CD64-320

COMMODORE® 64/128™

COSMI

Paul Norman's COMPUTERIZED PUBLISHING CO.

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TO BEGIN

Turn your computer off and then on. Turn on your disk drive. Do not have any expansion or utility cartridges plugged into the computer and do not load any "wedge" programs. Insert the program disk in the drive. Type:

Load "*", 8, 1

and press "return." The program will load and run automatically.

The first thing to appear will be an inquiry regarding work disks. If these already exist, then follow the instructions to continue. Otherwise, you will need to create at least two work disks to operate with. One disk will store the editing files, individual pieces of work that you have done, and the other will be used to store completed and formatted bodies of work such as a finished video display or an entire printed page. If new disks are required, then follow the instructions for formatting the disks. Upon completion, it would be wise to label these as "editing" and "display" disks and to number them if more are necessary.

THE MAIN MENU

This menu offers all of the available functions. Move the joystick up and down to make a selection and press the fire button to activate. At the time of activation, the program disk must be in the drive. You will be prompted if something is not right.

1. DRAW AND PAINT

This option allows the creation of high-resolution drawings and paintings in normal or multi-color modes. The program maintains one full screen image at a time. If a larger picture is required (up to six screens in a 2 X 3 format) then each section must be drawn and saved individually. At the bottom of the screen is the command panel. This is activated by holding the fire button down for a few seconds without moving the stick and is deactivated by placing the pointer over the "off" button and pressing the fire button. On the drawing screen, move the brush with the joystick and draw by simultaneously holding the fire button.

The commands are operated by placing the pointer over the corresponding "button" and pressing the fire button. If the "button" is "lit," then the function is on. If it is "out" then the function is off.

DRAW – If on, then you can draw or paint on the screen. If off, then you can erase on the screen.

COLOR – Press the button once and you can change the background color (1) by moving the stick up or down. This color will only be apparent in multi-color mode. Press the button again and you can change the pixel off color (2) by moving the stick up or down. This is the color of all off pixels in an 8 X 8 area of the hi-res screen.

Press the button again and change the pixel on color (3) by moving the stick up or down. This is the color that you draw or print with. Press the button a fourth time and you can change the primary color (4) in multi-color mode.

The changes in color will be displayed in the small bar next to the command button and will be on the screen when you return to drawing. Press the button again to turn off this command.

BRUSH — Press the fire button and hold it down. The number to the right indicates the current brush style 1 – 8. Release the button and you can either leave the command or press it again for the next brush.

OFF – Press this button to return to the drawing screen.

INVERT – Pressing this button in hi-res mode will switch the background and foreground colors giving a color negative image. In multi-color mode it will switch multi-colors 2 and 3.

LINES – Press this button "on" to activate line mode. When you return to the drawing screen, lines will be drawn between any two selected points. Place your drawing pixel at Point A and press the fire button. Now move the pixel to Point B and press it again. A line will be drawn from Point A to Point B.

SPEED – Press this button "on" and move the stick up or down to change the speed of your brush from 1 – 9, with 1 being the slowest.

MODE – The on/off button switches between hi-res (off) and multi-color (on) modes. The resolution of the screen is reduced by half in multi-color mode.

CLEAR – Press the button and the entire screen will be cleared.

RESTORE – Press this button and the image that was last cleared will be restored to the screen. This restored image will remain in memory until another screen is cleared, the program is changed, or the computer is turned off. Therefore, it is useful to clear and restore a working picture at

various intervals so that if you make a mistake or exit the program, either inadvertently or to save a picture, you can return to this program and restore the previous image intact.

EXIT – Press this button and exit the program to return to the main menu. Upon exiting, you will be asked if you wish to save the work. If you do, follow the instructions to name and save the current picture.

2. CREATE SPRITES

This option allows the creation of sprites or movable object blocks (MOB) individually or grouped in any desired configuration. The command panel and sprite drawing sheet are on screen at all times and the pointer is controlled by the joystick. To operate a command, place the pointer over the corresponding "button" and press the fire button. To draw or erase on the sprite sheet, move the pointer with the joystick and press the fire button to draw or erase.

DRAW – When this button is off, you are in erase mode. When on, you can draw on the sprite sheet.

MOVE – Press the button on and a number will appear representing one of the eight sprites (0 – 7). You can then move that sprite on the screen with the joystick. Press the button again and the next sprite number will appear and so on thru number 7. After number 7, the button will go off and you can leave this command. Moving sprites is useful in arranging a large, multi-sprite image. All sprite data, including relative positions, will be saved if desired.

ENABLE – Like the move command, this button steps through the eight sprites (0 – 7) making each one visible (if an image has been created). After Number 7 the command and all sprites will be turned "off." At any time, you can leave this command, and the last sprite number enabled will remain on. (Remember that "0" is the first sprite number, so that a "3" here will mean four sprites enabled.)

COLOR – This button also steps through 0 – 7. At any number you move the stick up or down to change the primary color of that sprite. After 7, you can leave the command.

MULTI – Press this button on and hold the fire button down. The number "1" will appear and multi-color sprite mode will be engaged. Move the stick

up or down to change multi-color Number 1. Press the button again, and it will remain "on" and you may leave the command with multi-color mode engaged. If the button is on when you go to this command, then pressing the button turns off the button and multi-color sprite mode. When in multi-color mode, the drawing sheet will behave differently.

The horizontal resolution of the sprite is now made of bit pairs. That is, each horizontal, colored point is actually two points and the color is determined by the status of the pair. If the right point is on and the left is off, then the color will be multi-color 1. If both points are on, then multi-color 2 will be displayed and if only the left point is drawn, then the primary color is shown. The drawing pointer will still move over every individual point but when drawing a point (pressing the fire button) two points on the sheet will be filled and colored depending on the status of that point pair.

SCAN – (One or more sprites must be enabled).
Press this button on and move the stick up or down to scan through the sprite data memory from Number 128 (the first block) to 255. This constitutes the 128 available sprite images. Below the command panel is displayed the number and memory address of the current sprite image in both decimal and hexadecimal numbers. The actual sprites displayed on the screen will also scan in a manner determined by the number of enabled sprites. For example, if one sprite is on when scanning, the image displayed will change with each new memory block (just like the drawing sheet). However, if four sprites are on at once, then the images of all four will remain until four memory blocks have passed.

This is useful for multi-sprite drawings. Let us say that a picture consisting of all eight sprites has been made in a particular arrangement. When scanning through memory, the eight sprites displayed will stay constant until eight memory blocks have been scanned through and at that point the sprites will display the next eight memory blocks. This way, if you have drawn several multi-sprite pictures that relate to each other for the purpose of animation, then you can preview that animation by simply scanning through the memory.

COPY – Press the button to make a copy of the current image displayed on the drawing sheet. The button will remain on. You can then leave the

command for any purpose and the copy will remain as long as the button is on. Scan through memory to some other sprite memory block, then return to the copy button and press. The stored image will be sent to the current block. To make multiple copies, press the button on again and scan to the next desired location, and so on. Just remember to recopy the image before moving on. If drawing many related sprite images for animation, copying the original image several times makes changing the "moving parts" easier and the final animation smoother.

CLEAR – Press this button to clear the drawing sheet and current sprite image.

RESTORE – Press this button to restore the previously cleared image.

EXPAND – Press this button once and all sprites will double in size in the vertical direction. Press it a second time and they will double their original size in the horizontal direction. Press it a third time and the sprites will expand in both directions, quadrupling in size. Press it once again, and they will return to normal size. This command button can be left at any time.

REVERSE – Press this button to reverse the current image.

SHIFT – Press this button on and use the joystick to move the image around within the sprite sheet. Caution should be taken, such as making a copy before shifting, because any drawn points shifted off the sheet will be lost.

FLIP – Press this button to flip the current image upside down.

EXIT – Press this button to exit the program.

3. CUSTOMIZE CHARACTERS

Design a custom character set that can consist of up to 256 different designs of letters, numbers, and symbols or for creating a screen image made of original characters. Custom characters used in screen displays allow for easier and faster animated or scrolling pictures than bit-mapped, high resolution images while remaining the same in detail and color. The only limitation is that a character set has a minimum of 256 characters while one screen is comprised of 1000 character sprites. However, if most pictures were broken into 1000 equal sized pieces, many pieces would be virtually identical. This is the concept behind creating screen images with a single character set.

To operate the character editor, move the pointer anywhere on the screen with the joystick. The command panel is at the bottom of the screen at all time. Place the pointer over the corresponding buttons to operate the commands. The rest of the screen is comprised of four smaller "windows" and a large central "window." The small windows are magnified characters where designs can be drawn or erased with the pointer. A real-sized version of the character is located near the bottom of each window. The large window in the middle is the entire 256 charcter set arranged in rows of 16. When the pointer moves over this window, it changes to a bit pointer. Here you can draw over the entire set to create a whole image that will be written in characters. Wherever images are made on the screen, they will be reflected in all the formats.

WRITE – Press this button "on" to write to the character set. Press it off to erase.

COLOR – Press this button repeatedly to change the primary color that the characters are written in. This color affects only this program display.

MULTI – Press this button "on" once and engage multi-color mode. (If the character color is less than 8, then multi-color will not be apparent.) Move the stick up and down to change multi-color 1. Press this button again and move the stick to change multi-color 2. Press it once more and you can leave this command with multi-color mode on. If you press this button while it is "on," it and multi-color mode will be turned off. (Multi-color 1 colors bit-pair 01, on/off, character color affects bit-pair 11.)

SCAN – Press this button on and move the stick up and down to scan through the character set. In the central window, a reversed image of the current character will show the location of the character while scanning. The magnifying windows show four consecutive characters. The upper left window is the character indicated by the number shown on the right side of the command panel.

The lower left is the next numbered character, the upper right, the next and the lower right, the fourth.

CLEAR – Press this button on and clear the current character displayed in the upper left window and at the CHR number. Move the stick up and you can clear all subsequent characters from that point on.

(Note: Only the first character cleared when the button was pressed is recoverable).

RESTORE – Press this button to restore the character previously cleared. This function can be used to copy characters to other locations. Simply clear and restore the character to be copied and then scan to the desired character number and restore again. To make multiple copies, clear and restore again and repeat the process.

C SET – Press this button to switch in the standard COMMODORE character set. This set can then be modified, if desired.

EXIT – Press this button to exit the program.

CHR. – This indicates the number of the current character displayed in the upper left window.

4. COMPOSE MUSIC

This program allows the composition of single to multi-part music to use alone, in programs, or as part of a video display.

On the upper part of the screen are three note select areas differentiated by color. The top section includes four octaves in the melody pitch range. The middle section covers three octaves in the accompanyment range and the bottom section has three octaves of bass tones.

In each section, on the far right, is an "S" that allows you to "step" through a measure, one note at a time. There is also an "R" which places a "rest" in the measure. To operate in this area, move the joystick in any direction and a reversed image cursor will move over the notes and symbols. By pressing the fire button, you place in the measure a note or a rest. A note will be heard when selected and a rest will "click," indicating that it has been accepted. If you press the fire button when the cursor is on your "S," then the notes or rests of the current measure will play; one note for each press. The numbers 0 – 7 will appear next to the "S" indicating position of the note in the measure. The step function is used to edit a measure.

For example, enter eight notes with the fire button. Now move the cursor to the "S" and press the button repeatedly. The eight notes will play, starting with "O" and ending at "7." To change the fourth note, step through 0, 1, 2, and then move the cursor to the desired note and press the button. Return to the step mode, which will now be at 4, and step through. You will find that the fourth note has been changed.

Each of the three sections operates identically except that each one writes to its own measure. As on a sheet of music, these measures are "stacked" and play at the same time but their content is entirely independent. The measures have a resolution of eight notes. After eight notes have been entered, the counter will return to the start and write subsequent notes or rests over the previous ones.

Below the note sections are the commands and sound processor. Each labelled command or function has a corresponding button. The operation of these buttons varies with the function required. Some are simply "go" where you place the pointer over the button, press the fire button, and the job is done. Others are continuously on or off, while others go on and hold the joystick for some purpose until it is turned off.

MEASURE – Press this button on and move the stick up or down. To change the current measure, the three digit number on the right of the button

displays which of the 256 possible measures is currently being worked on. The number of the measure cannot be greater than the length of the piece. Press this button again to escape this command.

LENGTH – Press this button on to set the length of the composition in measures. The length determines at what point the music will end and begin again during play. The length can be changed any time but note that if the current measure number is beyond the length, then it too will change with this function. The number to the right of the button shows the length in measures as the joystick is moved up or down. Press the button again to leave this command.

TEMPO – Press this button on and move the stick up or down to change the playing speed of the music. The speed set will remain when you exit this command. The only practical way to do this is to play the music and change the tempo while it is playing. Press the button off to escape.

PLAY – Press this button on and play the composition from the beginning to the length of the piece, at which point it will start over. The measure number will count up while playing so you can make note of error of change locations. The pointer can move away from the button while the music is on. To stop play, simply return to the button and press it off.

(*Note:* The measure and length buttons will not work during play mode).

MELODY – Press this button on and a copy of the entire melody to the length of the composition is transferred to the middle or accompanying measures. (This, of course, will overwrite any existing middle section). The reason for this is to allow the modulation of the melody sound. Briefly, modulation is the effect one sound source has on another. Since the Commodore 64 has only three voices, or sound generators, two of them must be used to achieve any modulation. Modulation can dramatically change the quality of the sound. First, if the pitch of the two sounds are the same, as they will be when the button is first pressed, then the modulation comes from differences in the voice setting such as wave form, tone, filter, etc.

Secondly, if you move the joystick up or down, a gradual change in the pitch of the second voice (the copy) will change the sound to an increasing degree; the greater the difference in pitch, the more noticeable the modulation. A fuller, richer, more complex sound is the result. If the voices have similar settings, then the effect of pitch change gives the illusion of reverberation and density. Too much modulation can be a bad thing, so use your ear wisely. Press the button off to escape.

BASS – Press this button on to do the same as above except that the bass track is copied to the mid-section for bass modulation. Press the button off to escape.

CLEAR – Press this button to clear all three sections in the current measure.

COPY – Press this button on to copy all three sections of the current measure. Move the pointer to the measure button and change the current measure to one into which you want to place the copy. Then return to press the copy button and the copied measure will be written to the current measure. To make multiple copies press the copy button again and allow the same procedure.

TIE – Press this button on and all the notes in all measures will be tied on playback. That is, they will flow smoothly into each other instead of the more stacato sound. The difference is best described by listening but one effect to consider while composing is that while in tie mode, notes of the same pitch following each other will sound like single long-duration notes. In this program, each will contain eight notes (or rests). Therefore, they will be "eighth" notes. To create quarter, half or whole notes, the music must be played in tie mode. Also, if two notes of the same pitch are together and you want them distinct, then a rest will need to be placed between them. Press the button off to disengage the mode.

EXIT – Press this button to exit the program.

THE SOUND PROCESSER

Each voice has a sound processing section, including on/off, volume, tone, touch, and timer. Below these are functions for all three voices such as overall volume, filtering and resonance.

VOICE 1, 2, 3 – Press this button to turn the voice output on or off.

VOLUME – Press this button on and move the stick up or down to vary the volume of the voice individually. Press off to escape.

TONE – Press this button and step through the seven available wave forms (or sound quality). The wave form selected will remain when you leave this button.

TOUCH – Press this button on and move the stick up or down to alter the "attack" of the voice, that is, how quickly a note rises to full volume after it has begun. Press Off to escape.

TIMBER – Press this button on and move the stick up or down to change the feel and quality of the sound. (This will only be audible if the tone number selected is greater than 3). Press off to escape.

VOLUME – Press this button on and move the stick up and down to change the overall volume of the three voices. Press off to escape.

FILTER – Two buttons are provided for filtering. Press the first one and the numbers 1 through 7 appear. These numbers represent various combinations of filter voices.

1 Filter Voice 1
2 Filter Voice 2
3 Filter Voices 1 & 2
4 Filter Voice 3
5 Filter Voices 1 & 3
6 Filter Voices 2 & 3
7 Filter all voices

Press the second button on and move the stick up or down to change the filter cut off frequency. This acts like a general tone control for all filtered voices. Press off to escape.

RESONANCE – Press this button on and move the stick up or down to vary the amount of resonance. Resonance is a favoring of certain frequencies determined by the filter setting. The effect is only audible if the filter is used. While resonance is subtle in its influence, it can accent a composition.

All of the commands and functions, except measure and length, should be experimented with while some music or sound is playing, because the resulting effect can vary tremendously or very subtlely. Let your ear tell you what a correct setting is.

5. CREATE SCREEN DISPLAYS

This program allows you to construct up to eight full screen pictures, using the custom character set that you made with Program No. 3. One entire screen is available for building and the command panel is called to the bottom of the screen by holding the fire button for a few seconds without moving the stick.

To build the screen, move the joystick in any direction. The pointer in this case is one of your characters. When you press the fire button, that character will be affixed to that position. If you hold the fire button down and move the stick up or down at the same time, the pointer character will scan through the whole set. Where you stop, that character becomes the new pointer. If, while holding the button, you move the stick left or right, then the primary color of the character changes.

COLOR – Press this button on and move the stick up or down to change the background color (1). Press again and the stick changes multi-color one (2). A third press and the stick controls multi-color two (3). Press the button off to escape the command.

MULTI – Press this button on and multi-color mode is engaged; press it off to disable multi-color mode.

STORE – Press this button on and move the stick up or down to select a location (1 – 8) to store the current screen. When you have chosen a number, press the button off and the screen will be stored at this location. **Selecting 0 will have no effect.**

DISPLAY – Press this button on and move the stick to select a location, 1 – 8, where the desired screen is stored. Press the button off and this image will be brought to the screen. By using the display button and the store button, you can sequence the created screens in any order. **Selecting 0 will have no effect.**

FLASH – Press this button on and move the stick to select a number 1 – 8. Press the button again and the stored screens will be displayed on the monitor in ordered sequence, starting with 1 and going through the number selected. That is, if you selected Number 4 with the stick and pressed the button, Screens 1, 2, 3, 4 will appear on the monitor one after the other and repeat the sequence until the fire button is pressed again.

SCROLL – Press this button on and move the stick to select a number 1 – 8. Press the button again and the stored screens will scroll from right to left from Screen 1 to the selected number and then wrap around to No. 1 again. Press the fire button to stop and return to the command panel.

CLEAR – Press this button to clear the current image on the monitor.

RESTORE – Press this button to recall the previously cleared screen.

The clear and restore commands can be used if you wish to sequence your stored screens, but all eight storage locations are filled. For example, use **display** to bring a stored image to the screen. Then clear it. Now bring another stored screen up on the monitor, and store it to the location of the previous screen. Now restore the cleared image and store it to the location vacated by the second screen.

OFF – Press this button to return to screen construction.

EXIT Press this button to exit the program.

6. CREATE LETTERING

This option lets you make unique alphanumeric characters for letterhead, banners, headlines, flyers or bold video displays and titling.

The program will first display the optional sizes of the characters to be designed and one of these can be selected with the joystick. (Mixed sizes are not possible).

> **NOTE:** In some select sizes, there is a memory limitiation. For example, if the largest size (No. 9) is chosen, then the maximum number of characters will be 28, which will not contain a complete alphabet and number set. Therefore, you must decide which alphanumeric characters are not required for this particular job.

After the size selection has been made, the designing screen appears. A real size character space and a magnified designing sheet in the selected size occupy the upper part of the screen. Use the joystick to move the pointer and write or erase with the fire button. The command panel is at the bottom of the screen and is always available.

WRITE – Press this button on and you can write on the designing screen. Press it off and you can erase.

COLOR – Press this button to change the primary color of the character.

SCAN – Press this button on and move the stick up or down to scan through the set. Press off to escape.

DISPLAY – Press this button to display the entire character set. Press it off to return to the designing screen.

COPY – Press this button on and a copy of the current character will be made. Press it off to write the copy to another character location selected by SCAN.

CLEAR – Press this button to clear the current character.

RESTORE – Press this button to restore the previously cleared character.

EXIT – Press this button to exit the program.

When exiting programs 1 – 6, you will be asked if you wish to save the work. This is optional. If you do want to save, then a name must be entered for the file. Type the name, which can be no more than eight characters, and press return. The material will now be saved to an "editing" disk. If any effor occurs, this sequence will repeat.

CAUTION: All file names used will save even if a file with the same name already exists.

If an error occurs for no apparent reason, it is probably that the work disk is full and another will need to be used. The option of formatting a new work disk before saving will be provided.

7. FORMATTING A SCREEN IMAGE

This program allows the compilation of previously designed screens, characters and sprites into one screen-sized still picture. Music can be included. This compilation can then be saved in its entirety. Follow the screen instructions carefully.

8. ANIMATE A SCREEN IMAGE

This program, compiles and then animates a screen display. Following the screen instructions, you can flash or scroll created screens, add moving sprite images, incorporate text, and add music. The finished display and animation can be saved in its entirety and when loaded will run independent of the master program.

9. FORMAT A PRINTED PAGE

This program allows the construction of a page to be printed on a printer. Since a printed page is approximately 6 times larger than the Commodore screen, this work will need to be done in parts. The parts will be numbered 1 – 6 and each part will be saved to a printing disk. Then when the page is finished, all six parts will be read from the disk and sent to the printer.

The page can consist of anything created with the master program such as screens, characters, fonts, spsrites and also regular text. The number of pages to be copied can be selected. All instructions for step-by-step operation will appear on the screen.

10. PRINT

This program lists the available printers that can be driven by the program. Select your compatible printer and then enter the name of the formatted page, that has been saved to a printing disk. Any error condition will cause this sequence to repeat. Follow all screen instructions carefully.

Programming Specifications:

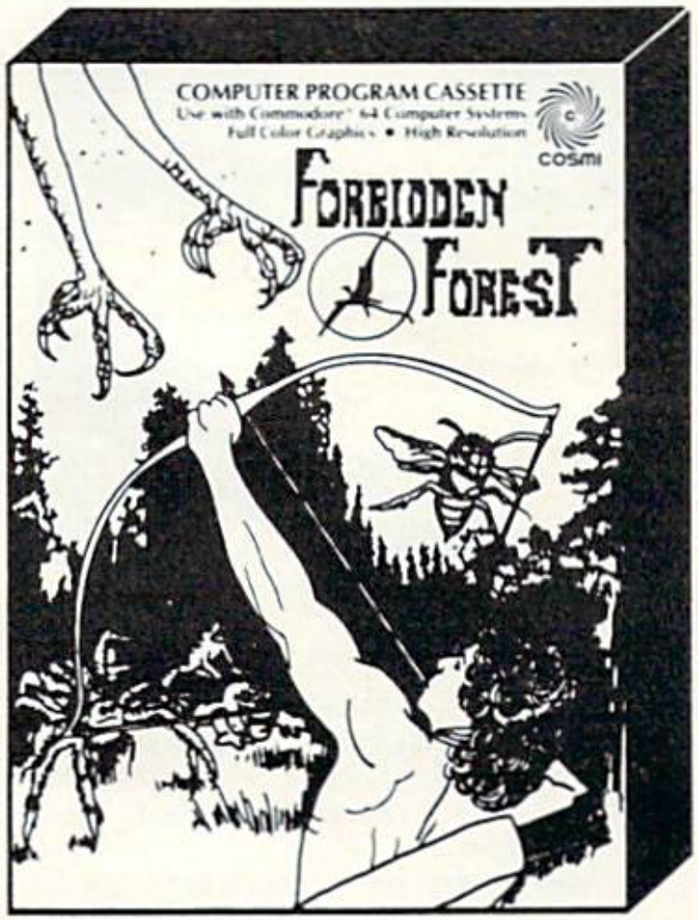
Draw & Paint Data		$2000 – $3FFF
Color Data		$0000 – $0FFF
	($D800 –)	$0800 – $0BFF
Sprite Data		$2000 – $3FFF
Character Data		$0800 – $0FFF
Screen Data (1-8)		$1000 – $3FFF
Color Data (1-8)		$4000 – $5FFF
Music Data	Melody	$5000 – $5FFF
	Middle	$6000 – $6FFF
	Bass	$7000 – $7FFF
Special Character (Font)	Data	$0800 – $0FFF

Upon exiting the Master Program the data will remain in memory. Any saved data files can be loaded as unrelocated program files.

Check out these other 'Super Hit' Computer Programs!

Check out these other Paul Norman 'Super Hit' Computer Programs!

Super Huey is a new, experimental high-performance helicopter utilizing the latest in electronic control systems and stabilization, and YOU are going to learn how to fly it! Space age controls and instruments, along with an in flight computer, teach you the intricacies of rotary wing aviation. Test your skill in the sky with challenges of solo flight, exploration, rescue and combat. Study the instructions carefully . . . you're going to be tested!



Zounds! And gadzooks! You were just out to do a little target practice with your bow and arrow when you lost your way. Now the moon is coming out and it's getting darker; the forest is getting more ominous and there are some strange rustling noises coming from the bushes. Egad! You have mistakenly wandered into the "Forbidden Forest!" Only your skill as an archer can protect you now. Here they come! Giant spiders, an enormous bumble bee, huge leaping frogs, a fire breathing dragon, a phantom protected by killer skeletons, an 80 foot snake and, finally, the ghost demogorgon who only appears during flashes of lightning that herald the coming storm. Move quickly, aim accurately, destroy the monsters and you just may escape from the "Forbidden Forest."

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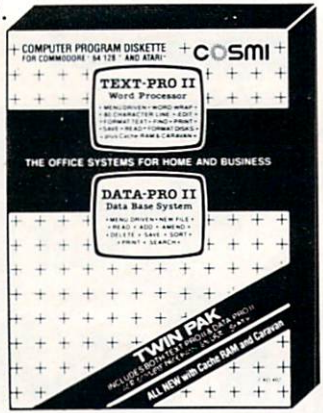
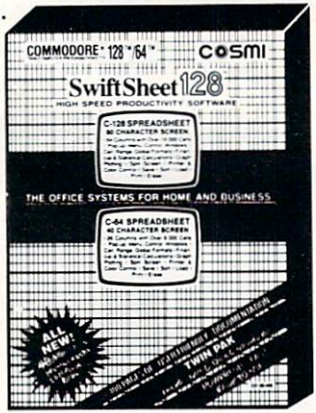
where the action is!

Office Systems for Home and Business

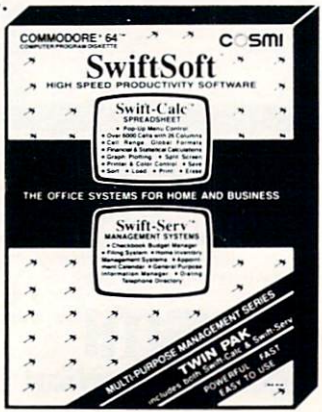
A.



B.



C.



A. TEXTPRO II/DATAPRO II for Commodore 64/128™ and Atari.® All **NEW** version of COSMI'S best selling word processor and data base system "twin pak" . . . Includes exclusive NEW features Cache RAM and CARAVAN.

B. SWIFT SHEET 128 for Commodore 128.™ All new expanded 64 column version of COSMI'S award winning SwiftCalc spreadsheet program designed specifically for the Commodore 128 computer. Extensive "user-friendly" documentation.

C. SWIFT-CALC™ SPREADSHEET. Easy to use program will complete calculations, whether simple or complex. Ideal for budgets and forecasts, expense reports, business plans, P & L and balance sheets, cash flow analysis, job quotations, statistical analysis, interest calculations . . . and more.

SWIFT-SERV™ MANAGEMENT SYSTEMS Comprehensive package of home management software. Performs most functions you expect from a home computer on any printer. Front end loader and five server modules.

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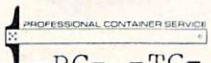
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