper.

After checking the paper, press CTRL-P. Page Pro will ask you to enter PATH.FILENAME. This really means the device name of your printer (it defaults to PIO.CR, but you can enter RS232/2.BA=9600.LF or any derivation that you use), and then press ENTER. Next, select the density of the printout.

- 1) Single
- 2) Double
- 3) Quad

Single density is usually used for rough drafts - when you want to print out the page really quickly to check the position of a picture, for instance. Double density is used if you want good quality text, and especially if you have a new ribbon that will smear ink in your printer at quad density. Quad density (or quadruple density), is used if you

want high-quality, reproduction ready output. Some printers won't understand quad-density, by the way, and you'll have to use double-density for high-quality print out. For this example, select #2, Double.

Page Pro 99 will then ask you if you want to turn the pictures on before printing (remember, we turned them off above before changing the large font?). Why would you ever want to leave them turned off? Again, if you are checking the positioning of a picture, all you really need is the outline of it

Leaving them off causes the page to be printed much more rapidly because the picture(s) don't need to be read from disk before being printed. For this example, type Y to turn them on.

Finally, Page Pro will give you one last chance to make sure everything is ok before printing. You can press FCTN-9 at this point (or at any of the prior points of this procedure), to abort the printing procedure. Press ENTER when you think everything is ready. If, for some reason, everything isn't ok, you can stop the printing process at any time by pressing (and holding down), FCTN-4. When the program is done printing, turn off the pictures again by pressing CTRL-O.

Now that you've printed a page out and know how to do it, re-read these last few steps since you loaded LETTERHEAD, and put the Program Disk in drive one.

We are going to load in the Quick-Reference sheet and print it out now, but before you do that press CTRL-R. This causes the program to be reset. It isn't really essential before loading in a new page, but it can't hurt. After pressing CTRL-R press Y to reset everything.

You'll notice that the font we previously loaded is still in memory - the title of the program is now in the font you loaded. It will remain in memory until you load a new one or quit the program. Press ENTER to re-start the program.

Now, with the Program Disk in drive one, press CTRL-F, select option #1 (Load Page), and type in the filename:

**DSK1.QUICK-REF**

This is a Quick-Reference sheet which lists all the command keys of Page Pro 99 by function and in alphabetical order, as well as provides a

little chart for using the line drawing font (more on that later). You'll definitely want this on paper, but before printing it out let's change the large font again to something more dignified.

Since this page has no pictures on it, put the Example Disk back in drive one, press CTRL-A, select option #3, and type:

### **DSK1.HDLNR\_LG**

And press ENTER. If you are loading a page that does have pictures on it, and you only have one disk drive, this procedure is a little more complicated. First, you would have turned off the pictures (CTRL-O, remember?), put the font disk in disk drive one, and then load in the new font. Then, you put the disk containing the page and its pictures back in drive one again. You can turn on the pictures again at this point, or print out the page.

Once the font is loaded you don't need the disk containing it again unless you want to load files off of it. If you have two drives, you can put a disk containing fonts in one drive and one containing your page and pictures in another. Please note that your page can use pictures from more than one disk, or from a disk not containing the page, but this must be done when the page is created. When the page is loaded later, again, you must put the picture disk(s) back in the drives they were in when the page was created.

Since this page doesn't have a picture, just leave the Example Disk in drive one (we'll need it later), and start the printing procedure (press CTRL-P and follow the on-screen prompts). This time, instead of double-density, try quad. If all you get on your printer is gibberish, your printer doesn't support quad-density (some of the older Epson-compatibles do not), so you'll have to use double-density in the near future. If this is the case, press FCTN-4 as quickly as possible, replace the sheet of paper with a new one, turn off and on your printer, and print the page at double-density. This Quick-Reference sheet is useful to have around when you are using Page Pro 99, at least until you get used to the command keys.

With the Example Disk in drive one, we are going to load in another example file - INVOICE. Press CTRL-F to load a file, select Load Page (option #1), and type in the filename:

### **DSK1.INVOICE**

This page is a sample invoice for Asgard Software (note the name and address in the upper right corner of the page). This can be customized with your firm's name very easily by just typing over the name of our company.

However, let's try some of the line drawing commands. Move your cursor to line #6 and column #27 (as indicated by the status line at the bottom of the screen). This should put you at the end of a line for Account Number. Say your business has particularly long account numbers, and you need more space.

First press CTRL-8 (to enter line mode). Please note that the cursor changes (it has a little L in the middle of it), and a list of letters and corresponding line characters appears at the bottom of the screen between the window area and the status line. Pressing the letter on the top gets the line symbol on the bottom. If this seems confusing, refer to the Quick-Reference sheet we just printed out (and to the window-pane affair at the top of it).

You draw lines in Page Pro 99 by typing letters. To extend the Account Number line type the E key, say, three times. Three additional line characters will appear.

Now we are going to do something a little more tricky. Use the arrow keys to move the cursor to line #1 and column #40 (just to the left of the address and company name). Now press CTRL-X. This tells the computer to type down the page. To type to the left, for example, you'd press CTRL-S, and up, CTRL-E. To type normally again, you'd press CTRL-D. Note that a little pointer in the lower right hand corner tells you what direction you are typing at all times.

After pressing CTRL-X, type the F key four times. Notice that 4 vertical line characters will appear. After doing that, press CTRL-D, type the C key, and then type E 20 times (to the end of the line). You will note that when you get to the end of the line it takes you to the beginning of the next.

Press the window-over key (FCTN-5) to look at what you did - you should see a partial box around the name Asgard Software and our address. Even though this is a very basic example, you can draw lines all over the page with these basic keys (and some of the other line characters).

You should be very careful when drawing lines, however, particularly around pictures. Drawing a line through a picture will cause those lines to replace part of the picture and the results may not be desirable. Remember- what you see on the screen is exactly what you will get on your paper.

When you are finished drawing lines, press CTRL-8 again. All of the line- mode stuff on the screen will disappear (and the cursor will go back to being an empty box).

Press FCTN-5 again (to go back to the left hand side of the page), and press FCTN-4 5 times (this is the page-down key - it takes you down one window at a time to the bottom). You should see a picture (or rather, an outline of one) at the lower left-hand corner of the screen.

To look at the picture, press CTRL-O, but otherwise, we are going to move it. When printed out, it doesn't look quite right in the lower left hand corner, so we are going to move it up a line and to the right one column. To do this, first we have to erase it.

Put the cursor somewhere in the picture, and press CTRL-K (for Kill picture). This key is used to delete a picture under the cursor. You can delete all the pictures on the page by pressing CTRL-U - but this can be dangerous so use it sparingly. Answer the next prompt by pressing Y, and then move your cursor to line #60, column #2 (as indicated in the status line).

Now, we are going to load in the picture again. Type CTRL-L to do this (for Load picture). You'll note that the filename of the picture we just killed, DSK1.99/4A seems to be there - Page Pro 99 remembers the filename of the picture that you just deleted, so all you have to do is press ENTER and that picture (which we just deleted) will load starting where the cursor is located. Note that all pictures take the cursor location as the upper left- hand corner of the picture - so if you load the picture too close to the right hand side of a page it may be cut off.

After moving the picture, print out the invoice to see what it looks like (by pressing CTRL-P and following the prompts).

There! At this point you should be familiar with all of the basic techniques of Page Pro 99 - how to create a document with pictures, how to load in new fonts, how to delete pictures, type with the line font, load in pages (and in the same manner, save them), and print pages.

On your own you may want to experiment with typing in large fonts (simply press CTRL-9 and start typing), and placing multiple pictures on the page. The following pictures are supplied in Page Pro 99 format on the Example Disk:

99/4A  
INDIAN  
PENGUIN  
WINEGLSS  
WNE&GRPS

CANDLE  
LOGO  
PRINTER  
WIZARD  
WREATH

Other pictures can be converted into Page Pro 99 format from TI-Artist format with the Convert Pictures utility (see the Utilities documentation for more information).

For an example of multiple picture use in a page you may want to look at the example page INVITATION or GREETING1. You'll note that you can use the same picture more than once on a page - however you are still limited to 28 individual pictures on the same page, even if they are all the same picture you can only have 28 of them on the page at once.

For an example of large fonts, small fonts, lines and pictures all in the same example, you may want to look at the example page AD. Of course, since you bought the program the ad is a little late, but it illustrates what can be done with Page Pro 99 and a little typing.

## Warmup Exercises

Now that you've read (and possibly re-read) the above tutorial, as well as followed it in the program, you may want to practice what you've learned in order to get the feel of the program.

To learn more about using the line font, make a map on the screen out of line characters - perhaps from your work or school to home.

To get the hang of large fonts, try making an announcement for a party. Try decorating it with some of the line characters (perhaps putting a border around it) Try making a border around a full-page flyer with small pictures converted with the Convert Pictures utility.

# Advanced Techniques

Once you have figured out how the program is used, and actually created a few things for yourself or friends, there are a few tricks you can use to make the program more flexible. These things aren't recommended for the faint of heart, but will let you do more with Page Pro 99.

One limitation of Page Pro 99 which may irritate experienced users is the limits on the number of fonts you can have on a page. This can be particularly irritating if you need a very large title for an ad, or some such.

If you have TI-Artist, however, you can get around this easily. TI-Artist will more or less let you type in any font (including the very large) on a screen. To put odd shaped titling or large titles on a Page Pro 99 page, first create a screen in the TI-Artist enhancements with the text in the font desired (more than one screen if necessary), and save them as instances. Next, load in the Page Pro 99 Convert Pictures utility, and convert the text into a Page Pro 99 picture. Finally, start up Page Pro 99 and load in the text, now saved in picture format, wherever you want on the page. Since Page Pro 99 will let you have up to 28 pictures on a page, you can still have a decent number of pictures on your page, along with a selection of very large or ornate text as titling.

While the Columnizer routine is described in the Utilities documentation, a few more words on using it are in order. This utility is really only recommended for the advanced user who is familiar with TI-Writer.

As mentioned in the instructions, place a blank line in your TI-Writer file to get a blank line in the final columnized text. When you do this to leave space for pictures or titles stored in pictures, remember that each line is 12 pixels high and not the eight of TI-Artist. So, a TI-Artist picture that is 6 blocks high (48 pixels), is only going to occupy 4 lines on a Page Pro 99 page. A rule of thumb is that each 3 blocks high of a picture will take up only 2 lines on a Page Pro 99 page.

However, also remember that large fonts are exactly 2 lines high, so if you are leaving space in your TI-Writer file for a large font title, remember to leave at least 2 lines (and preferably 3) for the title.

Finally, remember that the maximum horizontal space the Columnizer will leave is 30 columns. However, if you plan your text file properly (by typing it in originally at 28 columns wide so that when it is formatted no extra lines are created in the columnized text), you can add blank lines at the proper place to create a page-wide title (as in the beginning of a column). When doing this, remember that the Columnizer puts 62 lines in each column (it leaves 2 blank at the top and the bottom for a margin). So, to leave 3 blank lines open all across the top of the page, leave 3 blank lines at the beginning of the file, type 59 lines of 28 column text, type 3 more blank lines and then the rest of your text.

One more thing that can come in handy - there is a way to manually re-assign pictures to a different disk drive. Remember that when you create a page and load in pictures, Page Pro 99 saves the diskname along with the filename with the page, so that when the page is loaded later it looks for (or several) disk(s) in the drive(s) originally used for pictures when the page was created. This can be a pain if you don't keep track of what disk drives contained the disks with the pictures you used.

The way around this is to simply load in your page. Page Pro 99 will load in the text and respond with an I/O error when the pictures aren't found. Put your picture disks in, and simply go to the upper left hand corner of your picture, delete it (with CTRL-K), and re-load the picture you just killed again in the same spot (the original filename will appear as the default, so all you have to do is change the drive number). The picture will then be loaded from the new drive with the picture. Repeat this process for each picture on the page.

This method is time-consuming, but a way to get out of a potential jam.

## Manufacturers Suggestions

There are a number of things you should do to efficiently and safely use Page Pro 99.

(1) Make a work copy of Page Pro 99 and your example disk before using it. Chances are you will want to modify the examples for your own use, and you don't want to destroy your only copy of the originals. Backing up the program disk is just plain common sense.

(2) Try to use the same disk drive all of the time for your picture disks. This way you won't run into the problem much of loading in a page you worked on a while ago, and the program not being able to find your pictures. One way to avoid this problem entirely is to keep a page, and all the pictures it uses, on the same disk. If you do this, just make one of your disk drives your work drive, and always put the disk with the page you are using in it.

(3) Since Page Pro 99 doesn't save the fonts in a page along with the page, you may want to keep the fonts you intend to use on a given page on the disk containing that page. If you don't have any TI-Artist fonts to convert into Page Pro 99 format, you can kill the 99/4A or 9640 version of Page Pro 99 (named UTIL1/UTIL2 and PAGE1/PAGE2 respectively) depending on which machine you are using (and please, don't kill the 4A version if you have a 99/4A!). This will make enough space on your work copy to put all the fonts we provide on your program disk.

(4) Page Pro 99 is disk-intensive, but this doesn't mean single drive owners are out of luck - with proper planning you can put everything on a given page on a single disk, and since Page Pro 99 is entirely self-contained, you don't need the program disk after it is loaded.

(5) When Page Pro 99 prints out a page, it tries to print even blank lines. If the stuff on your page actually only takes up the top portion of it, you can save yourself a little time by pressing FCTN-4 (Break), after it has printed out your work. The program won't mind at all. If you do this, it is a good idea to turn off and on your printer before trying to print anything else.

(6) Put a write/protect sticker on the program disk.

(7) Finally, if for some reason your original copy of the program disk fails, don't worry, it has a lifetime guarantee. Just return it to us with return postage (after the warranty period is up) and we'll replace it. Returning it to the dealer you bought it from will just mean it will take longer to get it replaced - all they'll do is bundle it up and mail it to us. Also, please note that the lifetime guarantee is voided if anyone but Asgard Software services Page Pro 99.

# Technical Information

This section is intended for the advanced user/programmer. The purpose is to explain the format of the font and picture files used by Page Pro 99 so that you can develop your own utilities if you have the need.

## Line Fonts

Line fonts are stored in memory image files. Each file consists of 384 bytes. These files contain 32 characters consisting of 12 bytes each ( $32 \times 12 = 384$ ). Page Pro 99 uses ASCII values 0-29 for the line characters. ASCII 30 is reserved for picture display and ASCII 31 is the picture icon used to display the picture area when pictures are turned off. The patterns for each character follow the standard TI pattern descriptors with the exception that Page Pro 99 characters are 8 pixels wide by 12 pixels high instead of the "standard" 8 by 8 pixel boundary used by TI, so each character requires 12 bytes to define.

Bytes 0-11 - ASCII 0 Upper case A in line mode

Bytes 12-23 - ASCII 1 Upper case B in line mode

...

Bytes 180-191 - ASCII 16 Lower case A in line mode

...

Bytes 360-371 - ASCII 30 Reserved

Bytes 372-383 - ASCII 31 Picture icon

## Small Text Fonts

Small text fonts are also stored in memory image format. Each file consists of 1140 bytes, representing ASCII values 32-126. This is a total of 95 characters at 12 bytes each ( $95 \times 12 = 1140$ ). The file is organized in the same manner as the line fonts (12 bytes per character on a 8 by 12 pixel boundary).

Bytes 0-11 - ASCII 32 Space

Bytes 12-23 - ASCII 33 Exclamation point

...

Bytes 1128-1139 ASCII 126 Tilde

## Character Usage in Page Pro 99

ASCII 0-29	Line characters
ASCII 30	Reserved
ASCII 31	Picture icon
ASCII 32-126	Small characters
ASCII 127-128	Reserved
ASCII 129	Upper right of large character
ASCII 130	Lower left of large character
ASCII 131	Lower right of large character
ASCII 132-159	Picture flags
ASCII 160-254	Upper left of large character (high bit set for ASCII 32-126)
ASCII 255	Reserved

The above information is provided mainly to give you an idea of what you're looking at if you go poking around in any of the page or text files saved by Page Pro 99.

## Picture Files

Picture files are stored as Internal, Fixed 13 and the size will vary depending on the size of the picture. The first record (record 0) has the size of the picture in columns and rows. Both dimensions are stored as a single byte in the first two bytes of the record. The first byte of the record is the length byte (always 12), the second byte is the number of rows in the picture, and the third byte is the number of columns in the picture. The remaining bytes of record 0 are padded with binary zeros (10 bytes total). When reading picture files, read in record 0 as a string. The ASCII value of byte 1 is the number of rows and the ASCII value of byte 2 is the number of columns. This limits the size of any picture to 255 rows by 255 columns, but that is hardly practical since the largest picture that can fit on a page is 66 rows by 60 columns.

The remaining number of records is always [total rows \* total columns]. Each 12 byte record has the standard TI character pattern descriptor (similar to the format of the line and text fonts). It is easiest to illustrate the organization of the records by using an example:

Record 0 -  
ASCII(12), ASCII(2), ASCII(3), ASCII(0), ..., ASCII(0)  
length # rows # coll binary zeros (10 total)

Record 1 - Pattern descriptor for Row 1, Col 1  
(length + 12 bytes)

Record 2 - Pattern descriptor for Row 1, Col 2

Record 3 - Pattern descriptor for Row 1, Col 3

Record 4 - Pattern descriptor for Row 2, Col 1

Record 5 - Pattern descriptor for Row 2, Col 2

Record 6 - Pattern descriptor for Row 2, Col 3  
(this is the last record)

This example shows that record 0 holds the picture size information and records [1 thru # columns] has the information for row 1 of the picture, records [# columns+1 thru # columns\*2] has the information for row 2 of the picture and so on to the end of the file.

Again, this information is intended for the advanced user. Asgard Software can not be held responsible for any problems arising from the use or mis-use of this information. If you have any specific questions relating to this technical information, we will do our best to answer them. Just send your question and a self-addressed, stamped envelope to the address listed in the Disclaimer. We will respond as quickly as possible.

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