TRSDRAWX/DOC

TRSDRAW Version 2.1 Documentation
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TRSDRAW is a powerful, full-screen graphics editing package for the TRS-80 Model 4 with the Radio Shack High-Res Graphics board. This program will not run on other graphic boards (such as Micro-Labs). Version 2.1 needs a total of 6 programs to operate. They are:

TRSDRW.BIN - This is the TRSDRAW program. It is a BASIC program stored in Compressed format (not ASCII), therefore the .BIN extension. Rename this file to TRSDRAW/BAS.

FGDUMP.BIN - This dumps the graphics screen to a BANK, and is required for use of the "Whoops" feature. 128K is required. Rename this file to FGDUMP/CMD.

FGRSTR.BIN - This is the compliment of FGDUMP.BIN, and requires 128K. Rename this file to FGRSTR/CMD.

TRSLD.BIN - This allows TRSDRAW to load /HRG files to be edited. The GLOAD command cannot be used because of the way TRSDRAW operates. Rename this file to TRSLOAD/CMD.

TRSSV.BIN - This allows TRSDRAW to save /HRG files. GSAVE cannot be used. Rename this file to TRSSAVE/CMD.

TRSOV.BIN - This allows TRSDRAW to "overlay" a /HRG file onto the current screen, without erasing what is on the current screen. Rename this file to TRSOVLY/CMD.

Future versions of TRSDRAW may need more, or fewer separate files. Please make sure that you have the proper documentation for the version of TRSDRAW you are using. If you do not wish to use the features that require these files, you do not need to get them. For instance, if you have only 64K, you shouldn't bother getting FGDUMP.BIN or FGRSTR.BIN. TRSDRAW will test for the presence of the files on disk, and will not "crash" if they are not there.

To run TRSDRAW from TRSDOS Ready, enter "BASICG TRSDRAW/BAS" and press <enter>. After BASICG loads, TRSDRAW will display its heading (including version number), and initialize itself. The initialization process takes about 15 seconds. During this time, you will receive information about the buffers you have available for the "Whoops" command, and will be asked if you wish to clear the buffers. If you have not used TRSDRAW prior to this, and have not "Saved" a screen in one of these buffers, answer "Yes". You will then be in the Editing mode.

Note that TRSDRAW needs a lot of memory to operate. You should have a minimum of FILTERS and such stored in High Memory. Use the MEMORY command to see the current setting of HIGH$. HIGH$ should be ABOVE x'F500' for TRSDRAW to operate properly. To be safest, try to keep HIGH$ above x'FB00'.

HELP
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A menu of available commands is available at anytime you are in the "command" mode by pressing <H>. The menu displays all of the "Commands" available in the top portion of the menu (notice that many keys are reserved for future use). All of the Immedeate Actions are in the bottom part of the menu. The "Commands" may only be pressed in the "Command Mode" -- when you see a single blinking diamond on the screen. The "Immdedate Actions" can be pressed at ANY time, and they will take effect. If you have any doubt as to which mode you are in, press the <shift><clear> keys together. This will ALWAYS get you back to the command mode.

From this menu, you may either select a command by pressing the proper key, or may return to the editing screen by pressing either <H> again, or just pressing <Enter>.

CURSOR MOVEMENT

The arrow keys move the cursor (the blinking diamond) around the screen in the direction indicated. The number keys (use the keypad) move the cursor as well, allowing movement diagonally (the 8 key is "UP", the 1 key is "down and to the left", etc). Use which ever method is more convenient. Note that the Shifted Arrow keys will move the cursor to the margin in the indicated direction.

Pressing the <Space> bar toggles the status of the PEN. When the pen is "UP", you can move the cursor around the screen without distroying anything underneath the cursor. When the pen is "DOWN", the cursor will leave a "trail" in the current color (black or white). In this way, you can draw "free-hand" on the screen. Pressing <shift><Clear> will always LIFT the pen.

To change the speed, or step rate, of the cursor, press the shifted number keys. For instance, <Shift><8> will set a step size of 8 dots. This allows step sizes ranging from 1 to 9. If you want a step size of 10, press the <0> key, without the <shift> (<shift><0> is the command for CAPS lock). By pressing the <;> key, you can double the current step size, allowing step sizes of up to 20. Pressing <-> returns the step size to normal. There are 2 special keys: <F1> will set a single step size (just as <shift><1>) to allow for aligning things, and <F2> will set a step size of 20 (just as <0> followed by <;>), to quickly move across the screen. These keys are for convenience only, and are no different from the other ways of getting these step sizes.

The <F3> command will toggle between the "Double X" mode and the "Single X" mode. When in the Double X mode, the movement of the cursor in the X direction (left to right) is TWICE the movement of the cursor in the Y direction (up and down). The reason for this is because each dot on the screen is twice as HIGH as it is WIDE. With the Double X mode selected, moving diagonally (using the keypad to move the cursor) will move equal distances in both the X and Y directions. If the Single X mode is selected (the default), the distance the cursor travels in the X direction will be half what it travels in the Y direction.

REMEMBERING POINTS

It is possible to tell TRSDRAW to "remember" certain points, or positions on the screen. TRSDRAW can remember up to 26 different points, labled <A> through <Z>. Pressing the <,> key followed by a "name" of <A>-<Z>, will remember the current location of the cursor. Pressing the <.> key, followed by a name of <A> to <Z> will cause the cursor to return to that point. This gives you quick and accurate movement about the screen. If you press <.><name>, and no point has been stored under that name, nothing will happen. Several of the keys have been pre-defined:

<.><T> - moves the cursor to the <T>op center of the screen.
<.><B> - moves the cursor to the <B>ottom center.
<.><R> - moves the cursor to the center of the <R>ight side of the screen.
<.><L> - moves the cursor to the center of the <L>eft side.
<.><N> - moves to the center of the upper-left quarter of the screen. ("north")
<.><S> - moves to the center of the lower-left quarter of the screen. ("south")
<.><E> - moves to the center of the upper-right quarter of the screen. ("east")
<.><W> - moves to the center of teh lower-right quarter of the screen. ("west")
<.><C> - moves to the <C>enter of the screen.

Note that ANY key will be accepted, not just <A>-<Z>. However, the key you press is translated into a number between 1 and 26, so several keys may "hash" to the same key. In other words, unless you are sure of what you are doing, stay with the keys <A> to <Z>.
Also note that with the pen down, a line will be drawn between the old cursor
location, and the new one just "returned" to. If you do not want lines drawn around the screen in this fashion, make sure the pen is up when moving about the screen.

COLOR

To change the color you are working in, press the <@> key. This toggles the current color between BLACK and WHITE. The status of the color key affects many things, not just the color you are currently drawing in. For instance, the <N>ew screen command will clear the screen to the color that is OPPOSITE to the current one. If you have BLACK selected as the current color and clear the screen with the <N> command, the screen will be cleared to WHITE. Many other commands operate in this same way.

THE INFORMATION LINE

Pressing </> (or you can think of it as <?>) will display a brief information line at the bottom of the screen. The information displayed includes the current location of the cursor, the current color, whether the PEN is up or down, whether you are in the Double or Single X mode, the current step size, and the current file name you are editing. Pressing </> or <enter> will restore the screen and do nothing, or you may just press any Command or Immediate key to continue editing.

BOXES

Pressing <B> enters the "BOX" mode. A "marker" (an 'X') is placed at the current cursor position, and a set of three "corner" cursors then appear. You can adjust the size of the BOX by moveing the cursors with the cursor movement keys (even "remembering" points). You are actually moving the cursor diagonal to the Mark; TRSDRAW is providing the other two cursors to aid in aligning the sides of the box.

When you have the box as you want it, pressing <enter> will draw the box in the current color, and move the marker the the current cursor location. You may then proceed to make another box. If you press <B> again, instead of enter, the box will be drawn, but the marker will remain where it was. To escape the BOX mode and return to the command mode, press <shift><clear>.

CIRCLES

Pressing <C> will enter the "CIRCLE" mode. The center of the circle will be at the current cursor location, and four cursors will appear, one each at the top, bottom, left and right sides of where the circle will be drawn. You do not have the normal cursor motion keys available to you in this mode. The keys you use to make a circle are:

<up arrow> - make the circle grow larger.
<down arrow> - make the circle smaller.
<left arrow> - shrink in the sides of the circle (skinny ellipse).
<right arrow> - expand the sides of the circle (fat ellipse).
<shift><up arrow> - Return an ellipse to a circle.
<shift><down arrow> - shrink the circle back to the starting size.

You may then press <enter> or <C> to draw the circle. There is no difference between them. You can then move the cursors to draw a new circle, or press <shift><clear> to go back to the command mode. Note that if the center of the circle is at the EDGE of the screen, you may not be able to see the cursors. The circle command functions properly, but the cursors may not be visible.

DISK I/O

Pressing <D> takes you to the Disk Access portion of TRSDRAW. You can select to set the Command Drive (the drive which stores the alternate TRSDRAW modules, like TRSLOAD/CMD), or the Data Drive (the drive which will store the screens you wish to edit). You can also select to SAVE the current screen to disk, Load a new screen from disk, or Overlay the current screen with a screen from disk. If you select Load, Save or Overlay, a directory of all '/HRG' files will appear and you will be promped to enter the filename of the one you wish to load, or a new name for one you wish to save. Pressing <shift><clear> will take you back to the menu if you do not wish to enter a filename.

Note that TRSDRAW will automatically supply the drive number (if a DATA drive is set) and an extention of /HRG. You may over-ride these defaults by simply typing the extension and/or drive number you wish as part of the filename.

TRSDRAW also will automatically supply the last filename successfully used in a load or save if you press <ENTER> with out typing anything. If no previous default has been established, the filename "NONAME/HRG" will be used. If you are SAVING a file, and the filename you give already exists, you will be asked if you wish to REPLACE the file. Type 'Y' to replace the file, 'N' to return qo the directory.

If you are selecting a Command or Data drive, enter the drive number (values 0 through 7 are accepted). If you wish TRSDRAW to search all drives (the default), just press <enter> or <A> for "all".

ERASER

Pressing <E> calls up the eraser. The eraser "erases" in the opposite color to the one that is currently selected. If White is the current color, the eraser will erase with Black, and vice-versa. You can move the eraser around the screen without erasing anything, just like the "regular" cursor. Use the <space bar> to start eraseing (just like the PEN command). The space bar will toggle between erase, and no-erase modes. Pressing <shift><clear> will return to the normal command mode.

Note that the eraser is a "square" that is 8x4 dots. If you select the Double X mode, and a step size of 4, the eraser will erase contiguous areas of the screen. For small, or detailed erasures, select a step size of 1. If you use larger step sizes, the eraser will "miss" areas of the screen.

FILLED BOXES

This command is exactly like the <B>ox command, except the boxes are filled (solid color).

GET BLOCK

It is possible to save small sections of the screen onto disk. This is the command that allows you to retrieve them. A directory of all '/BLK' files will be displayed, and you will be prompted to enter the filename of the block you wish to use. Pressing <shift><clear> will escape back to the command mode. After loading the requested block, you will be put in the <M>ove/copy mode to allow you to put the block anywhere you wish. (see the MOVE command). If you are getting a block that has just been put, just press <Enter> to the filename prompt. The last used filename will be used. If there is no previous filename, the name NONAME/BLK will be used.

INVERT SCREEN

Pressing the <I> key will cause the entire screen to be "reversed" or "inverted." What ever was black is now white, and vice-versa. You are returned to the command mode automatically.

LINES

Pressing the <L> key enters the LINE mode. A marker (an 'X') will appear at the current cursor location, and you will be able to move the diamond cursor around the screen to specify the other endpoint of the line. Pressing <ENTER> will draw the line in the current color, move the marker to the current cursor location, and allow you to continue drawing lines. If you press <L> instead of <enter>, the line will be drawn, but the marker will not be moved. Press <shift><clear> to escape to the command mode.

MOVING AND COPYING

Pressing <M> enters the MOVE mode. You create a "box" around the area you want to move, and press <ENTER>. If the area you are trying to move is too large, TRSDRAW will beep, and allow you to try a smaller area. With this version, you are limited to a fairly small area. Future versions will key the maximum size of the area to available memory, and will thus allow larger areas (assuming no HIGH memory is used).

After pressing enter, you can move the "box" around the screen using the cursor movement keys. If you press <ENTER> at any time, the image you "picked up" (copied) will be "put down" at the current location EXACTLY as it was picked up. There are several other choices in "putting down" the image:

<I> - puts down the "inverse" of the image.

<A> - "Ands" the image with what is already on the screen (a point will be white if and only if that point is white on the screen AND in the image).

<O> - "Ors" the image with what is already on the screen (a point will be white
if either that point is white on the screen OR in the image). This option "blends" the image with what is on the screen.

<X> - "eXclusive ors" the image with what is already on the screen. Pressing places the image down, and pressing it again will pick it back up (use this option for "testing" if the image looks good. If not, pressing <X> again will remove the image). Also, if you wish to "remove" the original, press <X> immediatly after pressing <Enter> ("Picking it up")

<P> - will "PUT" the image to disk, for use later with the <G>et block command. A directory of /BLK files will be listed and you will be prompted to select a filename with which to save the block. Press <shift><clear> to exit without putting the block. If you press <Enter> without typing a filename, the last used filename will be used. If there is no previous defalut, the filename "NONAME/BLK" will be used. Note that the extensions and drive numbers are added automatically.

The image you "picked up" is lost when you exit the <M>ove command with the <shift><clear> key.

NEW SCREEN

Pressing the <N> key will clear the screen. If the current color is BLACK, the screen will be cleared to WHITE, otherwise it will be cleared to BLACK. You must press <ENTER> to actually clear the screen. Pressing any other key will cause TRSDRAW to beep, and return to the command mode. This is to safeguard against accidental erasure.

PAINTING

Pressing the <P> key will cause a menu of 24 paint tiles to appear. Move the flashing cursor to the pattern you wish to paint with, and press enter. The screen will be painted with that pattern starting at the current cursor locaion. You may paint on Black *OR* White backgrounds. It doesn't matter. If you paint White on White, TRSDRAW will actually paint with BLACK. The <P>aint command remembers the last selected pattern, and will leave the paint cursor there for when you next invoke the Paint command.

QUITTING TRSDRAW

Pressing <Q> will exit the TRSDRAW program. You must press <enter> to actually exit the program. Any other key will cause TRSDRAW to beep and return to the command mode. You MUST exit TRSDRAW in this fashion, not just by pressing <Break>. You will be returned to TRSDOS.

SAVING THE SCREEN

Pressing the <S> key, followed by either the <F1> or <F2> keys, will save the current screen to the corrisponding screen buffer. The available buffers are displayed during initialization of the program. If you do not have 128K, or both memory banks are in use, this command will be disabled. If the buffer is unavailable, or you press an incorrect key, TRSDRAW will beep and return to the command mode. The screen will not be saved. You may substitute the <1> and <2> keys for <F1> and <F2> if you wish.

TEXT

Presing <T> will enter the TEXT mode. A text cursor will appear, and everything you type will be typed onto the graphics screen. Full wrap-around is supported. To erase a character, place the cursor over that character, and type that character again.

To type in the other three directions (up, down, and upside-down), press <CLEAR> together with the arrow pointing in the proper direction. <CLEAR> <right arrow> will restore normal text. Full wrap-around is supported in all modes. You may move the cursor to any location on the screen using the arrow keys. Press <shift><clear> to escape.

ADDENDUM TO TEXT

This version of TRSDRAW has been modified via TRSTEXT2 to use DOTWRITER fonts instead of the normal TEXT mode. Wrap-around is no longer supported. Also, instead of typing directly onto the graphics screen, you will enter your type into a text block. When you type <T>ext, you will be asked which DOTWRITER font you wish to use, type the name of the font: ie. "NEWS/PR". (note: if the extention is /PR, you don't have to type /PR, and if you've forgotten which fonts you have, type ? and hit return, and it will tell you which fonts you have on all drives, then prompt you for a filename again!) Type your text into the block & hit enter. The graphic screen will re-appear with a flashing square. Use the arrow keys to position the square where you want the text to go, then hit enter. TRSDRAW will then draw the text onto the screen, or hit <shift-clear> to abort the text and return to graphics.

WHOOPS

Pressing the <W> key, followed by either the <F1> key or the <F2> key restores the corrisponding screen buffer. You can use this command to recover from mistakes, or to "try out" certain things with out having to worry about destroying work that has already been done. The screen will be restored to the state it was last <S>aved as. You can have up to 2 screens saved at one time. If you saved a screen, Quit TRSDRAW, and re-entered TRSDRAW without clearing the buffers, you can use the Whoops command to get the screen you had back without having to save it to disk. Before you try something (like <M>oving things), always <S>ave the screen, so you can <W>hoops if you need to. You may press <1> or <2> inplace of <F1> and <F2>.

PRINTING THE SCREEN

TRSDRAW does not currently support a method of printing the graphics screen from within the program. This is for the same reason that GLOAD and GSAVE will not load and save TRSDRAW files (the "screen" you are working with is towards the true center of the 1024x256 graphics RAM). At present the best method of obtaining a printout is to save the screen to a disk file (with the <D> command), Save your screen to a buffer (if available, with the <S> command), and to <Q>uit TRSDRAW. Then type 'GLOAD filename' to load the graphics screen with the file, and use what ever graphics screen print utility you need to get a print out. You can then get back into TRSDRAW with the command 'BASICG TRSDRAW/BAS'. When asked if you wish to clear the buffers, type <N> for no. When you are presented with the TRSDRAW screen, type <W>hoops to get the <S>aved screen back. This omition will be corrected with the next release of TRSDRAW -- however, not all printers will be supported.

ADDENDUM TO PRINTING

If you SAVE your screen in TRSDRAW as: filename/HR, you can use Mel Patrick's HIRES4/CMD to print it. from HIRES4, <G>et 19.5K HiRes file, and <H>ardcopy it, <N>ormal to printer. this will print your file horizontally in somewhat squished, but good quality mode. I'm working on getting Mel to write a patch for HIRES4 that will cause it to print every line twice, like DOTWRITER's dark printing mode, which will give darker print, solid solids, and nearly eliminate "jaggies".

CONCLUSION

That concludes the discussion of TRSDRAW 2.1. As you can see, TRSDRAW can be a very powerful graphics editor. There are, however, several features planned for future versions. These include:

Editing the Paint Tiles,
Arcs,
Flipping sections of the screen (horizontally or vertically),
Macro Keys,
Enhancements to <D>isk I/O, <M>ove, <C>ircle and <T>ext,
Saving of "remembered" points, and Data & Command drives,
and more.

If you have any suggestions, comments, or (heaven forbid) you find any bugs, please bring them to the direct attention of Paul Bradshaw. He can be reached on Compuserve by Email or in section 8 of the TRS80PRO forum (his PPN is [72177,2032]), or at
1372 West Second Ave.
Columbus OH, 43212

This program took alot of time and effort to design and create. If you enjoy the program, feel free to send a donation of whatever you feel it is worth to the above address. Upgrades will appear on Compuserve at regular intervals, or as long as a demand exists. (next version planned for a mid-July release, depending on response).

Thank you for using TRSDRAW, and I hope you have as much fun using it as I had writting it! -Paul Bradshaw

LEGAL NONSENSE

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TRSTEXT2 is based on an algorythm for decoding DOTWRITER fonts developed by Scott McBurney (S.MCBURNEY on GEnie)