Storing, recalling and playback

SK-05-0389

Storing sequences

When you create and edit a sequence, the sequence exists only in computer memory. When you turn off the system the sequence disappears.

To make a permanent copy of the sequence, you store it on your Winchester or on a floppy disk. You can store the sequence either from the terminal using the Sequence Editor or from the keyboard control panel.

(See also instructions for storing from the Sequence Editor in the manual *Sequence Editing.*)

Sequence files

Sequences are stored in special storage areas called **sequence files**. Sequence files contain a specific amount of space and must be created separately before you store sequences in them from the keyboard control panel.

Your Winchester can contain only eight numbered sequence files at the top-level and eight in each subcatalog. Numbered sequence files correspond to the eight numbered buttons under TIMBRE/SEQUENCE STORAGE on the keyboard control panel.

Since you may not want to overwrite the sequences already stored in the top-level of your Winchester, you need to establish a storage system with a number of subcatalogs. Instructions for creating a storage system are in "Basic storage systems" in the manual *Organizing and Storing Sounds.*

You can create your own sequence files in these subcatalogs in one of two ways.

- You can enter the desired subcatalog and type a series of commands from the Monitor module.
- You can enter the desired subcatalog and copy any or all of the sequence files stored on the floppy disk labeled Master Timbre/Sequence Storage Disk.

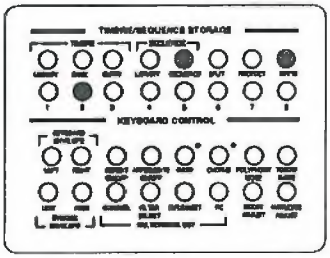
Both of these procedures are explained in the section "Managing sequence and timbre files" in the manual *Organizing and Storing Sounds.*

Sequence filenames

When you store a sequence under the first SEQUENCE STORAGE button on the keyboard control panel, the sequence appears in the Sequence Directory as <SEQ #1>. If you use both the Sequence Editor and the keyboard control panel to store and recall sequences, you will notice that the same sequence also has the filename .sq0data. The other numbered sequences also have filenames.

filename	keyboard sequence button #	as it appears in Sequence Directory
.sq0data	1	<SEQ #1>
.sq1data	2	<SEQ #2>
.sq2data	3	<SEQ #3>
.sq3data	4	<SEQ #4>
.sq4data	5	<SEQ #5>
.sq5data	6	<SEQ #6>
.sq6data	7	<SEQ #7>
.sq7data	8	<SEQ #8>

Storing sequences



SEQUENCE, WRITE, numbered button panel 4

Storing a sequence in the current catalog

1. Press and hold the WRITE button.

   The display window shows

   PRESS ENTRY,
   BANK OR SEQUENCE

2. Press the SEQUENCE button.

   The display window shows

   PRESS "1-8" TO
   STORE SEQUENCE

3. Press a numbered button under TIMBRE/SEQUENCE STORAGE.

   The sequence is stored to disk. Any sequence previously stored under that button is overwritten. The display window shows

   [number] SECTORS
   WRITTEN TO DISK

   If the display window shows

   ERROR - NOTHING
   WRITTEN TO DISK

   repeat the procedure, making sure you press the buttons in the right order.

A sequence can be stored to any device or subcatalog in your system by selecting the device or subcatalog from the subcatalog directory before storing the sequence.

Storing a sequence on a floppy disk

1. Place a formatted disk containing numbered sequence files in the floppy drive 0.

2. Press and hold WRITE.

   The display window shows

   PRESS ENTRY,
   BANK OR SEQUENCE

3. Press SEQUENCE.

4. Continue to hold WRITE while you press and hold SEQUENCE LIBRARY.

   PRESS "1—8" TO
   STORE SEQUENCE

5. Press a numbered button under TIMBRE/SEQUENCE STORAGE.

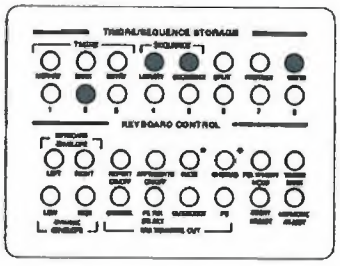
   The display window shows

   [number] SECTORS
   WRITTEN TO DISK

   If the display window shows

   ERROR—NOTHING
   WRITTEN TO DISK

   repeat the procedure, making sure you press the buttons in the right order.



SEQUENCE LIBRARY, SEQUENCE, WRITE, numbered button panel 4

Storing sequences (con't)

Storing large sequences

When you store a sequence from the keyboard control panel, the destination sequence file must be large enough to contain the notes and other information stored with the sequence. (See "What is saved with the sequence" in this section.) Most sequences will fit into a sequence file of 500 sectors or less unless they have extensive real-time effects or Music Printing editing.

When you try to store a sequence that is too large for the selected sequence file, an error message appears.

SEQUENCE IS TOO
LONG TO STORE

If this happens, you can either store the sequence in another sequence file with more space; or you can store it from the Sequence Editor using the procedure outlined on the opposite page.

When you store from the Sequence Editor, the sequence file is automatically expanded to fit the sequence. However, once you have expanded a sequence file by storing the sequence from the Sequence Editor, you will have to continue to store it from the Sequence Editor each time you add to its length.

If you want to continue to store the sequence from the keyboard control panel, you can use the Sequence Editor storing procedure as a temporary measure. When the sequence is safely stored, go to the Monitor module and create or copy sequence files as large as you need. (See the section "Managing sequence and timbre files" in the manual *Organizing and Storing Sounds.*)

Storing from the Sequence Editor

1. Select the Sequence Editor from the Main Menu.

2. Click on the Sequence Files command in the commands panel to the right.

   The Sequence Files dialog appears in the Dialog panel at the top of the screen.

3. Select the Save Sequence function by stepping the word Sequence in the Dialog panel.

4. Click a sequence number or type in a filename or treename.

5. Click the SAVE SEQUENCE button at the lower left of the Dialog panel.

   The sequence is saved to the designated catalog and file.

Complete instructions for storing sequences from the Sequence Editor are in the manual *Sequence Editing*.

Storing sequences (con't)

What is saved with a sequence

When you store a sequence, you store the actual notes—starting times, pitches and durations—on each track of the sequence. You also store

- the timbre used on each track, including all its parameters, any real-time effects and the names of any associated sound files
- the current mark point
- the current time format and beats-per-measure
- any transpositions or loops
- the current click rate, click rate multiplier or click track assignment
- the current speed setting
- any special scales or octave ratios
- any Music Printing editing
- any track routings and track volumes
- any MIDI output routings, program changes or filter assignments
- any real-time effects controller movements

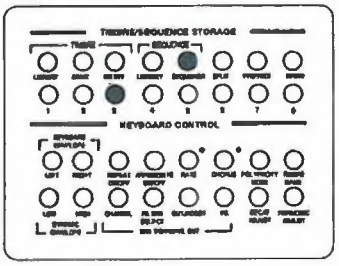
What is not saved with a sequence

When you store a sequence, you do not store with it

- the current keyboard timbre, its multichannel and MIDI routing and MIDI filter assignments
- the current overwrite assignments
- the current overall tuning
- keyboard split point settings
- MIDI synchronization or MIDI echo
- the on/off status of the mark point and stepping function

Recalling sequences

You can use the keyboard control panel to recall a stored sequence from either the current catalog or the top-level catalog of a floppy disk. If you want to recall a sequence from another catalog in your system, you must use the Sub-catalog Directory and Sequence Directory as explained in the manual *Sequence Editing*.



SEQUENCE, numbered button panel 4

Recalling a sequence from the current catalog

You can recall any numbered sequence in the current catalog using the buttons on the keyboard control panel.

1. Press SEQUENCE.

   The SEQUENCE button lights.

2. Press a numbered button.

   The button lights. The display window shows

   [number] NOTES LEFT

   A copy of the numbered sequence corresponding to the numbered button is loaded into memory from the current device. It begins playing when you press START.

Recalling a sequence from a floppy disk

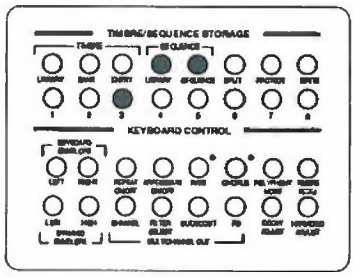
1. Place the disk containing the desired sequence file into floppy drive 0.

2. Press SEQUENCE, then press and hold LIBRARY.

3. Press a numbered button.

   The LIBRARY button remains lit until the sequence is loaded into memory. The display window shows

   [number] NOTES LEFT



LIBRARY, SEQUENCE, numbered button panel 4

Recalling sequences (con't)

Sequence recall error messages

When the sequence is not successfully loaded into memory, one of the following error messages tells you what is wrong.

SEQUENCE FILE IS EMPTY	You have selected a sequence file that has no sequence recorded in it.
NOT ENOUGH ROOM FOR NEW TIMBRE	The sequence has been created in a system with a larger amount of memory than your system. There are more notes in the sequence than your Memory Recorder allows.
DATA/SOUND FILE IS MISSING	(1) There is no sequence file that corresponds to the numbered button you have pressed on the button panel. (2) The sequence you have recalled uses sound file timbres* and one or more of the necessary sound files cannot be located anywhere on your Winchester or on the floppy disk. If the error message indicates the latter problem, you can still play the sequence. However, any track that uses a timbre with one of the missing sound files does not sound.

* A sound file timbre is a timbre which includes sampled sounds. The actual sound files are stored in separate files. In order to play the sequence, each sound file must be loaded into polyphonic sampling memory.

Loading missing sound files

When you recall a sequence requiring sound files and any of those sound files cannot be found, an error message appears.

DATA/SOUND FILE IS MISSING

A list of the missing sound files can be viewed from the Missing Sound File Display.

If the missing sound files are stored on tape, you first load them onto the Winchester using the Monitor module (See the section "Tape archives" in the manual *Organizing and Storing Sounds*). Once they are stored on the Winchester, you return to the Real-Time Performance module and recall the sequence again.

Loading missing sound files (con't)

If the missing sound files are stored on floppy disks, you can load them into polyphonic sampling memory from the Missing Sound File Display.

1. Select the Missing Sound File Display from the Main Menu.
2. Insert the floppy disk containing any missing sound files into the F0 drive.
3. Press Return.

   The sound file(s) from that disk begin loading. When loading is complete, all files loaded disappear from the list.
4. Repeat steps 2 and 3 until all missing files have been loaded and the bottom part of the screen is blank.
5. Press Enter to return to the Main Menu.

Recalling sequences with 96-voice poly systems

When you recall a sequence with a 96-voice poly system, the sound files associated with it are loaded into the poly bins assigned to each track of the sequence.

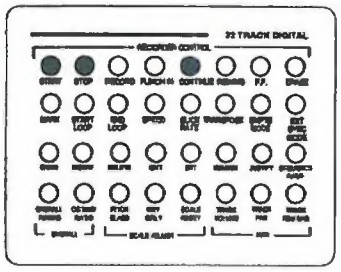
As sound files are loaded into the assigned poly bins, sound files in each poly bin that are not part of the keyboard timbre or any of the track timbres of the sequence are deleted from poly memory as more room is required. If the memory in any of the assigned poly bins is insufficient for all the sound files assignedto it, the remaining sound files are loaded into the next poly bin. If there is insufficient room in all three poly bins, an error message appears.

Out of Room in Sample Memory

Once a sound file is loaded into one bin or another, it remains there until it is erased from poly memory. If, for example, a sequence with a track timbre having sound files assigned to poly bin 2 is recalled and its associated sound files are already loaded into poly bin 1, the sound files remain in poly bin 1.

Sequence playback

When you play back a sequence, a **song pointer** moves from click to click representing the current position of the sequence.



START, STOP, CONTINUE panel 2

Starting and stopping

You can start the sequence from the first beat, the first recorded note or from any other point. Regardless of where the sequence was last stopped, playback starts instantaneously.

You play back a sequence using the RECORDER CONTROL buttons on keyboard control panel 2.

button	press	result
START	once	Playback starts from the first beat or from the mark point.
START	twice	Playback starts from the first note or from the mark point.
CONTINUE	once	Playback starts from the current position of the song pointer.
STOP	once	Sequence stops.

You can specify any beat of a sequence as a mark point. (See "Setting a mark point" in this section.)

Fast forward, rewind and continue

You use the F.F. and REWIND buttons to move quickly forward or backward through a sequence. These functions are similar to those on a tape recorder. Press F.F. to move forward through the sequence; press REWIND to move backward. The sound is audible but muted in either case.

The speed of the rewind/fast forward functions is a fixed rate with three speeds available: two, eight and 32 times normal speed.

- Press REWIND or F.F. once for twice normal speed.
- Press REWIND or F.F. twice for 8 times normal speed.
- Press REWIND or F.F. three times for 32 times normal speed.

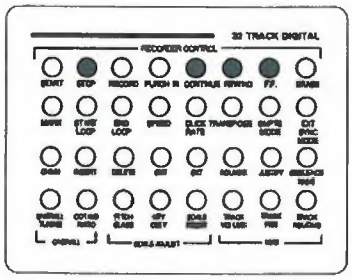
When moving forward or backward at speeds greater than twice normal speed, the movement can be slowed by pressing the opposite button. For example, pressing REWIND while moving forward at 32 times normal speed causes the forward movement to drop to 8 times normal speed.

To resume normal playback

- Press CONTINUE.

To stop the movement

- Press STOP.



STOP, CONTINUE, REWIND, F.F. panel 2

Sequence playback (con't)

Soloing tracks

You can play back all recorded tracks of a sequence or only individual tracks or groups of tracks that you have "soloed."

To solo a track or tracks:

- Press a numbered button under TRACK SELECT.

  The button blinks, and you hear only that track when you press START.

If, after soloing a track, you press another numbered button to solo a different track, the previously soloed track button changes from blinking to lit. All tracks with lit or blinking buttons are soloed.

To "unsolo" a track.

- Press the TRACK SELECT button when it's lit or blinking.

  The TRACK SELECT button goes out, and you no longer hear the track.

Changing the tempo

You can change the playback or recording speed of a sequence without changing its pitch.

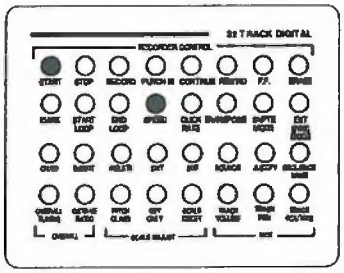
1. Press START to listen to the sequence while you adjust the speed.

2. Press the SPEED button.

   The display window shows

   [number] SPEED

3. Dial in any number from 0.000 to 10.000 with the control knob.



START, SPEED panel 2

Dialing zero brings the recorded sequence to a standstill; dialing ten makes its speed ten times the original recorded speed. Pressing the SPEED button again restores the sequence to the original speed setting of 1.000. When you store a sequence on disk, the current speed setting is stored along with it.

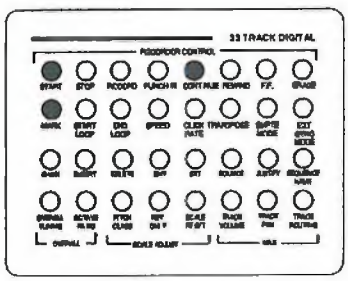
With any speed changes made between recording and playback, the click is adjusted automatically to keep the digital metronome in time with the sequence. The click rate that appears in the window when you press the CLICK RATE button, however, always indicates the rate of the click when the speed setting is 1.000.

Note: Pressing the SPEED button repeatedly toggles the speed of the sequence between 1.000 and 0.960. When the speed is set to 0.960, the click rate is expressed in frames-per-beat instead of the normal beats-per-minute or milliseconds. Pressing speed again restores the default 1.000 speed.

Sequence playback (con't)

If you want to start sequence playback from a specific point in the sequence, you can set a **mark point** (from the keyboard or Sequence Editor) or a **locator point** (from the Audio Event Editor).

When a mark or locator point is turned on, the sequence begins from the designated point whenever you click START.



START, CONTINUE, MARK panel 2

Setting a mark point

You can specify any location in the sequence by setting a mark point. A mark point can be set while the sequence is playing or while the sequence is stopped. The mark point time is displayed in whichever time format you have selected.

To set a mark point while the sequence is stopped:

1. Press and release the MARK button.

   The display window shows

   M [measure]:[beat]
   MARK POINT: ON

2. Use the control knob to set a starting beat number.

To set a mark point while the sequence is playing:

1. Press the START button to play the sequence.
2. Press and hold the MARK button.

   The display window shows

   M [measure]:[beat]
   MARK POINT: ON

3. Press CONTINUE at the desired point. Release both buttons.

   The display window shows a new starting measure and beat.

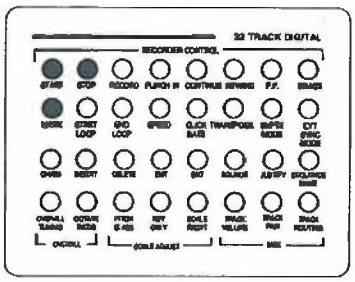
Turning a mark point on and off

You can clear a mark point.

1. Press and hold MARK.
2. Press a TRACK SELECT button containing an empty track.

You can turn the mark start feature off and on while retaining the mark point in memory.

1. Press and hold the MARK button.
2. Press the STOP button for OFF and the START button for ON.



START, STOP, MARK panel 2

Sound drop-out

The maximum number of notes that can sound simultaneously depends on the configuration of your system. This section will show you how to determine where sound drop-out is occurring and how to reassign your resources to prevent it.

Polyphonic voice drop-out

When you play back a sequence, the number of notes that can sound simultaneously depends on the number of FM and /or poly voices installed in your system.

For example, if you have recorded 40 tracks in a 32-voice system, then at any point in the sequence where notes from all 40 tracks were recorded, at least eight tracks will not sound on playback. If any of the timbres on any of the tracks use more than one voice, then additional notes will not sound. The rule is,

> The number of notes sounding simultaneously times the number of voices used by each track timbre must be less than the number of voices in the system.

Polyphonic sampling voices are independent of FM voices; thus you can reach the limits of your poly voices without affecting the playback of FM track timbres.

Checking for sound drop-out

You can check the point(s) in the current sequence where note drop-out is occurring because more sound files are called for than the system has poly voices.

1. Press POLYPHONY MODE.

   The display window shows

   128 POLYPHONY
   USED: 0

   (On a 96-voice poly system, three numbers appear after USED, one for each poly bin.)

2. Start the sequence.

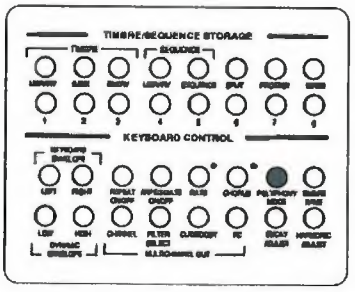
   The number is incremented each time another voice is used. When the number matches the maximum number of voices in your system, voice drop-out may be occurring.

3. Reset the counters to 0 by holding POLYPHONY MODE and pressing STOP.

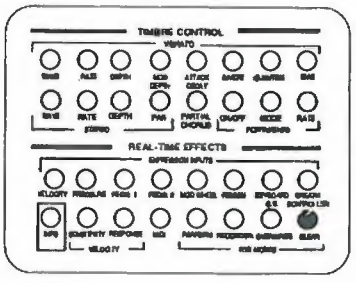
   The counters are reset. If they continue to show the maximum number of voices in your system, voice drop-out is probably occurring.

When you have finished using the voice check

- Press CLEAR on the fifth panel

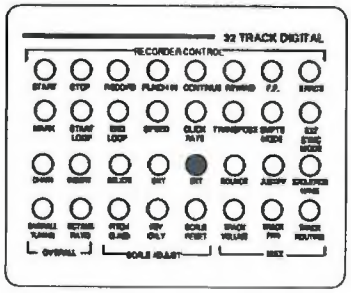


POLYPHONY MODE
panel 4

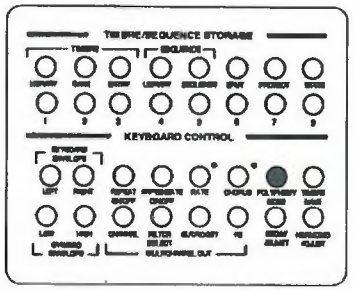


CLEAR
panel 5

Sound drop-out (con't)



SKT
panel 2



POLYPHONY MODE
panel 4

Preventing sound drop-out

The most effective way to prevent sound drop-out is to purchase additional voices. You can also reduce the polyphony setting of any of the track timbres so that long note decays don't use up voices.

1. Use the SKT button to bring a track timbre to the keyboard.

2. Press POLYPHONY MODE and reduce the polyphony setting to a lower number. A setting of 1 means that each new note will cut off the previously sounding note. A setting of 3 means that no more than three notes will sound simultaneously.

3. SKT the timbre back to the track.

4. Repeat steps 1-3 until voice drop-out no longer occurs.

Preventing sound drop-out in a 96-poly system

If you have a 96-voice poly system, notes may drop out if oo many sound files are located in one poly bin. This is pecause the sound files in a given poly bin sound only with the voices of that poly bin. If more than 32 sound files are stored in a single bin, only 32 will sound simultaneously. If, at any point in the sequence, more than 32 sound files located in a single bin are called for, voice drop-out will occur.

To prevent voice drop-out, you must first determine the poly bin location of all sound files associated with the tracks of the current sequence.

1. Select the Sound File Directory from the Main Menu. If you have an optical disk, you may select the Optical Disk Display.

2. Click R at the middle right of the screen.

3. Select [COLLECT] on the poly RAM dialog which appears in the center of the screen.

   All sound files not associated with the current sequence are erased from the three poly bins.

4. Select the Poly Memory Display.

5. Under the Show option, select Poly Bin.

   The sound files in all three poly bins are shown, each with its poly bin number.

(continued next page)

Sound drop-out (con't)

Preventing sound drop-out in a 96-poly system (con't)

If more than 32 sound files associated with the current sequence are located in any given bin, you should take the following steps to prevent voice drop-out on playback.

1. Select the Multichannel Display from the Main Menu.

   The current poly bin assignment for each track timbre appears in the column labeled "Poly."

2. Reassign track timbres to different poly bins as needed to spread the sound file locations equally over the three poly bins.

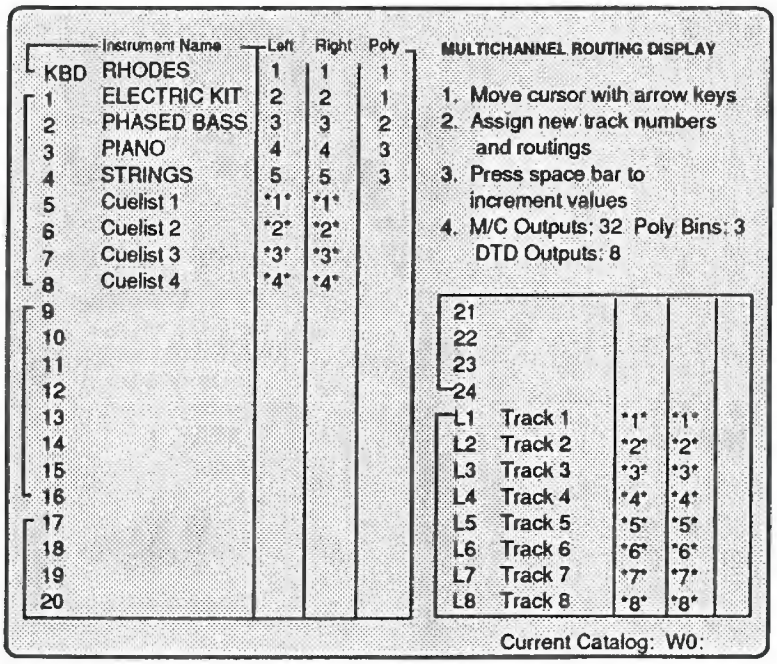
3. Save the sequence with its new poly bin assignments to disk.

4. Erase the sequence.

5. Erase poly memory.

6. Recall the sequence again.

   The sound files associated with each track timbre are loaded into the newly assigned poly bins.


Instrument Name
Left
Right
Poly
KBD RHODES 1 1 1
1 ELECTRIC KIT 2 2 1
2 PHASED BASS 3 3 2
3 PIANO 4 4 3
4 STRINGS 5 5 3
5 Cuelist 1 *1* *1*
6 Cuelist 2 *2* *2*
7 Cuelist 3 *3* *3*
8 Cuelist 4 *4* *4*
9
10
11
12
13
14
15
16
17
18
19
20
MULTICHANNEL ROUTING DISPLAY
1. Move cursor with arrow keys
2. Assign new track numbers and routings
3. Press space bar to increment values
4. M/C Outputs: 32 Poly Bins: 3 DTD Outputs: 8
21
22
23
24
L1 Track 1 *1* *1*
L2 Track 2 *2* *2*
L3 Track 3 *3* *3*
L4 Track 4 *4* *4*
L5 Track 5 *5* *5*
L6 Track 6 *6* *6*
L7 Track 7 *7* *7*
L8 Track 8 *8* *8*
Current Catalog: W0: