T C B
T R A C K E R

ATARI

TCB TRACKER

REQUIRES D/S DRIVE COLOUR MONITOR

TCB TRACKER IS A 4 CHANNEL MUSIC SYNTHESIZER, DRUM MACHINE, AND MIXING STUDIO WHICH SUPPORTS STEREO SOUND* FOR THE ATARI

-TCB TRACKER-
BY
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DEVELOPED AT SEABEAR STUDIOS, STOCKHOLM, SWEDEN

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At MPH, we put a lot of effort into our software packages and tailoring them to work correctly on every computer system. If however, you do have any problems, then please contact us BY POST giving as much information as possible, so that we we are able to help solve your problems as quickly as possible. However, we only give technical support TO REGISTERED USERS so it is vital that you return your registration card to us.

USING -TCB TRACKER- FILES IN YOUR OWN PROGRAMS

If you wish to use -TCB TRACKER- files in your own programs, you are welcome to do so, on the condition that you acknowledge MPH's copyright.

A sentence like this acceptable...

"SOUND CREATED USING THE -TCB TRACKER- BY MPH"

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INTRODUCTION

Congratulations on purchasing the -TCB TRACKER-, the most advanced and most versatile software based, Music Workstation available for the Atari ST computer.

Until now, the best music on the Atari either sounded like the music used on the intro screen of the -TCB TRACKER-, or sampled music which eats memory and disk space. Now, it is possible to use the -TCB TRACKER- as an instrument to create sound modules of excellent quality.

This manual is designed to help you get the most out of the program and we urge you to familiarise yourself with the manual before undertaking too much work with the -TCB TRACKER-.

The -TCB TRACKER- is a very user friendly, and yet extremely powerful drum machine, sequencer, synthesizer and mixer. The sound generation capabilities of the -TCB TRACKER- include 16 independent voices (samples), each of which can be assigned to any of the 4 tracks. Each of these samples has its own volume and tuning control to give the maximum amount of flexibility over the final sound.

You will soon find out that your -TCB TRACKER- functions very effectively as a "tapeless studio". Unlike tape recorders, which record the actual sounds made by instruments, the -TCB TRACKER- sequencer records the digital controller information. So every time you play back a sequence it is a first generation performance.

Programming of the songs can be accomplished either in real time or by the means of the "step programming" method. This basically breaks down each beat into a series of steps, which can then be varied to suit the desired rhythm. The same method is used on professional drum machines.

The songs are created by playing on the Atari's typewriter keyboard or on a MIDI piano keyboard. Each sample is then stored into a "pattern". The -TCB TRACKER- can playback the 4 tracks simultaneously, and functions in many ways like a 4 track digital tape recorder. There can be up to 128 patterns in the -TCB TRACKER'S- memory and each pattern can hold 256 notes (64 notes on each track).

By constructing songs in this fashion, the -TCB TRACKER- makes it very easy to arrange songs by recording a verse into one pattern (or as many as you need), a chorus into another, and a bridge into another and then making a list of the patterns into a song with as many verses, choruses, breaks and bridges as you desire.

The -TCB TRACKER- has many editing capabilities which allow the user to alter

any of the data after recording it. Notes can be transposed, copied or erased and timing can be corrected. Whole patterns and tracks can also be copied and modified. Even with all this flexibility, the -TCB TRACKER- is very easy to use, since these features do not get in the way of the more basic operations like recording and playing back.

INSTALLATION

The first thing to do, is to make a backup of the original program disk that comes with the package. You can copy the disk to another 3.5" floppy disk or to a hard disk. If you are not familiar with this procedure, consult your Atari ST Operation Manual. The program comes on a double sided, unprotected disk for your convenience.

IMPORTANT NOTE

This disk is not copy protected for YOUR CONVENIENCE. It is illegal to make copies of this disk that are NOT for your OWN use and you will be liable to prosecution should you infringe this copyright.

THE FILES ON THE DISK

Your backup disk should contain the following files:

TRACKER.PRG	The program file.
SAMPLES.SPL	Folder
*.SPL	Separate sampled instruments.
SONGS.SPL	Folder
*.SNG	Song files containing the music without the samples but with information about the used samples.
MODULES.MOD	Folder
*.MOD .	Modules. A complete set of samples and a song.
DESKTOP.INF	You should know by now what this is...
READ ME	This file contains the latest information about the version of -TCB TRACKER- supplied and any additions to the manual.
REPLAY TRACKER.GFA	A GFA BASIC routine for the Atari STFM to play -TCB TRACKER- modules from your own program.
TRACKERE.GFA	A GFA BASIC routine for the Atari STE to play -TCB TRACKER- modules from your own program.

TRACKER.S	An assembler routine for the Atari STFM to play -TCB TRACKER- modules from your own program.
TRACKERE.S	An assembler routine for the Atari STE to play -TCB TRACKER- modules from your own program.
TRACKER.ROT	The module playing routine for the Atari STFM that you call from your own programs.
TRACKERE.ROT	The module playing routine for the Atari STE that you call from your own programs.

The -TCB TRACKER- runs on any Atari ST/STE computer with at least 512K of RAM. It works with the Atari colour monitor or any other colour monitor or TV in low resolution. Monochrome monitors are not supported in this version of the -TCB TRACKER-. If you do not use a hard disk, we recommend that you save your work on a separate disk, and not on the program disk.

You cannot use the -TCB TRACKER- with any Accessory programs as all normal GEM functions are disabled. MPH can in no way guarantee the use of the -TCB TRACKER- together with any Accessory or other type of utility program.

SOUND EQUIPMENT

The easiest way to listen to the -TCB TRACKER- is through the TV/monitor speaker. But this by no means the best way to listen to the music. Try to use a HiFi for better sound quality. Many modern TV/monitors have separate audio outputs. Connect these to the AUX input on your HiFi. If you have got an Atari STE, connect the phono stereo audio outputs on the rear panel direct to the AUX stereo input on your HiFi.

SUPPORT

Here at MPH, we are continually striving to make this product better. If you have any suggestions on how we can improve this program then please write to us (stating your registration number) and giving us details about your suggestions. We shall also be setting up a special user group for the users of the -TCB TRACKER-.

More details about the user group can be found elsewhere in the package.

YOUR FIRST LESSON

PLAYING AROUND WITH THE -TCB TRACKER-

The best way to get familiar with the -TCB TRACKER- is to load a module into the computer. Click on "MODULES" to the left of the screen, (if it is not already highlighted), and then click on "LOAD" (or simply press [9] on the numeric keypad). The file selector has now appeared showing a list of the modules on the disk. Select one of the modules and click on the "YES" box or press simply press [RETURN]. When the module is loaded into memory click on "EXIT" on the right hand side of the file selector. Now, click on "PLAY" or press [ENTER] on the numeric keypad and you will hear the music play. Click on "STOP" or press [0] on the numeric keypad and the music will stop. Loading and playing all other modules is done in the same way.

Click on "STOP" and activate the monitor (MON) by pressing [ALT] - F1. Monitor mode ON is displayed down to the right of the screen. Play on the keys on the keyboard. Change instruments, "samples", by clicking on the arrows to the left of the "SAM#" marker or press the right mouse button. Listen to the different sounds by pressing some of the keys on the typewriter keyboard.

Press [ENTER] again and play the song. Click on the track buttons [1], [2], [3] and [4] on top of the left side. In this way you can select which tracks you listen to.

Activate all tracks again and move over to the right hand side of the screen. Now we shall change the tempo of the song by clicking on the arrows beside the tempo marker "TEMP". Click on the up arrow and the tempo will increase. Click on the down arrow and the tempo will decrease. Notice that the pattern "PATT" and position "POS" markers change as the song plays. Let's activate the CYCLE mode by pressing [ALT]-F2. CYCLE mode ON is displayed down to the right of the screen. This makes the chosen PATTERN play over and over again. Play and analyse the selected pattern. Look at how it has been constructed. Move on to the next pattern and examine that in the same way. Click on "STOP". Now, it's time to STEP through a pattern. Just press the DOWN ARROW on the keyboard once. Press it again... Every time you press the down arrow, the -TCB TRACKER- moves one step ahead. Listen to the different instruments. Press the UP ARROW and you will take one step back. Press the LEFT and RIGHT ARROWS and the cursor is moving sideways to the other TRACKS. This is the technique that you will use when you compose your own songs. It's called "STEP PROGRAMMING". This is also the method that you use when you examine a pattern in slow motion.

MAKING YOUR OWN MUSIC

First, format a disk... then load the file TRACKER.PRG into the computer. Make sure that both the PATTERN and POSITION indicators (top right of the screen) are set to 00.

The first thing to do is to load some instruments or "samples" into memory. To do this, press [8] on the numeric keypad or click on "SAMPLE" to the left on the screen, followed by "LOAD". The file selector will now appear showing a list of the samples on the disk. Select one of the samples and confirm your choice by clicking on the "YES" box or by pressing [RETURN]. Start off with your favourite HiHat on sample 0. Don't exit the file selector box just yet. Instead click on the up arrow by the sample marker, "SAM#", or press the right mouse button once so that the sample marker is set to 1. Now load a BassDrum into sample 1. Continue by Loading a SnareDrum into sample 2, a Bass into sample 3 and a melody instrument (Trumpet, Sax or Synth) into sample 4. For now, we shall just use these five instruments so exit the file selector box and activate the CYCLE mode by pressing [ALT]-F2.

The best way to start recording is to use the HiHat as a metronome (clock). Place the cursor on TRACK 1 by using the arrow keys. Make sure the STEP COUNTER is set to 00 (The first note in the pattern). Select sample 0. Activate the MONITOR by pressing [ALT]-F1 (You must hear what you are playing). Now, turn up the volume on your monitor / TV / HiFi and press any key... for instance [M]. Did the HiHat sound normal? Was it to high? Try [N], [B], [V], [C], [X] or [Z]. Was it to low? Try [Q], [W], [R], [T], [Y] etc. Play around and get accustomed to the keyboard. When you have found a note that you like, activate the RECORD button and press that key once again. Congratulations! You have just recorded your first note in the -TCB TRACKER-!

Some letters and numbers have appeared in the TRACK 1 area to confirm that you have written a note. Don't worry about these for now as they shall be explained in detail later. Press [SPACE] and a pause is inserted. Press your chosen key again and continue with key/space/key/space/key/space... until you have written the first pattern in TRACK 1 (that is when the notes are coming back again after step 3F). Click on "PLAY" or press [ENTER] on the numeric keypad and you should now be hearing the HiHat playing. Change the tempo to your taste by clicking on the arrows beside the "TEMP" marker to the right on the screen.

Stop the music and turn the RECORD mode OFF. Select sample 1, the BassDrum, and choose the best sound as before. This time, go to TRACK 2 and turn the RECORD mode ON again. Enter a BassDrum at STEP 00 in TRACK 2. Press SPACE three times. BassDrum. SPACE three times. BassDrum. SPACE three times.

BassDrum... and so on until you come back to STEP 00 again. Once again, turn the RECORD mode OFF and listen to the beat.

O.K, stop the music and select Sample 2, the SnareDrum, and calibrate the sound in the same way as before. Turn the RECORD mode ON but remain in TRACK 2. Move forward with the cursor to STEP 04. If everything is as it should be, you will have a BassDrum at the current STEP. Press the SnareDrum key and change the note from the BassDrum to a SnareDrum. Change every second BassDrum to a SnareDrum until you come back round to STEP 00 again. As always, turn the RECORD OFF and listen to how your masterpiece is coming along.

If you have navigated correctly until now, you should have a standard 4/4 rock beat. Get your newly formatted disk and SAVE the MODULE. To do this, highlight the word "MODULE", and then press "SAVE". Pressing [6] on the numeric keypad does the same thing. Click on "YES", if all is OK, and write TEST in the File Selector. Press [RETURN]. The first part of your masterpiece is created and saved to disk. Turn the computer off and have a well deserved tea break!!!

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Welcome back! Turn the computer on again and load the -TCB TRACKER-. Load your module TEST... and let us continue.

The first thing to do is to make the rhythm a little more exiting. We shall continue to use the STEP PROGRAMMING METHOD again, adding just one sample at a time. Let's start off with the BassDrum (BD). In TRACK 2, add a BD at STEP 07, 16, 17, 27, 37, and 3E. Don't forget to activate the "RECORD" button! Click on "PLAY" and listen. A lot better...isn't it? In the same TRACK, add a SnareDrum (SD) at STEP 3A and 3D. Listen. Nice ending!

The HiHat (HH) is too loud. Let's change the volume. Select sample 0. Click on the DOWN ARROW to the left of the "VOL." marker at the right side of the screen. Turn the volume down to 60. Confirm the changes by clicking on the VOL. button in the middle section. Still too loud? Change it down to 50. Now, that's better. This time, we are going to SAVE SONG. To do this, highlight the word SONG on the left of the screen and then press "SAVE" or just press [4] on the numeric keypad. Click on "YES", if all is OK, and write TEST2 in the File Selector. Press [RETURN]. The second part of your masterpiece is created and saved to disk. Time for another five minute coffee break!

Let's add the Bass on TRACK 4. Play a C2 [,] on STEP 00, 03 and 06, an A1 [N] on STEP 10, 13 and 16, and play an F1 [V] on STEP 20, 23 and 26, a G1 [B] on STEP 30, 33, and 36. Listen... I think we've heard this before!

Now all you have to do is to add the melody instrument on TRACK 3, change the bassline a bit, add a note here and there and play around with the HiHat... and

suddenly... it's a true masterpiece! SAVE SONG as TEST3. Call your friends and open the -TCB TRACKER- DISCO! From now on, you are on your own. To Compose the music of your dreams, the -TCB TRACKER- is your instrument.

We have deliberately left track three empty because we can't 'spoon feed' you or think up your master pieces all the time. If you have had any trouble creating this test song, then we recommend that you go back to the start and try again, because becoming familiar with the editing procedure of the -TCB TRACKER- is vital if you do not have a MIDI keyboard as this is the main way of creating the songs. Even if you do own a MIDI keyboard, then you will still need to understand the step programming method because you will need this to tidy up the song. Once you get proficient with editing in the step programming method, then you can use the -TCB TRACKER- to compose all your music.

EVERY -TCB TRACKER- FUNCTION IN DETAIL
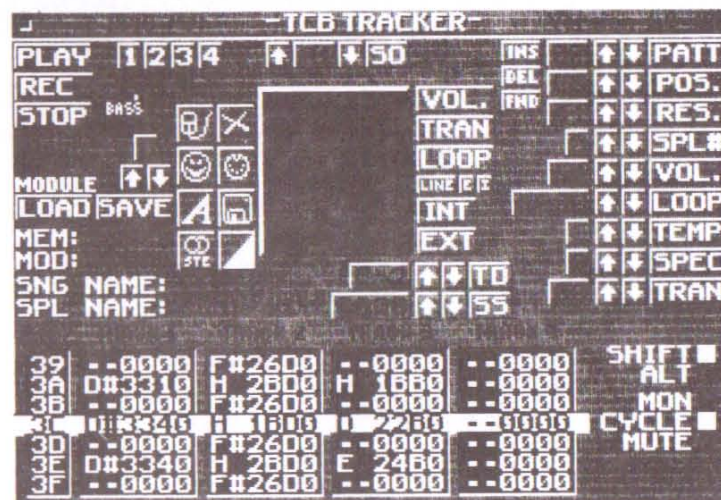
-TCB TRACKER- SCREEN

THE LEFT SIDE

THE COMMAND BUTTONS

PLAY
This button acts like the PLAY button on a tape recorder. Click on it and the song will start playing.

REC
This button acts like the RECORD button on a tape recorder. In RECORD mode you can enter notes in any pattern with any sample. Every time you press a note key, the STEP counter will advance one step and a note is written in the TRACK display. If you use the SET OFFSET utility in the preset factory, you can alter the step rate for the STEP COUNTER. The default value is 01, but if you set it

to 2, then the sample will only be RECORDED every two steps. If you set it to 4, then the sample will be recorded every fourth step etc. By using this, the timing will always be perfect. See SET OFFSET (SO) Be careful with this button, as it is very easy to destroy your work by mistake, if you forget to turn RECORD off after a successful recording.

While most programming is done using the step method, it is also possible to program in real time by a tap method. First click on RECORD then PLAY. Sometimes it may be easier to use this method when the rhythm is running fairly slow so that synchronization is easier.

STOP

This button acts like a stop button on a tape recorder. Clicking the "STOP" button will stop playing a song or stop recording a pattern in real time.

LOAD SONG

Load a song from disk. First click on SONG, then click on "LOAD". The song files are containing complete songs but not any samples. This is because you can save a lot of space on disks as you can use the same samples in different songs. The song files uses a fraction of space on the disk compared to modules.

LOAD SAMPLE

Load a sample from disk. First click on SAMPLE, then click on "LOAD". A sample is the instrument, voice or sound you use in your composition.

LOAD MODULE

Load a module from disk. First click on MODULE, then click on "LOAD". A module is a complete set of samples and a song.

SAVE SONG

Save a song to disk. First click on SONG, then click on "SAVE".

SAVE SAMPLE

Save a sample to disk. First click on SAMPLE, then click on "SAVE".

SAVE MODULE

Save a module to disk. First click on MODULE, then click on "SAVE".

DISK DRIVE

To the right of the SONG, SAMPLE and MODULE signs are three small buttons located. One UP, one DOWN ARROW and a LETTER BOX. This letter box is showing the current disk drive. If you have got an hard disk or an extra disk drive, you can choose whatever drive or directory you use by these arrows. You don't have to leave the file selector to change disk drive, of course.

-TCB TRACKER- FILE SELECTOR
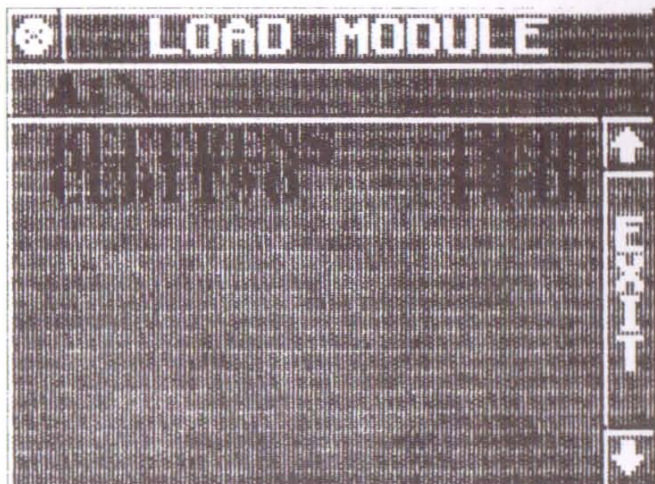
The -TCB TRACKER- has its own custom version of the Atari GEM file selector. Here you can choose to SAVE or LOAD a SONG, a SAMPLE or a MODULE. The command that caused the file selector to appear is displayed on top. Click on a file and a YES/NO alert box will pop up.
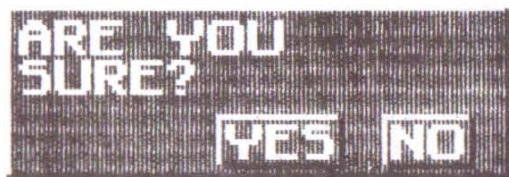
One of the main differences between the standard GEM file selector and -TCB TRACKER- file selector is that you can alter any value or activate any button on the main screen while the -TCB TRACKER- file selector is being displayed. This method gives a big advantage when you want to load or save many samples at the same time. For instance, you can load a HiHat on sample 1, click the right mouse button, load next sample and so on. You can even listen to the new sample without leaving the file selector. The only way to leave the file selector is by clicking on the EXIT sign to the right. A filename is made up of a maximum of 8 characters for the name and 3 characters for the file's extension. You don't have to worry about the last 3 characters because the -TCB TRACKER- automatically adds them in for you: i.e "SNG" for song, "SPL" for sample and "MOD" for module. You will never see the file extensions in the -TCB TRACKER- file selector, but you can find them on the disk in the directory of the GEM desktop. The -TCB TRACKER- only identifies files with the correct extensions i.e. "SNG", "SPL" and "MOD". Files with other extensions will not be displayed in the -TCB TRACKER- file selector. If you try to load a file with the correct extension, but with the wrong format (i.e, old -TCB TRACKER- or Amiga.MOD files), then the background will turn red and an error message will appear.

Press [SPACE] to exit the box.

When you want to enter a new name, click on the top line in the the file selector and a cursor will appear. You can now type the file name of the file you wish to load/save.

The -TCB TRACKER- will only recognise folders with "SNG", "SPL" and "MOD" extensions that are placed in the root directory. To exit a folder, you must click on the close box in the top left of corner of the file selector.

THE INFORMATION FIELD

MEM
This MEMORY field contains information about how much free RAM you have got in the computer at the moment.

MOD   This field contains the information about how much
             RAM the current MODULE uses at the moment.
             The files on the disk and the files in memory may
             vary about 1K, because of the special data layout
             in the memory of the -TCB TRACKER-.

SNG NAME   This field contains the current SONG or MODULE
             name.

SPL NAME   This field contains the current SAMPLE name.

THE TRACK BUTTONS

1 2 3 4   These buttons on the left side, under the MPH logo,
             control which tracks are active. The default setting
             is all tracks on. Click on the track you want to turn
             off. Click it once more to turn it back on again. In
             stereo mode tracks 1 and 4 are assigned to the left
             channel (L) and tracks 2 & 3 are assigned to the
             right channel (R).

THE CLOSE BOX

EXIT   Click on the Close Box on top of the left side to
             EXIT the -TCB TRACKER- and return to the GEM
             desktop. An alert box will ask you to confirm that
             you want to quit, in case you clicked on there by
             mistake.

THE TONE CONTROLLERS

BASS   Click on the BASS sign and move the cursor in the
             tone meter to alter the amount of BASS. This only
             works on the STE.

TREBLE   Click on the TREBLE sign and move the cursor in
             the tone meter to alter the amount of TREBLE. This
             only works on the STE

THE ICON MENU
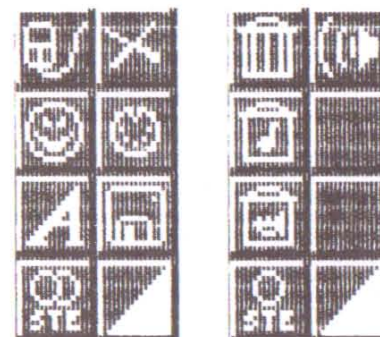
MOUSE EDIT   You usually operate the cursor in the Track Display
             by using the arrow keys on the keyboard. As you
             become more experienced or if you like to use the
             mouse to speed up the cursor movement, then
             click on this icon. In MOUSE EDIT mode you can
             operate the cursor in turbo speed.

HELP   If you are unsure of any command or any keyboard
             shortcuts, then click here or press the help key.

AMIGA   The -TCB TRACKER- uses a sampling resolution of
             10 KHz. The Amiga samplings only uses 8.3 KHz.
             When you play a converted Amiga module in the -
             TCB TRACKER-, the pitch will be too high so all
             samples will sound like Donald Duck. The remedy

is to activate this icon. This will bring the -TCB TRACKER- down to the Amiga level. The effect is almost like pressing the Dolby button on a tape recorder.

STE MODE

Select this icon if you have got an Atari STE. This will turn the -TCB TRACKER- into STEREO mode. Notice that the volume falls when you activate this icon. Be careful when you change back to MONO again. It's easy to blow up the speakers. If you do not have have an STE, then this icon will have no effect.

DRUM EDIT

In DRUM EDIT mode the -TCB TRACKER- turns into a real drum machine. It is now possible to access all of the 16 samples from the keyboard. In this mode each sample is assigned to a special key:

SAMPLE NO	KEY		NOTE
Sample 0 =	Z	or	C1
Sample 1 =	X	or	D1
Sample 2 =	C	or	E1
Sample 3 =	V	or	F1
Sample 4 =	B	or	G1
Sample 5 =	N	or	A1
Sample 6 =	M	or	H1
Sample 7 =	,	or	C2
Sample 8 =	.	or	D2
Sample 9 =	/	or	E2
Sample A =	Q	or	F2
Sample B =	W	or	G2
Sample C =	E	or	A2
Sample D =	R	or	H2
Sample E =	T	or	C3
Sample F =	Y	or	D3

In this way you can for instance play Bass Drum on the "Z" key, Snare Drum on the "X" key and HiHat on the "C" key at the same time. The default note for all samples is set to C2. This will of course not suit all sounds. To change the note, please use TUNE DRUMS (TD) in the Preset Factory. After using DRUM EDIT, you can continue working with your music in normal mode again.

MIDI

Click on this icon to activate MIDI when you want to use a MIDI keyboard to enter the notes, instead of the Atari keyboard. Connect the MIDI OUT port on your keyboard to the MIDI IN port on the Atari computer. A C2 on the MIDI keyboard corresponds to a C1 in the -TCB TRACKER-.

It is possible to use the -TCB TRACKER- as a slave sequencer, as it can read MIDI clock. Connect your keyboard (or any other instrument that sends MIDI clock) to the -TCB TRACKER- and let it play in sync. Also see MIDI KEYBOARD and MIDI CLOCK sections.

DISK INFO

This icon gives information about remaining disk space in kilobytes of the current disk drive.

TOGGLE ICONS

Click here to discover seven new icons. Click again to return to the original set.

NEW

To clear all of the -TCB TRACKER-'s memory and reinitialize its variables, click on the NEW icon. This command will erase the SONG, the MODULE and all SAMPLES from the computer's memory.

CLEAR SONG

Click on this icon to delete a song from the computer's memory. The samples will be left intact.

CLEAR SAMPLE

Click on this icon to delete a sample from the computer memory. This command will not clear all samples, just the current sample showing in the information field.

STEREO MONO

Toggle the stereo mode ON / OFF on the Atari STE. If you have not got an Atari STE, then this icon will have no effect.

LOUDNESS

This icon will work on any Atari ST in 'normal' mode (STE mode off). When this icon is activated, it makes the sound louder, brighter, and in some cases, noisier.

RESERVED

Not used in this version of the ·TCB TRACKER·.

THE MINI BUTTONS

INS

Click this to INSERT a PATTERN at the current POSITION.

DEL

Click this to DELETE a PATTERN at the current POSITION.

FND

Click this to FIND the next empty PATTERN.

THE MODE INDICATORS

SHIFT   Toggle SHIFT ON / OFF with the [SHIFT] key

ALT   Toggle ALTERNATE ON / OFF with the [ALT] key. If both the [SHIFT] and the [ALT] keys are active, then the [SHIFT] key will take priority.

MON   Activate the monitor when you want to listen to the recorded samples at the current STEP. Move the cursor up and down with the arrow keys to move forwards and backwards in the song. Toggle the MONITOR mode ON/OFF by pressing [ALT]-F1.

CYCLE   This button locks the chosen PATTERN into a CYCLE. The PATTERN will play over and over again. The position and the restart markers are both disabled. Toggle the CYCLE mode ON/OFF by pressing [ALT]-F2. The CYCLE mode is perfect to work with when you compose a song. This is especially helpful if you like to record in real time with the tap method.

MUTE   Activate this indicator if you want to MUTE the SPECIAL effects in the PATTERN or the entire SONG. If this indicator is on, then all values set by using the SPECIAL command will be disabled. The SPECIAL values will not disappear for good, they will only be hidden for as long as the MUTE is on. SPECIAL "D" will not be muted as it has no effect. Toggle the MUTE ON / OFF by pressing [ALT]-F3.

Also see SPEC in the Marker section.

THE MIDDLE SECTION

VOL   Click here to confirm any VOLUME changes made in the Marker Section.

TRAN   Click here to confirm any TRANSPOSE changes made in the Marker Section.

LOOP   Click here to confirm any LOOP changes made in the Marker Section.

LINE E I   Click this button to toggle the LINE ON/OFF. The default setting for this is off. Turn the LINE on if you want to check the sound level or impress those around you. The micro button "E" stands for EXTERNAL and micro button "I" stands for INTERNAL.

               The micro buttons sets which sound source triggers the line. Setting the line to INTERNAL is used when you want the -TCB TRACKER- to trigger the line. Select EXTERNAL if you want to trigger the line from an outside source. Use the ST REPLAY cartridge to trigger the outside source.

INT   The CENTRAL GLOBE DISPLAY is triggered by the INTERNAL source. This is the way to "see" the sounds in the -TCB TRACKER-. If something is moving in the display but you can't hear anything, then you may have a sound problem. The default setting for the GLOBE is ON.

EXT   The CENTRAL GLOBE DISPLAY is triggered by the EXTERNAL sound source. To get an outside sound into the -TCB TRACKER- you MUST use the ST REPLAY cartridge. Also see LINE E I.

THE PRESET FACTORY

TD (TUNE DRUMS)   The drum factory is open when you are in DRUM EDIT mode. This sets all the drums to the note of your choice. First pick the sample you want to tune, and then click on the TD arrows to get the right sound. Verify the changes by pressing the aligned key (please consult the list in the DRUM EDIT section). When you are satisfied with the sound, move on to the next sample and continue in the same way. When you have tuned all the samples, you have got a complete drum set at your fingertips. Clicking on the TD sign and the data is set to normal (C2).

SS (SET SPECIAL)   Use this utility if you want to change the default settings on the SPECIAL marker. Using this, it is possible to change the direction and speed of the PITCH BEND effect.

                    Slow down 0000 - 7FFF Speed Up
                    Slow down FFFF - 8000 Speed Up

                    You can also use Special effect "B" by changing the value to 02. Click on the SS sign and the data is reset to the default value. Also see SPEC in the MARKERS section.

SET OFFSET   This works with the COPY TRACK WITH OFFSET command ([ALT - F4]) and RECORD. When you alter the SET OFFSET to 02, then the -TCB TRACKER will record every second step. When you set the OFFSET to three, then the -TCB

TRACKER- will record every third step etc. Clicking on SO sign will reset the offset to the default value. Also see COPY TRACK WITH OFFSET

THE TRACK DISPLAY

The TRACK DISPLAY is your workbench. This is where you can see all of the entered data. The display contains most of the SONG information that will be saved to disk. You can move the CURSOR in the display with the arrow keys on the keyboard. You cannot work with the mouse by "pointing and clicking" in this area in the normal way (also see MOUSE EDIT).

To the far left the STEP COUNTER is located. The remaining area is occupied by the TRACK INFO. The TRACK INFO is arranged in the following order on each STEP: NOTE-(SHARP)-OCTAVE-KEY-SAMPLE-SPECIAL.

The FIRST letter is the NOTE (C,D,E,F,G,A,H).

The SECOND character is the SHARP sign "#"... A half note up. (#,-)

The THIRD figure is the OCTAVE number (1,2,3).

The FOURTH figure is the KEY number (0,1,2,3,4,5,6,7,8,9,A,B)

The FIFTH figure is the SAMPLE number... (0,1,2,3,4,5,6,7,8,9 A,B,C,D,E,F)

The SIXTH figure is the SPECIAL effect number (0,1,2,3,4,5,6,7,8 9,A,B,C,D,E,F)

Example 1:

F-1580   This is an "F" note in the first octave played with sample 8 and no special effect is used.
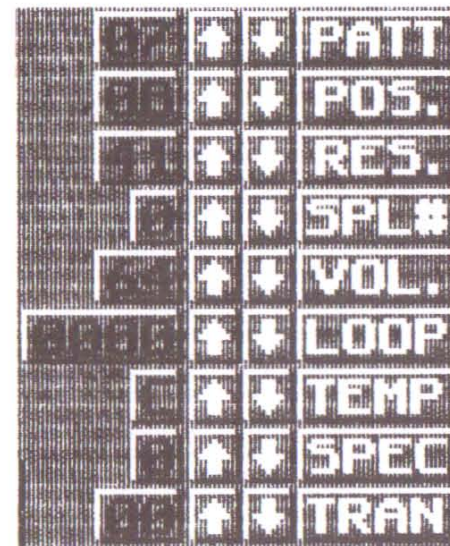
Example 2:

C#21AD   This is a "C#" note in the second octave played with sample A and special effect D is used.

In the TRACK DISPLAY, the active STEP is located in the middle in inverse video. You can see three steps behind and three steps ahead of the current step.

THE RIGHT SIDE

The Markers:

PATT

POS

Choose the PATTERN you want to play or record. It is possible to write as many as 128 different patterns in the same song. (HEX 00 - 7F). 64 STEPS is the default length of an empty pattern. You can change the length of the pattern by using the SPECIAL marker but that is explained in the explanation of SPEC. The up/down arrows are used to select a PATTERN. All PATTERN changes are effective as soon as they are entered. Clicking on the "PATT" sign resets to the the PATTERN to the default 00.

Choose the POSITION that you want the pattern to be played in. It is possible to enter 128 different POSITIONS in the same song. (HEX 00 - 7F). The default setting is 00, which is the song start. All songs start at POSITION 00 and increases one step ahead for every new PATTERN. With the

POSITION marker you decide in what order the PATTERNS will be played. First determine the POSITION you want, then set the PATTERN number. After that, move the POSITION one step ahead and choose the next PATTERN of your choice. To see if you have got the order in the way you desired, set the POSITION marker to 00 (song start) and click on the "POS." up arrow. Now you shall see the different PATTERN numbers change when you let the POSITION numbers increase.

The up/down arrows are used to select a new POSITION. POSITION changes are effective as soon as they are entered. Click on the "POS." sign and the POSITION number resets to the default value.

RES

Set the RESTART position by this marker. If the last pattern in the song is played at, let's say position 12, you should set the RESTART position to 13 if you want the song to loop. If you want a real end, use an empty pattern at position 13 and set the restart position to 14. After the RESTART position the song will continue at position 00 again. The up/down arrows are used to select a new RESTART position. RESTART changes are effective as soon as they are entered. Click on the "RES." sign and the RESTART position resets to the default 00.

SPL#

Choose the SAMPLE you want to play or record. You can load up to 16 different samples in one module. (HEX 0 - F). The up/down arrows are used to select a new SAMPLE. SAMPLE changes are effective as soon as they are entered. Click on the "SPL#" sign and the chosen SAMPLE resets to the default 0.

VOL

Set the VOLUME on each sample with this marker. There are 128 volume levels (HEX 00 - 7F). The default setting is 7F (very loud). The up/down arrows are used to select a new VOLUME. However, VOLUME changes are not effective as soon as they are entered. You must confirm any

changes by clicking on the "VOL." button in the middle section. This is to spare the CPU from unnecessary mathematical calculations. Use the VOLUME marker to get a satisfying mix. Click on the "VOL." sign and the VOLUME resets to the default level.

LOOP

The LOOP function triggers the sample to play continuously. Use this function when you want a sound to continue longer than the actual sample. You have got 65536 different values to choose from (HEX FFFF). The up/down arrows are used to select a new LOOP position. LOOP changes are not effective as soon as they are entered. You must confirm the changes by clicking on the "LOOP" button in the middle section. Click on the "LOOP" sign and the LOOP value resets to the default 0000.

MORE ABOUT LOOPING

After making a sample it is often necessary to loop (play over and over) a portion of the sound so it can be sustained indefinitely when the key is held down. Getting a good loop tends to be the most difficult part of sampling. One of the fundamental challenges of sampling is to make efficient use of the computer's memory. You simply cannot sample the entire duration of every event. Plus, you usually want a sound to continue playing, regardless of how long the original event was. This is why we use LOOPING.

When we loop a segment of sound, what we are doing is playing a sample through to the end and then instantly starting back at the beginning of the loop, as if playing one continuous sound. It is similar to a segment of recording tape with the two ends spliced together so that it cycles repeatedly.

Let's assume that a low note on a grand piano can last up to 30 seconds from the time the key is struck to the time it decays into silence. Sampling this entire event does not make sense because you could use up all your computer's memory on this one note, leaving no memory for other samples. This is not only a problem for the -TCB TRACKER- and Atari computers, but for professional samplers costing over £3000.

When you loop a sample, it is important that the beginning and end of the loop match up to form a continuous wave shape. Otherwise the loop will pop or click

each time it reaches the splice point. For this reason, the best loop points are those which occur where the wave crosses the zero line and where the direction of the wave at the start of the loop matches that at the end of the loop.

The best way to find out if a loop is right for a given sound is to try it and see how it sounds. Some sounds are easy too loop. Other sounds seem to defy all attempts to find a good loop. Especially difficult to loop are those sounds whose timbre and volume change radically over time. In fact, the best way to learn about looping, is to experiment with moving the loop start around and listening to the results.

TEMP   Click here to change the TEMPO of a pattern or song. The up/down arrows are used to select a new TEMPO. TEMPO changes are effective as soon as they are entered. Clicking on the "TEMP" sign resets the TEMPO to the default beat A.

SPEC   This is the SPECIAL effects marker. 16 numbers can be entered (HEX 0 - F). The default setting is 0.

THE SPECIAL EFFECTS LIST

0	Normal / Off
1 - A	Pitch Bend (10 different default settings)
B	Interrupt sample
C	Continue sample after interrupt
D	End Pattern
E	Reserved
F	Reserved

When the SPECIAL effect is set to "0", no effect is written at the current STEP, in the current TRACK. This works like MUTE ON, in the Mode Indicators area. The effects is turned off.

If you set the SPECIAL effect to "1", a PITCH BEND effect will be activated. This effect is determined by what values you have entered in the Preset Factory on the SS (SET SPECIAL) marker. You can use the default settings or set up to 10 new Pitch Bends (HEX 1 - A) by yourself. A Pitch Bend will smoothly glide a note up or down, fast or slow. It's up to you to decide the direction and speed.

Choose SPECIAL effect "B" if you want to interrupt a sample at the current STEP, and store the remaining sound in memory. Only the first section of the sample will be played. If you use SPECIAL "B" together with a SET SPECIAL (SS) value of 02, then the sample will not be interrupted. Instead, it will be played as usual, but the remaining sound will be stored in memory. To continue the sample, pick SPECIAL.

effect "C". This method will create an echo or a gap in the music depending on how many steps the interrupt is active.

SPECIAL "D" is no effect, it just ends the current PATTERN at the STEP of your choice. This is great for an intro, an ending, a short fill or anything else you want to create, that will not engage all 64 steps in the pattern. SPECIAL "D" is also the major tool to use when you want to compose a song outside the common 4/4 beat. Compose a waltz in 3/4, a samba or a complicated jazz rhythm in 7/5 or 13/4... any time signature is possible to construct with the SPECIAL "D" marker. Just count the steps...

After the SPECIAL "D" marker is executed the pattern will cycle or continue with the next pattern in the song. The up/down arrows are used to select a SPECIAL number. SPECIAL effect changes are effective as soon as they are entered, if the MUTE indicator is set to OFF. Also see MUTE in the Mode Indicators section and SS in the Preset Factory. Clicking on the "SPEC" sign and the SPECIAL effect resets to the default value.

TRAN   TRANSPOSE the current sample up or down one octave in half note steps. This is the way to change the key of the music when you have mixed samples that have not been sampled in the same key. The up/down arrows are used to select a new key. TRANSPOSE changes are not effective as soon as they are entered. You must confirm the changes by clicking on the "TRAN" button in the middle section. Click on the "TRAN" sign and the TRANSPOSE changes resets to normal.

THE KEYBOARD

KEYBOARD SHORTCUTS - Many commands, which appear in both the screen and keyboard section, are described more elaborately in the screen section.
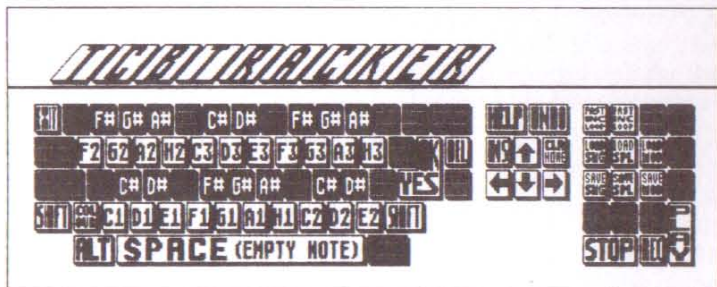

THE CURSOR KEYBOARD

[HELP]	Press the [HELP] key if you are stuck.
[INSERT]	Press the [INSERT] key if you want to insert a space (empty note) at the current STEP. This command moves all notes one step forward in the active TRACK. Please note that the last note in the TRACK, in the operative PATTERN will be lost at every insert moment.
[DELETE]	Press the [DELETE] key if you want to delete a note or space at the current STEP. This command moves all the notes one step back in the TRACK, in the operative PATTERN.
[CLR HOME]	Press the [CLR HOME] key if you want to go to the beginning of the song (POSITION 00).
[UNDO]	The Undo command allows you to directly undo a

number of functions. You can undo your last action by pressing [UNDO] on the computer keyboard. This is very helpful when something doesn't turn out as intended. Remember that it is only the last action that can be undone. If something strange happens as a result of a command or a procedure, don't do anything to try to repair it before you try to Undo.

[ESC]	Press the [ESC] key to EXIT -TCB TRACKER- and return to the GEM desktop. An alert box will appear before returning you to the desktop to confirm that you actually want to leave the -TCB TRACKER-

THE NUMERIC KEYPAD
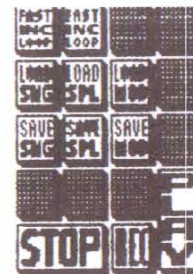
[ENTER]:-	PLAY	This button acts like the PLAY button on a tape recorder. Press ENTER and the song or pattern will start playing.
[.]	RECORD	This button acts like the RECORD button on a tape recorder. Press (full stop) and ENTER and you can use the tap method to record in real time.
[0]	STOP	This button acts like a STOP button on a tape recorder. Pressing the "0" button will stop playing a song or stop recording a pattern in real time.
[4]	SAVE SONG	Save a song to disk.
[5]	SAVE SAMPLE	Save a sample to disk.
[6]	SAVE MODULE	Save a module to disk.
[7]	LOAD SONG	Load a song from disk.

[8] LOAD SAMPLE   Load a sample from disk.

[9] LOAD MODULE   Load a module from disk.

OPEN BRACKET   Fast increase the LOOP values.

CLOSE BRACKET   Fast decrease the LOOP values.

THE FUNCTION KEYS

F1 CUT TRACK   CUT a TRACK from the active pattern into the - TCB TRACKER-'s buffer. When you use this command the TRACK will be deleted. To get it back again in the same place, just press F2 to PASTE it.

F2 PASTE TRACK   PASTE a TRACK in the same pattern or any pattern in the song. It is also possible to paste the TRACK to another MODULE or SONG. Before you PASTE a TRACK you must CUT it with F1.

F3 CUT PATTERN   CUT a PATTERN to the -TCB TRACKER- buffer. When you use this command the PATTERN will be deleted. To get it back again, just press F4 to PASTE it.

F4 PASTE A PATTERN   PASTE a PATTERN anywhere in the song. It is also possible to paste the pattern to another song or module.Before you PASTE a PATTERN you must CUT it with F3.

F5 OVERLAY TRACK   To OVERLAY a TRACK is almost the same as mixing two tracks together. OVERLAY TRACK is another way to PASTE. First CUT the TRACK as usual with F1. Then press F5 to OVERLAY the TRACK. A normal PASTE will wipe out all the existing notes in a TRACK, but when you OVERLAY a TRACK you will mix the TRACK from the buffer with the current TRACK. The cut buffer will have priority if notes collide on the same STEP.

F6 UNDERLAY TRACK   To UNDERLAY a TRACK is similar to OVERLAY TRACK. First CUT the TRACK as usual with F1. Then press F6 to UNDERLAY the TRACK. The difference from OVERLAY TRACK is that the current TRACK will have priority if notes collide on the same STEP.

F7 GOTO STEP 00   This command resets the STEP COUNTER to the beginning of the current PATTERN (STEP 00).

F8 GOTO STEP 10   This command moves the STEP COUNTER to STEP 10 in the current PATTERN.

F9 GOTO STEP 20   This command moves the STEP COUNTER to STEP 20 in the current PATTERN.

F10 GOTO STEP 30   This command moves the STEP COUNTER to STEP 30 in the current PATTERN.

THE FUNCTION KEYS + SHIFT

F1 SET START OF BLOCK   This command marks the BLOCK START in the current TRACK.

F2 SET END OF BLOCK   This command marks the BLOCK END in the current TRACK. At the same time the BLOCK will be CUT to the -TCB TRACKER- buffer.

F3 PASTE BLOCK   PASTE a BLOCK in the same TRACK or any other TRACK in the song. You can also paste a BLOCK to any other song or module. Before you PASTE a BLOCK, you must define it with [SHIFT]- F1 and [SHIFT]-F2.

(Use the block commands when you want to move a part of a TRACK.)

F4 REPLACE SPECIAL SAMPLE   Use this utility to REPLACE the SAMPLE at the current STEP in the active TRACK with the SAMPLE set by the "SAM#" marker. This is the way to change sample 5 to, let's say, sample 6 in the TRACK, without the necessity to step program all the notes again with the new sample.

F5 CUT SPECIAL SAMPLE   This utility will CUT the SAMPLE at the current STEP to the -TCB TRACKER'S- buffer. PASTE it as usual with F2. This command is very helpful, if for instance you want to copy a BassDrum from a TRACK but don't want any other instrument.

F6 TRANSPOSE SPECIAL SAMPLE   Use this command if you want to TRANSPOSE the SAMPLE at the current STEP. First click on the arrows to the left of the "TRAN" sign in the Markers Section. Then press [SHIFT]-F6

to TRANSPOSE the SAMPLE at the current STEP. All other samples in the TRACK will not be touched.

F7 DELETE SPECIAL SAMPLE DELETE the SAMPLE in the TRACK at the current STEP.

F8 STRETCH TRACK This command is useful if you want more space in between notes. It works together with [SHIFT]-F9. For instance, if you use sixteen notes as the smallest part and want to change it to thirty-second notes, press [SHIFT]- F8. When you press the key, the TRACK will be twice as big. Don't forget to change the TEMPO if you want to play the track in the same beat as before.

F9 PASTE THE LEFTOVER STEPS When you STRETCH a TRACK it will be twice as big as before. The LEFTOVER STEPS will be CUT to the -TCB TRACKER- buffer. PASTE these steps wherever you want them with [SHIFT]-F9. This will usually be at the same TRACK in the next pattern.

F10 REVERSE TRACK If you want to reverse the TRACK, then press [SHIFT]-F10

THE FUNCTION KEYS + ALTERNATE

F1 TURN MONITOR ON / OFF Activate this indicator when you want to listen to the sounds you are playing or recording at the current STEP. This is useful when you record and want to play in perfect sync.

F2 TOGGLE CYCLE ON / OFF This button locks the chosen PATTERN into a CYCLE. The PATTERN will play over and over again. The position and restart markers are disabled.

F3 TOGGLE MUTE ON / OFF Activate this indicator if you want to MUTE the SPECIAL effects in the PATTERN or the entire SONG. If this indicator is on, all values set by SPECIAL will have no effect. Also see The Mode Indicator section and SPEC in the Marker section.

F4 COPY TRACK WITH OFFSET Copy every note, every second note, every third note, or whatever ·to the -TCB

TRACKER- buffer. This command is determined by what values you have entered in the preset factory on the SO marker. If the marker is at 01, then every note will be copied, if it is set at two, then every second note will be copied etc. Press F2 to paste it. Also see SET OFFSET (SO).

THE ST TYPEWRITER KEYBOARD
AS A PIANO KEYBOARD
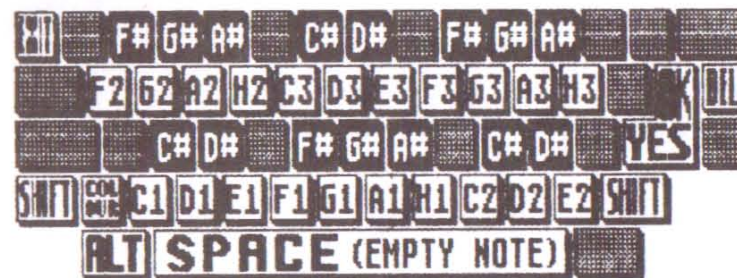
You can play in three octaves on the keyboard.

A, F, K, ', 1, 5, 8, =,] and ` are not used when playing.

THE MIDI KEYBOARD AND MIDI CLOCK

Instead of using the Atari typewriter keyboard as a piano you can use a MIDI keyboard to enter the notes. Click on the MIDI button to activate MIDI. Connect the MIDI OUT port on your keyboard to the MIDI IN port on the Atari. MIDI uses 5-pin 180 degree DIN connectors. If you are unable to obtain these leads from your local music shop, then you can buy them from MPH.

The -TCB TRACKER- receives MIDI in OMNI mode, i.e. you can play on any of the 16 MIDI channels. If possible, set your keyboard in MONO mode as it is not possible to play more than one note at a time. If you play in POLY mode, and hit more than one key at the same time, only one note (the first) will be played or recorded.

For professional musicians it is possible to use the -TCB TRACKER- as a slave sequencer / sampler / drum machine, as it can read MIDI CLOCK. Simply hook up your sequencer, drum machine or any other tool that sends MIDI CLOCK, to the -

TCB TRACKER- and let it play along with your other instruments in perfect sync. You will soon find a new potential in your music system with new exiting special effects from the -TCB TRACKER-.

The Atari ST's MIDI OUT port is not used in the -TCB TRACKER-.

SET COLOURS

It is possible to change the colours of the SCREEN display, the activated BUTTONS, the TRACK cursor and the LINE. Just press [\] (the key between [LEFT SHIFT] and [Z]) and you have got 20 different colours to choose from. After that, activate [SHIFT] and press [\] again. Now you can cycle through the 20 colours of the track cursor and the line. Deselect [SHIFT] and select [ALT] and you can cycle through the 20 colours of the activated buttons. This makes up for 8000 different combinations. Pick the colours that suit your taste and mood the best.

THE MOUSE

Mouse operation in the -TCB TRACKER- is quite normal; just point and click. Select and deselect everything with the LEFT MOUSE BUTTON. There are a few exceptions though.

1) You can't double click.

2) By clicking the RIGHT MOUSE BUTTON once, you will increase the sample marker by one. By clicking BOTH MOUSE BUTTONS once, you will move downwards to the next sample. Watch the information field to see the sample names change. Also see MOUSE EDIT.

MAKING YOUR OWN SAMPLES

At the moment the -TCB TRACKER- has no special hardware to make samples. But it is possible to use ST REPLAY from Microdeal to create samples that will work well in the -TCB TRACKER-.

TIPS AND TRICKS

On the STE in stereo mode you have got two tracks to the left (1 & 4) and two tracks to the right (2 & 3). The problem is to put a sound in the middle. If you for instance want the BassDrum in the middle section, you must use two tracks at the same time. One on the left side and one on the right at the same step.

To save space on disks and speed up the load/save routine, the best way to work with -TCB TRACKER- is to construct a module with your favourite samples. Then you only have to load the module once. After that you can load and save your different songs as "songs" and not modules.

APPENDIX A - HEX TABLE

0 = 0	10 = 16
1 = 1	11 = 17
2 = 2	12 = 18
3 = 3	13 = 19
4 = 4	14 = 20
5 = 5	15 = 21
6 = 6	16 = 22
7 = 7	17 = 23
8 = 8	18 = 24
9 = 9	19 = 25
A = 10	1A = 26
B = 11	1B = 27
C = 12	1C = 28
D = 13	1D = 29
E = 14	1E = 30
F = 15	1F = 31

APPENDIX B - HELP SCREENS

HELP SCREEN 1 - FUNCTION KEYS

F1	- CUT TRACK
F2	- PASTE TRACK
F3	- CUT PATTERN
F4	- PASTE PATTERN
F5	- OVERLAY TRACK
F6	- UNDERLAY TRACK
F7	- GOTO STEP 00
F8	- GOTO STEP 10
F9	- GOTO STEP 20
F10	- GOTO STEP 30

HELP SCREEN 2 - FUNCTION KEYS + SHIFT

F1	- SET BLOCK START
F2	- SET BLOCK END
F3	- PASTE BLOCK
F4	- REPLACE SPECIAL SAMPLE
F5	- COPY SPECIAL SAMPLE
F6	- TRANSPOSE SPECIAL SAMPLE
F7	- DELETE SPECIAL SAMPLE
F8	- STRETCH TRACK
F9	- PASTE THE LEFTOVER STEPS
F10	- CUT TRACK REVERSED

HELP SCREEN 3 - FUNCTION KEYS + ALTERNATE

F1	- TOGGLE MONITOR ON-OFF
F2	- TOGGLE CYCLE ON-OFF
F3	- TOGGLE MUTE ON-OFF
F4	- COPY TRACK WITH OFFSET
F5	- RESERVED
F6	- RESERVED
F7	- RESERVED
F8	- RESERVED
F9	- RESERVED
F10	- RESERVED

HELP SCREEN 4 - NUMERIC KEYPAD

ENTER	- PLAY	
0	- STOP	
	- RECORD	[REC]
4	- SAVE SONG	[SNG]
5	- SAVE SAMPLE	[SPL]
6	- SAVE MODULE	[MOD]
7	- LOAD SONG	[SNG]
8	- LOAD SAMPLE	[SPL]
9	- LOAD MODULE	[MOD]
(	- FAST INCREASE LOOP	
)	- FAST DECREASE LOOP	

HELP SCREEN 5 - TYPEWRITER KEYBOARD

\	- SET SCREEN COLOURS
SHIFT- \	- SET LINE AND CURSOR COLOURS
ALT - \	- SET ACTIVE BUTTON COLOURS
RETURN	- YES - OK
UNDO	- UNDO LAST COMMAND
HELP	- ENTER HELP SCREENS
INS	- INSERT A SPACE IN A TRACK
DEL	- DELETE A NOTE OR SPACE
CLR HOME	- GOTO SONG START / POSITION 00
ESC	- EXIT -TCB TRACKER-

APPENDIX C - ERROR CODES

TCB TRACKER ERROR CODES

In some parts of the TCB TRACKER the program checks itself to make sure nothing that is wrong. If any errors occur during these checks, then the background turns red and a message with an internal error message will pop up. If this should happen, please write to MPH, giving the internal error number and an exact description of what you were doing that caused the error. This will help us track down any obscure bugs and correct them as quickly as possible.

There are of course some "normal" errors that may occur. These include trying to save a file larger than the free disk space or trying to save a file on a write protected disk. Almost all these "normal" errors appear when you access the disk drive in any way. Below is a list of the error codes -TCB TRACKER- recognises. Most of them you will never see.

Press [SPACE] to exit the ERROR BOX.

GEMDOS ERROR CODES

01	GENERAL ERROR This code appears when you try to save a file on a write protected disk or when you try to load or save a file on an unformatted disk... or if you forgot to put in a disk in the drive.
21	FILE NOT FOUND This code appears when you try to load a file that does not exist on the disk.
22	PATHNAME NOT FOUND This code appears when you try to access a folder that does not exist on the disk.
23	TOO MANY FILES OPEN
24	ACCESS NOT POSSIBLE
25	INVALID HANDLE NUMBER
27	NOT ENOUGH MEMORY This code appears when you try to save a file larger than the free disk space or when you try to load a file larger than your free RAM.
28	INVALID MEMORY BLOCK ADDRESS
2E	INVALID DRIVE SPECIFICATION
31	NO MORE FILES

APPENDIX D - FILE FORMAT

-TCB TRACKER- MODULE AND SONG FILES

This is the file format used in TCB TRACKER songs and modules.

BYTE	
0-7	- AN COOL. - Header-
8-11	- Number of patterns in the song-
12	- Tempo-
13	- Empty-
14-141	- Pattern pointers (128 bytes)-
142-143	- Restart value-
144-145	- Amiga button on (1) or off (0)-
146-273	- The sample names (8*16 bytes)-
274-305	- The special values (16*2bytes)-
306-X	- The patterns (512 bytes each)-

BYTES USED AFTER THE PATTERNS IN MODULES

BYTE	
0-3	The size of all samples together and this header-4-67 -The volume of the samples in the first byte, then an empty byte. After that, one word containing the loop value-
68-195 -	The first long word contains the offset value from the address where the patterns end. The other long word contains the size of the sample-196-X - Start of sample data-

APPENDIX E - REPLAY ROUTINES

INCLUDING -TCB TRACKER- FILES IN YOUR OWN PROGRAMS

It is very simple to include TCB TRACKER modules in your own programs. Both BASIC and assembler routines are included on the disk. A "C" routine will materialize in the near future. The assembler routine is only recommended for experienced programmers.

There are differences between the BASIC and assembler routine. In assembler you can run other routines simultaneously while the music is playing. In BASIC, you can just play the module. Remember that the replay routine is using the D6-D7/A2-A6 registers. The assembler routine is only using timer B but you have to call the sequencer part every VBI. That will be understood when you study the source code on the disk.

It is also possible to see what is replayed by the routine, by looking in address Replay_rout+$514 for the STE and Replay_rout+$562 for the ST. From these variables and four words further you will see the notes and samples in track 1, 2, 3 and 4. The format is the same as described in the Track Display paragraph.

When you play TCB TRACKER modules in your own program you are using just 37% of the CPU time on the ST, 31% if the Amiga button is on. The STE is using 29% of the CPU time, 25% if the Amiga button is activated.

THE -TCB TRACKER- CODES

When the -TCB TRACKER- is loaded, you will be prompted to enter one of the following codes:

TCB CODE No 6 - LOGON

TCB CODE No 7 - FLICKA

TCB CODE No 8 - STEP ASIDE

TCB CODE No 9 - ADD A NOTE

TCB CODE No 10 - TCB

TCB CODE No 11 - TRACKER

TCB CODE No 12 - LITTLE G

TCB CODE No 13 - VIKKE DRAG

TCB CODE No 14 - BERWALD

TCB CODE No 15 - MULU

TCB CODE No 16 - SAM COOKE

TCB CODE No 17 - POWER PACK

TCB CODE No 18 - AN COOL

TCB CODE No 19 - 120 BPM

TCB CODE No 20 - YM 2149

TCB CODE No 21 - JOSHUA

TCB CODE No 22 - CHINA FOOD

TCB CODE No 23 - DRUM EDITH

TCB CODE No 24 - SEABEAR

TCB CODE No 25 - STARDUST

TCB CODE No 26 - OH NOOOH

TCB CODE No 27 - NO VIRUS

TCB CODE No 28 - MR PHILIP

TCB CODE No 29 - BACH

TCB CODE No 30 - MEGA CRIBB

TCB CODE No 31 - COKE

TCB CODE No 32 - 100 MEG

TCB CODE No 33 - MIDI CLOCK

TCB CODE No 34 - KOLLA HIT

TCB CODE No 35 - MOOG

TCB CODE No 36 - CHIPS

TCB CODE No 37 - PUMP IT UP

TCB CODE No 38 - BASSLINE

TCB CODE No 39 - CUDDLY

TCB CODE No 40 - MPH

TCB CODE No 41 - CABLE TV

TCB CODE No 42 - GETRYGGEN

TCB CODE No 43 - BEEFEATERS

TCB CODE No 44 - PLAYLIST

TCB CODE No 45 - 0603503382

TCB CODE No 46 - ELVIS

TCB CODE No 47 - NEW YEAR

TCB CODE No 48 - PATTERN 12

TCB CODE No 49 - STOCKHOLM

TCB CODE No 50 - SOWATT

TCB CODE No 51 - POSITION 9

TCB CODE No 52 - ANNIKA

TCB CODE No 53 - DR RHYTHM

TCB CODE No 54 - WATTAHECK

TCB CODE No 55 - COLDCUT