#### BOBRINES



SoundTrax is an unprecedented sound sequencing system for the CoCo III. It requires no extra hardware (i.e. midi keyboards, cables, etc.). All of it is contained in your CoCo. This amazing program will read in a digitized sound and play back all of the notes in the octave in which it was recorded. And it's POLYPHONIC! You can sequence up to four voices at one time, and not only the same sound! With as many voices as can be held in your memory, depending on the song, you can create a score of up to THREE DAYS in length using drums, horns, strings, even your own voice! And you can play them all together! Using the built-in windowing point-and-click editor, you can cut, paste, even synchronize the score to just the way you like it. Use the pre-sampled sounds trem the disk included, or make your own by importing them from some of the more popular dightzers available. Also, CALL for the availability of extra sound sample disks! Get it today; you won't believe your ears! Req. 128K CGCo III, mouse/joystick, and disk



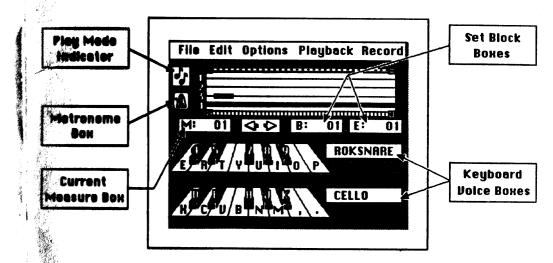
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# **SoundTrax**



A 128K and 512K Sound Sequencing System for the **Tandy Color Computer 3** 

SoundTrax is a sound sequencing system for the Color Computer III with 128 or 512K, disk drive, and mouse/joystick and is an achievement in programming. I want to thank you for purchasing this software instead of pirating it, and thereby supporting future production of quality software for the Color Computer I, II, and III.

THE DISK—The disk included in this package is called a "flippy" because one can access both sides merely by flipping the disk in the drive. Each side is labeled. This disk contains sides one and two. The label corresponding to its indicated side will be on the right side of the disk, assuming you insert the disk vertically. This is shown on the label by an arrow pointing to the write-protect notch that is being used. This notch always goes up. To test this, insert Disk One into drive 0 and type DIR and press <ENTER>. You should see a list of files starting with the file ST/BIN. If you do not see this file, you have inserted the wrong side. This is the master disk. Disk Two contains a selection of sound files for use in the creation of scores.

BACKUPS— Because of its nature, SoundTrax is not copy protected, and this disk should be backed up. You should backup both the boot disk and the Sound Sample Disk (disk two) to protect your investment. Copy both sides of this disk with the BACKUP command and keep these in a safe place. If you have problems with the original disk within the first year of use, you can return the disk for replacement (refer to the warranty on the back cover).

LOADING—First initiate a cold start (turn the computer off and on again after about 10 seconds) and insert the Master Disk into drive 0. Type LOADM"ST" and press **ENTER>**. The program will auto-start.

THE PROGRAM—Congratulations! You have just purchased SoundTrax, a program which utilizes a revolutionary new process in sound generation. SoundTrax is a completely unique idea in sound reproduction on the Color Computer III. Previously, when looking to recreate a piece of music on the CoCo, the alternatives either required expensive MIDI hardware or large amounts of memory. The latter involved the digitization of the entire piece which introduced the possibility of noise and imperfections, along with the enormous amount of memory required. This was the process of straight recording, instead of creating. SoundTrax requires only one sampled note per voice to create the music you want by scaling it down its octave. This program, in the process of recording your score, saves which instrument you

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wish to play, its play rate (what note), and when it is played. This enables you to to create the type of score you wish for as long as you're willing to play; the timer allows you to play for up to three days. Try to digitize a piece that long! Although we have included a disk of sampled sounds, you also have the ability to import your own samples from various sources to be sequenced by SoundTrax. In all, SoundTrax lends the ability to take total control of your digitized sounds.

Certain terms must be defined at this stage. SoundTrax uses a point-and-click graphic interface. This means you must use a mouse or joystick to control the selection arrow, and the fire button to indicate your choices. The following terms will be used when referring to directions for the interface.

**Point**— Place the arrow over the indicated location.

Click— Press the fire button to select your choice or, if the fire

button is already down, release it.

Drag— While holding the fire button down, move the arrow with

the mouse.

Usually you will be pointing the arrow to a selection, clicking on it, and dragging to another section of a pop-up menu that will appear. We'll explain more about this later. Also keywords of SoundTrax (that you might see on the screen) are usually displayed in a computer font, such as SOUNDTRAX.

The programs gist is that you can keep a large number of voices in memory on call at anytime during a score. At any one time in the score you can play four of these voices in four separate TRACKS. However, you can easily change the voices you play at different times. Therefore, although you are only playing four voices at any one instant in time, you could play through the entire library of sounds in one session. These TRACKS can be manipulated, synchronized, merged, copied, etc. to make the score the way you like it. Another unit in SoundTrax is the MEASURE. When you are viewing a score, that portion of the score you see on the screen is a MEASURE. These MEASURES can be manipulated in various ways. The size of the measures are directly dependant on the TEMPO and TIME SIGNATURE, but most notably, the measures are grouped into BLOCKS. You only have one BLOCK at a time (defined by the beginning and end measure numbers in the SET BLOCK BOXES on the screen). This BLOCK itself can be directly manipulated the same as the TRACKS in the EDIT window, with many of

the same features. By doing this, you can record into only the measures you wish, cut, paste, erase, etc. only the pieces you wish to modify. Also, all **TRACK** functions work only in the **BLOCK** indicated, thereby giving you complete control of these functions also.

The screen is set up with various areas, each of which have vital importance (see cover for diagram). The most prominent of these is the Score view section. This section displays one measure of the current score in memory. It displays all four tracks in the following format: if the portion of the line is black, the track is playing a note in this particular measure; if it is white, it is unbusy or not playing anything. The results of most edit functions (especially TRACK functions) can be seen on this measure display. The keyboards below are in direct coordination with the keyboard of your computer. Each key is labeled with the corresponding key on the CoCo. You will be able to play right through the speakers of your monitor with these keys, and record to your score. The Keyboard Voice Boxes hold the voice that each keyboard is prepared to generate. The play mode indicator basically informs you that sound is being generated and no input from the mouse/joystick is being accepted (aside from the terminating click). The Set Block Boxes are indicators to the current block limits, and the Current Block Box tells you exactly what measure you are viewing. The Metronome Box indicates if the metronome is currently on (a steady beat generator). Last, the command strip across the top allows you to access all possible commands to SoundTrax without typing them in. Simply point upon one of the commands, drag down the menu produced, and select your choice by releasing the button.

All of these terms and functions will be discussed later, so don't worry if you're a bit confused.

The following information will take you through the processes of SoundTrax and its various functions, however documentation of a utility of this size is rarely ever complete. If you have questions or problems, please feel free to contact us at the following address:

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FILES—There are three type of files used by SoundTrax. They are as follows: Voice, Configure, and Score files. Voice files are signified by the .SND

extension and are the actual sounds that are produced when you hit a key. We include a full disk of these sounds, but you can import them from almost any source, as long as they are valid digitized sounds and have the .SND extension. You can convert other files to have this extension via the RENAME command under Disk Extended Basic. There are two types of SoundTrax Voice files. The first is the same type you may decide to import from other sources and that is a diminishing sound. These sounds will play for a short period of time and them diminish or cut off and stop. The second type of Voice is the looping sound. These voices are specifically SoundTrax files and we've selected a few for you, including the Cello sound that loads on boot-up. These sounds play continuously until you lift up on the note.

Configure files are used to make life much simpler. Whenever you save a Configuration, you save the status of SoundTrax at that time, such as Tempo, selected voices, but most importantly the Voices in memory. When you load a Configure file (noted by the .CFG extension) it will change the status of SoundTrax to that of the configure. All voices specified in the file will be loaded for you. You'll find this to be much nicer than loading them by hand!

The last type are the Score files. These are noted by the .SCO extension. They are your actual scores created using SoundTrax. We'll talk about this later, but leave it to say that each Score file automatically loads its own Configure file, thereby also loading in all needed Voice files. Most of the save/load routines are very intuitive and easy to use, and we'll talk more about each later on.

PLAYTHROUGH MODE—After the program has loaded and sits idly waiting for you to give it a command, you will notice the boxes to the right of the pictures of the keyboards have the names "CELLO" and "ROKSNARE". These are the voices which are immediately loaded into the respected areas of your Color Computer keyboard. We will refer to these boxes as the Keyboard Voice Boxes. To try them, take your joystick or mouse and point the arrow to OPTIONS. Click the fire button. The OPTIONS menu should appear. While continuing to depress the fire button, drag the arrow to the PLAYTHROUGH option, then release the fire button. The menu should disappear and a pair of notes should appear in the upper left-hand box. This box is called the Play

Mode Indicator. This tells you the **PLAY** mode is active, the arrow is deactivated and the keyboard is now enabled.

The CoCo keyboard has been divided into two sections, an upper keyboard and a lower one. Each one can have a separate voice loaded into it (take, for example, the startup sounds of CELLO and ROKSNARE). These voices should be able to be played with the keys associated with the picture above. For example, to play Hi-C from the lower keyboard, press the "." key. If you don't hear a sound, check your audio connections to your speaker and turn up the volume if necessary. Play with all the notes for a while. You will notice you can play 2 notes simultaneously in PLAYTHROUGH mode, from either keyboard or both at the same time. To exit this mode, press the fire button. The notes in the Play Mode Indicator will disappear and your arrow will reappear.

KEYBOARD SELECT—Now you may want to try different voices which have been loaded into memory. Click on the OPTIONS menu again and drag to the KEYBOARD SELECT menu option. Release the button and a new menu will come up and request which keyboard you wish to select the voice for: LOWER or UPPER. Click on your selection. A menu of a list of all voices in memory will appear. Place the arrow over the one you wish to choose and click. If you wish not to change the voice you may choose the cancel option in the lower right-hand part of the screen. When the choice is made, a verification menu will appear. Choose CANCEL if you wish to abort. After your choice is made the menus will be removed and your new choice will be displayed in the box of the keyboard. You may try the new voice with PLAYTHROUGH.

USING THE METRONOME AND TEMPO—You may wish to use a metronome when playing. This function is activated by pointing the arrow to the area underneath the note box and clicking. This is called the Metronome Box. An image of a metronome will appear and a black line will also appear in track 4 of the measure screen. When you use PLAYTHROUGH you will notice a constant ticking sound. This will help you keep tempo. To turn off the metronome simply point the arrow on the metronome box and click. To adjust the tempo of the metronome select the OPTIONS menu and

release the button when the arrow is choosing **TEMPO**. The number that appears in the following menu is how many ticks per minute there will be. To change the number, point at the up and down arrows and click. The number will grow higher or become lower depending on the direction you are pointing. When you have decided on the tempo, point the arrow at the **DONE** option and click. The tempo will now be change to that number. There is a necessary limit to the tempo. It ranges from 18 to 255, and you cannot go beyond these bounds.

LOAD AND DELETE VOICE—You may load as many voices as can fit in your memory. To do so, select the FILES menu. Pick the Drive you wish to load the voice off of by selecting the DRIVE # option. (Note: Double sided drives are not yet supported, so you may experience an error when attempting to access drive 2 or 3 using double sided-drives). To load them from your SoundTrax disk, flip the disk over to the Voices side. Each time DRIVE # is selected, the drive number will increment by one from 0 to 3. When your drive number is chosen, choose the LOAD VOICE option from the FILES menu. The drive you chose will access and a menu will appear with all the voice files on that drive. Choose the Voice you wish and point the arrow at the LOAD command and press the button. If there is no error (i.e. voice buffer full, disk error), the voice will now be loaded into memory and can be chosen using the KEYBOARD SELECT command. Remember that CANCEL and ARE YOU SURE type options are for your protection. Don't hesitate to use them if you have made an error.

Notably in 128K Color Computers, the voice buffer loads up very quickly. There is 48K of voice memory in the 128K machines, while the 512K Cocos have 320K buffer for voices. If the voice you are loading is too big for the remaining buffer, or if the individual voice is larger than the immediate buffer (which is about 16-18K) a window will appear stating "Buffer Full!" and abort loading the voice. To remove error windows simply click the button. To make more room you may wish to delete voices. Select DELETE VOICE from the FILES menu. A window will appear with all the currently loaded voices. You may choose one of these voices or CANCEL to void your command. Once a voice is chosen you are asked to verify your command. Once confirmed, the program may pause momentarily to clear

the area and then the windows will disappear. The voice has then been deleted.

INFORM—To help you know what your buffer status is you can select INFORM from the OPTIONS menu. This will display a window with useful information such as voice memory and score memory used, current tempo and time signature, and name of current score if one is loaded. This will let you know if you are getting close to a buffer full error for any buffers. Click the button to remove the window from the screen.

SAVE AND LOAD CONFIG—I'm sure you will soon notice that loading each voice one at a time can start to be tedious. That can be reduced to once with the SAVE CONFIG and LOAD CONFIG commands. Once all the voices are loaded you like, select SAVE CONFIG from the FILES menu. This will save not only the current voices, but current tempo, time signature, and the voices in the Keyboard Select Boxes as well. When SAVE CONFIG is selected, a window will appear. If you type a key, the letter you press will appear in the small box with a black cursor. Type in the name of the configuration file up to 8 letters and press the enter key. Then depress the button when the arrow is on save. If successful, the .CFG file will be on the current drive.

To load the configuration, put the disk with the .CFG file you want into the drive and select LOAD CONFIG from the FILES menu. You will be shown all the .CFG files on the disk. Select the one you want and depress on LOAD. SoundTrax will immediately load the configuration and start loading the voices. It is very possible the voices you are requesting are not on that disk. This allows you to have an extremely large amount of voices in one score (most likely on a 512K machine), more than can be held on one disk. If the voice cannot be found, the program will stop and a window will appear. It will tell you which file it cannot find and ask you for a new drive or give you the option to cancel the rest of the LOAD. If the voice is on another drive, select the drive number it is on, or load your drive with the new disk and reselect the default drive. NOTE: Changing the drive number here changes the Current Default Drive. If the following voice is not on the same drive the window will reappear. The configuration will then continue to load. If the

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voice buffer fills before finishing (such as using a config from a 512K machine on a 128K machine), the "Buffer Full!" error will appear and the config load will discontinue. Once completed, the voices in the Keyboard Select boxes will be changed and all the configuration voices will be in memory.

RECORDING FOR THE FIRST TIME—You are now ready to record. First the tracks into which you want to record into need to be selected. This is done by selecting SET TRACKS in the RECORD menu. You may select two tracks at a time. The first number in the SET TRACKS window can be set from 1 to 4. Notice that you cannot set the number to the same as the other number. The number on the right can be set from 1 to 4 or N meaning none. This is for when you wish to record only in one track (for when the other three are full, or you plan to fill them with something else). It is suggested for the first time to leave the tracks at 1 and 2. When the metronome is on, it takes up track 4. Track 4 can still be recorded into but cannot be heard unless the metronome is off. You do not lose information on track four by selecting the Metronome! All information in the score is saved, but while the metronome is on, you cannot hear it.

Now select the voices you wish to use with SELECT KEYBOARD. For this run, select the metronome on. Then select the RECORD BLOCK option from the RECORD menu. The verify window will come up. Once you choose OK, the metronome will start and recording mode is on. Now start playing what you wish upon either keyboard. Normally when you choose the RECORD BLOCK option, SoundTrax will only record in the designated space shown in the SET BLOCK BOXES. However, when you record a score for the first time, the Color Computer will keep recording until you click the button or overflow the record buffer (hard to do for a first recording, but definitely possible. In this case, you will lose your recording). When you click the button the Play Mode Indicator will disappear and the first measure of what you recorded will appear in the Current Measure Display (which is displayed as [M: 01] in the Current Measure Box). To scroll through your new score, click the button on the arrows next to the Current Measure Box. You can scroll until you get to the last measure. Holding down the button on the arrows will scroll through the whole score. To play what you have just

recorded select **PLAY SCORE** from the **PLAYBACK** menu. Your score will play to the end or until you press the fire button again.

SET BLOCK—SoundTrax also comes with many editing features to allow you to create the score you want as easily as possible. As you will remember, a BLOCK is simply a grouping of measures. You will notice the two SET BLOCK BOXES are set to [B: 01] and [E: 01]. This means that measure 1 through 1 is the set block. Any editing features you use (with the exception of Paste and Add Block, more on those later), will be done with the measures within the set block. There are two ways to change the block. First is to select SET BLOCK in the EDIT menu. The SET BLOCK window will appear showing you the current Begin Measure and End Measure. There are two arrows next to each number. You can change your block with these arrows. Please note the end measure number must always be equal to or higher than the begin measure. So you have to move the end measure first. This number can be from 1 to the last measure in your score which is noted in the upper right hand of the SET BLOCK window. When you are finished select DONE.

The other way to SET BLOCK is to use the numbers on the screens. Move the Current Measure to any measure but 1. Now press the button on the E: Set Block Box. Notice this measure number changes to the Current Measure number. This is easier when you want to quickly change your Block. You can do the same with the B: Set Block. Again keep in mind the End measure must always be equal or greater to the Begin measure. In this way you can actually see the measures you are setting the block to.

PLAY BLOCK AND LOOPING—To just play the selected measures chosen by SET BLOCK select PLAY BLOCK from the PLAYBACK menu. The Play Mode Indicator will appear and the measures selected will begin to play. The playing will end when either the end of the end measure is reached or the button is pressed. If you wish to loop either the selected measures or the whole score select LOOP ON/OFF from the PLAYBACK menu. If you open the PLAYBACK menu again you will notice that the ON is inverted instead of OFF. Now select either PLAY SCORE or PLAY BLOCK. The block or score will now repeatedly play until the button is clicked.

COPY, PASTE, ERASE, AND CUT BLOCK—COPY BLOCK is used to copy measures into the clipboard. When you select — from the EDIT menu, the measures selected by Set Block are copied into the clipboard buffer. If your Set Block is bigger than the clipboard (8K for 128K, 24K for 512K), you will get a "Buffer Full!" Error and the clipboard will be empty. The clipboard may be retrieved by selecting PASTE BLOCK from the EDIT menu. The PASTE BLOCK window will appear and ask you which measure you wish to paste at. The computer will then push everything down from the measure selected and insert the measures from the clipboard. This means that if you choose to PASTE your block onto measure 4, measures 1 through 3 will remain unchanged, your block will be inserted there, and measure 4 will continue after it. If the clipboard plus the score is more than the score buffer, then you will receive a "Buffer Full!" error and the score will remain unchanged. After using the PASTE command, the clipboard remains the same so you may put the clipboard in your score as many times as you like.

If you wish to remove measures from your score you may use **ERASE BLOCK** from the **EDIT** menu. **ERASE BLOCK** removes the measures in the set block and shifts over the remaining score. If the current, begin, and end measure numbers are higher than the new last measure after the erase, they will be moved back to the last measure.

If you are moving a measure you may select CUT BLOCK from the EDIT menu. Cut Block will cut the block out of your score and place it in your clipboard. Then you may PASTE the block anywhere you like. All the rules for COPY BLOCK and ERASE BLOCK apply. Remember, you can never get an entirely empty score by erasing. There will always be a last measure, generally blank, which holds the end-of-score marker. If you wish to totally eliminate your score, then choose the NEW SCORE option in FILE. Also remember that if you CUT or ERASE a block, you may cut out the end of a note that began in the last measure. If this happens, the note will appear to continue to play long after the note has diminished, but a looping voice will continue to play.

TRACK FUNCTIONS-You might have noticed that even though you were

playing one note at a time, the notes went in two different tracks. This is because your key pressing slightly overlapped. To free up one of the tracks you can use MERGE TRACK in the EDIT menu. MERGE TRACK will put the two tracks onto one. The window will appear and ask you which track you wish to merge onto which track. Change these numbers by placing the arrow on the number and depressing the button. When you are finished select DONE and the tracks in the Set Block will be merged. When voices overlap the old voice is turned off in place of the new one so the results may not be what you want. Play the block to see if it has changed much. It is suggested that you first copy the measures into the clipboard which you are about to merge. That way if the results are unacceptable it is easy to ERASE the bad measures and PASTE the old ones back. MERGE TRACK can also be used as a Move Track by Merging into an empty track. This can be used, for example, for making a back beat in Tracks 1 and 2 while using the metronome, merging the two together, and then copying (by merging) it into Track 4 for your beat instead of the metronome.

If one or both of the tracks are not to your liking you can erase them with **ERASE TRACK** in the **EDIT** menu. **ERASE TRACK** will remove the track you choose from the **ERASE TRACK** window in the set block.

COPY TRACK is mainly for volume. Since you have no control of how loud the sound will be, COPY TRACK will increase your voice over the rest of the other voices going on. COPY TRACK erases the track in set block about to be copied into and copies the source track into the new track. When viewed on the current measure screen, it two tracks will look identical. Again it is suggested to copy the block beforehand in case the results are undesirable.

SYNC TRACK is the most complex and least predictable of the Edit functions. When selected from the EDIT menu, SYNC TRACK takes the track chosen in the set block and compares the begin play and stop play markers to the metronome beats. If it is within 1/12 of a second either way of the metronome, it will align the start/stop marker to the metronome producing a more accurate score to the beat. Sometimes it works the way you want it, sometimes it doesn't. Therefore, it is strongly suggested you make a copy of the block in the clipboard before trying this. Another suggestion is when you

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are syncing a measure, sync the measure before and after it. This is so notes near the measure either before or after can be synced as well thus improving your results.

RECORDING BLOCKS—Recording into your score is a little different than when recording a new score. You now choose the measures you will be recording in using Set Block. If you have recorded something already in these measures that you wish to keep make sure you SET TRACK to other tracks as SoundTrax will erase the tracks in the measure you are recording over before you start. Now select RECORD BLOCK from the RECORD menu. Once you confirm the request, the Play Mode Indicator will appear and what you had recorded before in other tracks will play and your keyboard is now active so you may play along with it. The recording will end when either you reach the end block or you click the button on the mouse. To hear what you just recorded select PLAY BLOCK. The new recording is now incorporated into your score. If the Recording plus the score is too big, you will receive a "Buffer Full!" error and your score will remain unchanged. (NOTE: It is suggested for larger scores (i.e. over 8000 bytes) that you erase the tracks yourself before recording due to the delay time of cleaning up the score when you RECORD BLOCK. There will be a short pause after the Play Mode Indicator appears if it has to erase the tracks itself first.)

ADDING MEASURES—The problem with the method stated above is once you record the first time, you can't make the score any longer. To eliminated this problem select ADD BLOCK from the EDIT menu. It will ask you how many measures to add. Choose as many as you like. Notice if you look at inform the size of the score does not change. All you are doing is changing the end of score marker. Now you may record in these measures.

SAVING YOUR SCORE—Periodically, you may wish to save your score. It is wise to first save your configuration so you know it is the correct one for your score. Now select **SAVE SCORE** from the **FILE** menu. It will ask you for the file name. As with **CONFIG**, type in the 8 letter name of your score. After pressing save, it will verify the **CONFIG** you wish to use. Select **USE**. The score will then be saved if you receive no errors. You may save as often as you like and all saves will save over your old score.

LOADING YOUR SCORE—When you load your score the configuration and the voices are loaded as well so the score plays properly. If the config and/or the different voices are not on the same disk, the window requesting the new drive will appear. Select the proper drive or insert your disk and select the same drive. The score will then be loaded and played. We have included a sample score just to show you a possibility. It is title LOUIE.SCO on disk one of SoundTrax. Do NOT think that this is the best that one can produce with SoundTrax; this is just a sample we made and it was into the wee hours when we did it.

LOADING NON-SOUNDTRAX SOUNDS—If you wish, you may also import your own samples into SoundTrax. Any samples will do as long as they are no more than 16K in size. SoundTrax plays data at a constant 5.5KHz which enables easy conversion from MAC sounds. If your samples are not at that speed, they may not sound the same when played through SoundTrax. Also keep in mind they must have the .SND extension.

If you are using Oblique Triad's Studio Works TM, you may import the samples directly without converting the sample speed. SoundTrax will reduce it automatically to the proper speed. Keep in mind that the sound quality will marginally deteriorate by the reduced speed, but the sound will be played at the correct frequency. Again, be sure to change the extension to .SND.

For those of you wishing more SoundTrax sounds, call or write for information of future Sound Sample Disks.

#### TRICKS AND SECRETS...

- ... are no fun if you give them away. Ok, maybe a couple:
- You will note if you change the Time Signature or Tempo after creating a score, the current measure screen changes. That's because you redefine what the measure will be. This is helpful for odd types of syncing and for cutting off part of measures you don't like.
- This is more of a feature than a trick. If you save a configuration on the boot disk under the name *DEFAULT.CFG*, SoundTrax will boot up with that configuration. This is nice for not having to load it

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yourself after its booted up. You probably will have to change disks for the sounds however.

As you play more with SoundTrax you will find many other little nuances to amuse you. Enjoy your purchase. I would like to thank Tom Moertel for his gracious assistance in improving algorithms and helpful programming tips and Glen for finding enough time to put this together while trying to graduate.

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