

GRAPHIC TITLER

**PROGRAM AND MANUAL CONTENTS
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TITLE DESCRIPTION COMMAND SUMMARY

NEW SCREEN COMMANDS

- .L - Large
- .M - Medium
- .S - Small
- .V - Very small

TEXT SCALE FACTOR COMMANDS

- .TSIZE s - Set text size to s (s=0,1,2)
- .HSIZE s - Set text horizontal size to s (s=0,1,2)
- .VSIZE s - Set text vertical size to s (s=0,1,2)

BRIGHTNESS CONTROL COMMANDS

- .LT n - Lighten the letters n units
- .DK n - Darken the letters n units
- .B LT n - Lighten the background n units
- .B DK n - Darken the background n units

BACKGROUND COLOR COMMANDS (See text)

TEXT COLOR COMMANDS (See text)

HORIZONTAL SCROLLING COMMANDS

- .HSCROLL n - Scroll the following text horizontally n times
- .LMAR n - Set the left margin to character position n
- .RMAR n - Set the right margin to character position n
- .CLRMAR - Restore the margins to their original values
- .VPOS n - Start the text n character positions from the top

ADDITIONAL COMMANDS

- .VSCROLL - Scroll the following text vertically
- .PAUSE n - Wait n seconds
- .BLANK - Print a blank line
- .SONG - Play a song (C1-C4)

PAINTING COMMAND SUMMARY

P - Print text
T r - Set text size to r (r=0,1,2)
H r - Set text horizontal scale to r (r=0,1,2)
V r - Set text vertical size to r (r=0,1,2)
S r - Draw a square of radius r
SF r - Draw a filled square of radius r
C r - Draw a circle of radius r
CF r - Draw a filled circle of radius r
D - Dot - Start a polygon
L - Line - Draw a line from the last dot or line
F - Fill a polygon
R - Replicate a polygon

TITLE EDITING COMMAND SUMMARY

NEW - Begin a new title description
LIST - List the entire title description
LIST n - List only line n of the title description
LIST n,m - List lines n through m of the title description
LIST "P" - Print the entire title description on the line printer
REN - Renumber the entire title description
AUTO n - Begin automatically numbering lines starting at n

GRAPHIC TITLER USERS MANUAL

OVERVIEW

The GRAPHIC TITLER is used to create a wide variety of screen displays and sounds. These displays can incorporate various size text and multicolored high resolution graphics screens. The display sequences can be used as a title generator for home video movies or as a message display board to sell or demonstrate a product. Individual displays can be photographed for use in slide presentations. The display sequences can be made to repeat making them useful for teaching or entertaining young children.

Commands are provided to make it easy and fun to paint your own high resolution graphics screens. These screens can be saved, changed and incorporated into display sequences.

Graphics screens and titles that scroll horizontally or vertically can be incorporated into your own BASIC programs.

Detailed step by step instructions and many ready to run examples included on the program diskette make GRAPHIC TITLER easy to use.

MINIMUM RAM AND ACCESSORIES

REQUIRED ACCESSORIES

- ATARI BASIC Language Cartridge
- 48K RAM
- ATARI 810 Disk Drive

OPTIONAL ACCESSORIES

- Joy Stick
- Printer
- Video Cassette Recorder
- Adjustable Camera

SPECIAL TERMS

The term "text screen" refers to a screen that provides written instructions to the user. A text screen is always small white letters on a blue background.

The term "graphics screen" refers to a screen that contains pictures as well as letters.

The term "current title" refers to the title description that has been most recently retrieved or entered.

SPECIAL FUNCTION KEYS

The < key (followed by RETURN) alone on a line can be used at any time a text screen is displayed to return to the menu mode. This

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is the best way to get out of trouble if an incorrect response is given.

Hold down the START console key to go onto the next screen when a graphics screen is displayed.

The screen editor cursor control arrows, delete and insert keys can be used when entering or changing a title description.

The user can freely mix upper and lower case letters when using the system.

The RETURN key must be pressed at the end of every line when a text screen is displayed.

RELATED PUBLICATIONS

The GRAPHIC TITLER uses the ATARI 810 disk drive. The user must know how to turn on the drive and insert and remove diskettes. To save a title description of a screen the user must know how to format a diskette. Users unfamiliar with the disk drive should consult their manual "An introduction to the Disk Operating System" for the required information.

GETTING STARTED

1. Be sure the ATARI BASIC language cartridge is installed in the left cartridge slot of your computer console.
2. Turn on your TV set
3. Turn off both the computer console and disk drive number 1 if either are on.
4. Turn the disk drive on. When the BUSY light goes off, open the door to the disk drive and insert the GRAPHIC TITLER program diskette. Close the door.
5. Turn on the computer console. The program will begin to load. After 10 seconds a screen will appear that says:

```

+-----+
|  LOADING...  |
|  GRAPHIC TITLER  |
|  PLEASE STAND BY!  |
|  COPYRIGHT 1983  |
+-----+
```

Thirty seconds later the words "GRAPHIC TITLER" will appear

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on a three color picture of a movie theater. This is the GRAPHIC TITLER logo.

6. Hold down the START console key until the following menu is displayed:

```
-----
|                                     |
|                               MENU MODE                               |
|                                     |
| SELECT ONE OF THE FOLLOWING OPTIONS: |
|                                     |
| E - ENTER OR CHANGE A TITLE      |
|                                     |
| S - SAVE THE CURRENT TITLE        |
|                                     |
| D - DISPLAY THE CURRENT TITLE     |
|                                     |
| R - RETRIEVE A SAVED TITLE        |
|                                     |
| L - LIST THE SAVED TITLE OR SCREEN |
|                                     |
| X - DELETE A SAVED TITLE OR SCREEN |
|                                     |
| C - COPY A TITLE OR SCREEN        |
|                                     |
| P - PAINT A SCREEN                |
|                                     |
| WHICH OPTION DO YOU SELECT?      |
|                                     |
|-----|
```

To see a demonstration of GRAPHIC TITLER's capabilities select menu option r (followed by pressing the RETURN key). This will place GRAPHIC TITLER into RETRIEVE MODE and the system will ask:

ENTER THE NAME OF THE TITLE?

Type demo (followed by pressing the RETURN key). The system will respond:

TITLE DEMO RETRIEVED

READY TO GO ON?

Type y (followed by pressing the RETURN key). This will put the screen back into MENU MODE. Select option d (followed by pressing the RETURN key) and a demonstration of the capabilities of GRAPHIC TITLER will begin. Be sure to adjust the volume of your TV set during the music portion of the demonstration. The demonstration can be stopped at any time by holding down the START console key.

To create your own title, select menu option e (followed by pressing the RETURN key). If the system responds with

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CURRENT TITLE READY TO LIST OR CHANGE

then type new (followed by pressing the RETURN key). The system will then respond with:

ENTER NEW TITLE. END WITH RETURN.

Type the following, ending each line by pressing RETURN.

```
10 .m
20 Easy
30 Does it!
40
```

Now press RETURN again to get to MENU MODE, and select option d to display your newly created title. Hold down the START console key to return to MENU MODE.

COMMANDS

MENU MODE COMMANDS

E - ENTER OR CHANGE A TITLE

This menu mode is used to create or change a title description. The actual commands that are allowed in a title description are explained in the section called "TITLE DESCRIPTION COMMANDS". A title description is entered or changed much like a BASIC program, yet no programming experience is needed to write your own title descriptions. Line numbers are used to refer to each line and to maintain lines in the desired order. The cursor control keys can be used to edit an individual line. A line can be deleted by typing its line number alone.

The title description editing commands are as follows: (Use actual line numbers in place of the letters n and m)

NEW - Begin a new title description.
LIST - List the entire title description.
LIST n - List only line n of the title description.
LIST n,m - List lines n through m of the title description.
LIST "P" - Print the entire title description on the line printer.
LIST "P",n,m - Print lines n through m on the line printer.
REN - Renumber the entire title description.
AUTO n - Begin automatically numbering lines starting at n.

When ENTRY MODE is selected, a current title may or may not exist. If a current title does exist, then the line:

CURRENT TITLE READY TO LIST OR CHANGE

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appears. The "list" command can be used to list the current title, or a new line (preceded by the line number and exactly one blank) can be added. If you want to enter a new title description, then use the "new" command. The system responds with:

ENTER NEW TITLE. END WITH RETURN

and line numbers are generated automatically. Automatic line numbering can be stopped by pressing RETURN alone on a line. It can be restarted by using the "auto" command.

To understand line numbering type the following example while in ENTRY MODE. (End each line by pressing the RETURN key)

```
new
10 .s
20 Second
30
15 First
```

list

```
10 .s
15 First
20 Second
```

```
ren
list
```

```
10 .s
20 First
30 Second
```

```
20
list
```

```
10 .s
30 Second
```

```
30 Only
list
```

```
10 .s
30 Only
```

Press the RETURN key to return to MENU MODE.

S - SAVE THE CURRENT TITLE

This menu option copies the current title onto the diskette so it can be saved and retrieved at a later time. Be sure a formatted, non-writeprotected diskette is inserted in the disk drive before

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using this option. Simply answer the question by supplying a name (no longer than 8 characters long) and pressing the RETURN key. The disk drive will start up and a few seconds later the system will state that the title has been saved. When you are ready to return to the menu, type γ followed by pressing RETURN.

D - DISPLAY THE CURRENT TITLE

This menu option "runs" the current title description. Hold down the START console key to return to MENU MODE.

R - RETRIEVE A SAVED TITLE

This menu option retrieves a title description that was previously saved (using the "s" menu option) on diskette. The retrieved title description becomes the current title description. Answer the question by supplying the same name as was used to save this title description. After pressing the RETURN key, the disk drive will start up and a few seconds later the system will state that the title has been retrieved. When you are ready to return to MENU MODE, type γ followed by RETURN.

If you forget the exact spelling of the title description you want to retrieve, use the "L" menu option described below.

L - LIST THE SAVED TITLES AND SCREENS

This menu option lists the names of the title descriptions saved on this diskette. It then lists the names of the screens saved on this diskette. Finally it shows how full this diskette is. When using the "R" menu option, the name given must be spelled EXACTLY as it appears in the list of titles. Similarly, when painting a screen, the name of an old screen must be spelled exactly as it appears in the list of screens. Type γ followed by RETURN to get back to MENU MODE.

X - DELETE A SAVED TITLE OR SCREEN

This menu option is used to erase a previously saved title or screen painting. To delete a title answer the first question by typing T. To delete a screen, type S. Then enter the name of the title or screen to be deleted. The disk will start up and after a few seconds the system will state that the deletion has completed. Be careful using this option. Once a title or screen has been deleted, it can never be retrieved again.

C - COPY A TITLE OR SCREEN

This menu option is used to make a copy of a title description or screen already saved on disk. This is useful if you are going to change the title description or screen, but want to keep a separate copy just in case of a problem. If you wish to copy a title description, answer the first question by typing T. If you wish to

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copy a screen, then type S. The name to copy from is the name as it appears when using the "L" menu option. The name to copy to is the new name to be given to the copy to be created. A short title description can be copied in a few seconds. A high resolution screen requires more than 4 minutes to copy, and a very high resolution screen takes about 9 minutes to copy.

P - PAINT A SCREEN

This menu option allows you to create your own high resolution graphics screens. This is how the GRAPHIC TITLER logo was created. You can also save the screens and edit previously created screens. Work through the following example to see how this powerful feature is used. Be sure a formatted, non-writeprotected diskette is inserted into disk drive number 1 before painting a screen. Select menu option p. Type myown (followed by pressing RETURN) in answer to the first question to name the screen "myown". Since this is a new screen type n followed by RETURN in answer to the next question. Just for practice select a low resolution screen by typing L followed by RETURN. Now hold down the START console key.

Press the SELECT console key and you will notice that the colors of BRUSH 1 change. Hold down the SELECT key until the desired color appears. Now use the joy stick controller (plugged into controller jack number 1, on the far left) to adjust the brightness. Pushing the joy stick forward increases the brightness. Pulling the joy stick backwards makes the color darker. When you are satisfied with BRUSH 1, press the OPTION key to highlight BRUSH 2. If you hold down the OPTION key too long and skip over BRUSH 2, just press it again until it goes around again. Use the SELECT key, joy stick and OPTION console key to select the desired colors for BRUSH 2 BRUSH 3 and the background. Now press START and the screen will display the background color you have chosen, and a square the color of BRUSH 1 will appear in the middle of the screen. (If BRUSH 1 is the same color and brightness as the background, you will not be able to see it.) The joy stick controller can now be used to draw with this square in any direction. Pressing the trigger on the joy stick makes the square blink and selects the background color. This can be used to move rapidly to a new place on the screen, or to erase a line. Pressing the OPTION key selects BRUSH 2, pressing it again selects BRUSH 3.

" START " to SAVE

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Commands can be used to make it easier to paint a screen. The commands are as follows. (Use an actual number for r in each case)

P - Print text
T r - Set text size to r ($r=0, 1, 2$)
H r - Set text horizontal size to r ($r=0, 1, 2$)
V r - Set text vertical size to r ($r=0, 1, 2$)
S r - Draw a square of radius r
SF r - Draw a square of radius r and fill it in
C r - Draw a circle of radius r
CF r - Draw a circle of radius r and fill it in
D - Dot - Start a polygon
L - Line - Draw a line from the last dot or line
F - Fill a polygon
R - Replicate a polygon

Try some of these as follows. Select BRUSH 1 and move the square (cursor) to the upper left hand corner of the screen. Press P then type HELLO followed by RETURN. Now press P, hold down the Joy stick trigger button and again type HELLO followed by RETURN. Now type T1 followed by RETURN. Press P followed by HELLO followed by RETURN. Try V0, H2 or T0 followed by P HELLO RETURN next. Now move the cursor to the middle of the screen and type S 5 followed by RETURN. A square is drawn 5 units from the cursor all around. Now type SF 5 followed by RETURN. The same square is drawn and filled in. Press the OPTION key to select BRUSH 2. Type C 7 followed by RETURN. A circle is drawn. Now type CF 7 followed by RETURN to fill in the circle. Press the trigger on the Joy stick and type CF 7 followed by RETURN to erase the circle.

Type D and then press the trigger and move the cursor to some other part of the screen. Type L and a line will be drawn from the old to the new cursor location. Continue to move the cursor and type L until you return to the original location of the dot. Now type F to fill in the shape. Move the cursor to some new part of the screen and type R followed by RETURN to replicate the polygon in some new part of the screen. When you are satisfied with your masterpiece (or you get tired or hungry) then hold down the START console key to save the screen on diskette.

To edit the screen, again select menu option P and name the screen myown. This time, retrieve the old screen by typing 0 in response to the next question. Since you do want to edit the screen, answer the next question by typing y. If you want to change the colors selected for each brush, then answer the next question y, otherwise answer n. Your screen will be retrieved and the cursor (the color of BRUSH 1) will again be in the middle of the screen.

Happy painting! Try a high resolution or very high resolution picture next! To plan your storage space requirements you should know that a low resolution screen requires less than 1% of the total

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diskette space when it is stored. A medium resolution screen requires 1.4%, a high resolution screen requires almost 5% and a very high resolution screen requires 9%. It is a good idea to use the "L" menu option to be sure enough diskette space is available to store a screen before starting to paint it.

TITLE DESCRIPTION COMMANDS

This section describes each of the commands that can be used to make up a title description. Each of these commands is used in the title description "demo" that was run as part of getting started. In addition a series of short demonstration title descriptions are supplied on the program diskette to illustrate the use of most of these commands.

Title description commands all begin with a dot (.) to distinguish them from text to be displayed.

TEXT SIZE AND NEW SCREEN COMMANDS

One of these four commands must be the first command used for each screen in the title description. The commands are as follows:

- .L - Use large letters
- .M - Use medium sized letters
- .S - Use small sized letters
- .V - Use very small sized letters

The number of rows and columns of text characters that will fit on the screen using each of these commands is given by the following table: (Assuming a scale factor of zero is used, see the next section for information on scale factors).

	LINES	LETTERS
.L - Large	3	5
.M - Medium	6	10
.S - Small	12	20
.V - Very small	24	20

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The title specification "LOVE" (listed below and supplied on the program diskette) is a good illustration of the use of these commands:

```
10 .v
20 I ♥
30 G T
40 .s
50 I ♥
60 G T
70 .m
80 I ♥
90 G T
100 .l
110 I ♥
120 G T
130 .m
140 I
150 G T
160 .s
170 I ♥
180 G T
190 .goto 10
```

TEXT SCALE FACTOR COMMANDS

Text of up to nine different sizes and shapes can be combined on a single screen by using the text scale factor commands. The commands are as follows:

```
.TSIZE s - Set text size to s (s=0,1,2)
.HSIZE s - Set text horizontal size to s (s=0,1,2)
.VSIZE s - Set text vertical size to s (s=0,1,2)
```

In each case, s=0 is the smallest size available in the current screen mode, s=1 is twice as big, and s=2 is four times as big. The title specification "SIZES" (listed below and supplied on the program diskette) is a good illustration of the use of these commands:

```
10 .v
20 .vsize 1
30 TALL LETTERS
40 .vsize 2
50 TOO TALL LETTERS
60 .tsize 0
70 .hszize 1
80 FAT OR
90 .hszize 2
100 TOO
110 FAT
120 .tsize 0
130 letters can be used
```

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BRIGHTNESS CONTROL COMMANDS

These commands control the brightness of the colors used in the background and text of a screen. The commands are as follows: In each case the letter n must be assigned a number from 0 to 4.

- .LT n - Lighten the letters n units
- .DK n - Darken the letters n units
- .B LT n - Lighten the background n units
- .B DK n - Darken the background n units

The commands .B LT and .B DK lighten or darken the background the specified number of units. Their use is illustrated in the title specification "FLASH" (listed below and supplied on the program diskette):

```
10 .L
20 .B DK 4
30 FLASH
40 .B DK 3
50 .B DK 2
60 .B DK 1
70 .B DK 0
80 .B LT 1
90 .B LT 2
100 .B LT 3
110 .B LT 4
120 .GOTO 10
```

The commands .LT and .DK lighten or darken the next text encountered. Their use is illustrated in the title specification "RED" (listed below and supplied on the program diskette):

```
10 .L
20 .b lt 4
30 .dk 4
40 .red
50 RED
60 .dk 0
70 .red
80 RED
90 .lt 4
100 .red
110 RED
```

BACKGROUND COLOR COMMANDS

These commands set the background to the specified color. The commands are as follows:

- .B GRAY - Set background color to gray
- .B GOLD - Set background color to gold

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- .B ORANGE - Set background color to orange
- .B RED - Set background color to red
- .B PINK - Set background color to pink
- .B PURPLE - Set background color to purple
- .B NAVY - Set background color to navy
- .B BLUE - Set background color to blue
- .B LTBLUE - Set background color to light blue
- .B AQUA - Set background color to aqua
- .B GB - Set background color to green-blue
- .B GREEN - Set background color to green
- .B YG - Set background color to yellow-green
- .B OG - Set background color to orange-green
- .B LTORNG - Set background color to light orange

TEXT COLOR COMMANDS

These commands set the text to the specified color. The commands are as follows:

- .GRAY - Set text color to gray
- .GOLD - Set text color to gold
- .ORANGE - Set text color to orange
- .RED - Set text color to red
- .PINK - Set text color to pink
- .PURPLE - Set text color to purple
- .NAVY - Set text color to navy
- .BLUE - Set text color to blue
- .LTBLUE - Set text color to light blue
- .AQUA - Set text color to aqua
- .GB - Set text color to green-blue
- .GREEN - Set text color to green
- .YG - Set text color to yellow-green
- .OG - Set text color to orange-green
- .LTORNG - Set text color to light orange

These commands set the next text encountered to the specified color. If a brightness command (.LT or .DK) is being used, the brightness command must come before the text color command. See the title description "RED" (listed in a previous section) and "THREE" (listed below and supplied on the program diskette) for examples of the command usage.

```
10 .1
20 .red
30 ONE
40 .navy
50 TWO
60 .green
70 THREE
```

HORIZONTAL SCROLLING COMMANDS

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These commands can be used together to make text scroll across the screen like a ticker tape message. The commands are as follows:

- .HSCROLL n - Scroll the following text horizontally n times
- .LMAR n - Set the left margin to character position n
- .RMAR n - Set the right margin to character position n
- .CLRMAR - Restore the margins to their original values
- .VPOS n - Start the text n character positions from the top

The title description "TICKER" (listed below and supplied on the program diskette) is an example of the use of these commands:

```
10 .s
20 .lmar 3
30 .rmar 17
40 .vpos 5
50 .hscroll 2
60 The stock market rose sharply
```

ADDITIONAL TITLE DESCRIPTION COMMANDS

.VSCROLL - Scroll the following text vertically

.PAUSE n - Wait n seconds

.BLANK - Print a blank line

.GOTO n - Go to line number n in the title description. The title description "LOVE" (shown in a previous section) is an example of the use of this command.

.PICT name - Display the screen named "name". Be sure that "name" is the name of a saved screen. You can use the menu option "L" to find the names of all the saved screens. Be sure to precede this command with a .s command. The title description "SHAPES" (listed below and provided on the program diskette) uses this command in a way suitable for instructing young children.

```
10 .s
20 .pict square
30 .pause 2
40 .s
50 .pict circles
60 .pause 2
70 .pict triangle
80 .pause 2
90 .goto 10
```

MAKING MUSIC

The command .SONG can be used to play music along with your

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titles. The notes that can be used must be selected from the following table:

C4
B3
A3
G3
F3
E3
D3
C3 - High "C"
B2
A2
G2
F2
E2
D2
C2 - Middle "C"
B1
A1
G1
F1
E1
D1
C1 - Low "C"

Notes and rests are listed as part of the ".SONG" command. Each note from the above table is played as a quarter note. Each space between notes is played as a quarter rest. Two of the same notes in a row, without any spaces between are played as a single half note. Similarly, two spaces in a row are played as a half rest. Sharps and flats are not available. Some examples follow:

.SONG C2

plays middle "C" as a single quarter note

.SONG C2C2

plays middle "C" as a half note

.SONG C2 C2

plays middle "C" as two quarter notes separated by a quarter rest. The title description "SCALES" (listed below and provided on the program diskette) is an example of the use of this command:

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```
10 .m
20 Low
30 Notes
40 .song c1 d1 e1 f1 g1 a1 b1 c2
50 .m
60 Middle
70 Notes
80 .song c2 d2 e2 f2 g2 a2 b2 c3
90 .m
100 High
110 Notes
120 .song c3 d3 e3 f3 g3 a3 b3 c4
130 .m
140 Rhythm
150 .song c2c2 c2 c2 c2c2 c2 c2
160 .song d2d2 d2 d2 d2d2 d2 d2
```

CONNECTING UP A VIDEO CASSETTE RECORDER

If you would like to make a permanent copy of the display of one of your title descriptions, then a Video Cassette Recorder (VCR) will have to be connected to the computer console. This is how GRAPHIC TITLER can be used to supplement your own home video movies. Two techniques can be used to do this. One is called the "RF connection" the other is called the "Monitor connection". Both are described below:

RF CONNECTION

Disconnect the "TV" output of the computer switch box from your TV set and connect it to the VHF antenna input of your VCR. Take the RF output from your VCR and connect it to your TV set where the switch box was just disconnected from.

MONITOR CONNECTION (ATARI 800 USERS ONLY)

Purchase a 5 pin "DIN" type plug and a shielded two wire cable with an RCA plug at either end. Cut the cable in half and strip the cut end of both pieces of cable. Label one as "AUDIO" and the other as "GRAPHIC". Solder the shield of both cables to pin #2 of the DIN plug. Solder the inner wire of the cable labeled "AUDIO" to pin #3 of the DIN plug. Solder the inner wire of the cable labeled "GRAPHIC" to pin #4 of the DIN plug. Now insert the DIN plug into the "monitor" jack in the side of the computer console. Plug the "AUDIO" cable into the "audio in" jack on the VCR. Plug the "GRAPHIC" cable into the "video in" jack of the VCR. You are now ready to record.

PHOTOGRAPHING A GRAPHIC TITLER DISPLAY

Photographs or slides for a group presentation can be made using GRAPHIC TITLER. Secure an adjustable camera to a tripod and focus on

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the TV screen. Set the shutter speed of the camera to 1/30 second or slower. Turn off the lights in the room. Now photograph each screen as it is displayed by GRAPHIC TITLER.

INCORPORATING TITLES AND SCREENS IN YOUR OWN BASIC PROGRAMS

INCORPORATING A SCREEN

The program called "GSCREEN", written in BASIC and supplied in SAVE format on the program diskette is an example of a user written program that incorporates a screen. LOAD "D:GSCREEN" into memory, then ENTER "D:GSCREEN.LST" and run the combined program. The comments in the program GSCREEN should make it clear how to write your own program. To incorporate a screen named "XYZ", set NAME\$="D.XYZ.SCN" in your program.

INCORPORATING A HORIZONTALLY SCROLLING TITLE

The program "GHSCROLL", written in BASIC and supplied in SAVE format on the program diskette is an example of a user written program that incorporates a horizontally scrolling title. LOAD "D:GHSCROLL" into memory then

```
ENTER "D:GINIT.LST"  
ENTER "D:GHSCROLL.LST"
```

and run the combined program. Most of the comments in GHSCROLL should be clear. The allowed values for some of the variables used in this program and the one explained in the next section are as follows:

	GM	GRC	GMR
:Large	3	10	3
:medium	5	20	6
:small	7	40	12
:Very small	8	40	24

The other variables correspond to the title description commands as follows:

```
LMAR - .LMAR  
RMAR - .RMAR  
VPOS - .VPOS  
VSCALE - .VSIZE  
HSCALE - .HSIZE
```

The BASIC commands COLOR and SETCOLOR can be used freely to specify the color of the text and background.

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INCORPORATING A VERTICALLY SCROLLING TITLE

The program "GVSCROLL", written in BASIC and supplied in SAVE format on the program diskette is an example of a user written program that incorporates a vertically scrolling title. LOAD "D:GVSCROLL" into memory then:

```
ENTER "D:GINIT.LST"  
ENTER "D:GVSCROLL.LST"
```

and run the combined program. Most of the comments in GVSCROLL should be clear. The variables are as defined in the previous section. The character "\" is used to start each new line of text.

TROUBLESHOOTING

ERROR MESSAGES

The system is designed to check for typical procedural errors and advise the user on how to correct the problem. Below are listed the possible error messages and an explanation of each.

*** ERROR TURN ON THE LINE PRINTER

The user requested printed output, but the line printer was either not turned on, not properly attached to the system or not functioning properly. The user should fix the problem, then answer "Y" to go on. If the problem cannot be fixed, responding with < will return the system to the MENU MODE.

ERROR LINE xxx TOO LONG

The text line xxx is too long to fit on the screen. Refer to the table in the section called "TEXT SIZE AND NEW SCREEN COMMANDS" for the allowed maximum line length. If the screen goes blank after displaying this message then hold down the START console key.

COMMAND .xxx IS ILLEGAL

The title description command .xxx is not a valid command. Refer to the "TITLE DESCRIPTION COMMANDS" section of this manual for the allowed commands. If the screen goes blank after displaying this command, hold down the START console key.

*** ERROR USE A NUMBER ONLY

The user typed some character other than 0-9 in response to a question or as part of a command that expected a number. Answer y to go on then supply the requested number.

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*** ERROR DISKETTE IS FULL

The current diskette is full and the new title description or screen cannot be saved. Respond with the < key. If you can insert a new formatted disk with more free space on it, then the title description can be saved on this new diskette. If you were trying to save a screen, it is lost. Use the menu option "L" to check diskette usage before trying to save to diskette to prevent this problem from happening.

*** ERROR FILE IS WRITE PROTECTED, REMOVE TAB

The diskette currently in disk drive 1 has the write enable notch covered. This could be caused by having a write protect tab on your diskette, or by having the original program diskette, or some other write protected diskette in drive number 1 while trying to save a title description or screen. Insert a formatted, non-write protected diskette into drive number 1, then answer y to go on.

*** ERROR UNRECOVERABLE I/O ERROR

This error is probably due to a physically damaged diskette. Try another diskette. Make backup copies of your diskettes periodically to minimize the impact of such an error.

*** ERROR A NEEDED FILE WAS NOT FOUND ON THIS DISKETTE

This is probably due to misspelling a title description name while using menu option "R" or by misspelling a screen name when using menu option "P". Type y to go on, then supply the correct name. If you have forgotten the correct name, return to MENU MODE (by typing <) and select menu option "L".

*** ERROR ERNUM n ERLINE m

Some unexpected procedural or program error occurred. Please send information about such an occurrence to the author.

OTHER PROBLEMS AND THEIR SOLUTIONS

Be sure to wait for a question mark before answering a question on a text screen. Characters typed too soon may be lost. Always end a line by pressing the RETURN key.

You can usually recover from a wrong answer by using the < key (followed by RETURN) alone on a line when a text screen is being displayed.

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If the screen ever goes blank, except for the word READY, then type RUN followed by pressing RETURN.

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