RELEASE M

** Released April 1987*

HARDWARE REQUIREMENTS :

Polyphonic Sampling

- Model C Processor with 3 M128 External Memory Cards

Monophonic Sampling/FM

- Model B Processor with 2 M128 External Memory Cards

* Mouse requires mouse interface card

SYSTEM ENHANCEMENTS :

Systemwide

- Mouse Interface
- Direct-to-Disk
- 4 Hard Drives per SCSI Port (W0: and W1:)
- 100 KHz Stereo Sampling Module

Sequencer

- 200 Tracks
- 8 Million Note Capacity
- Chain, Insert, and Delete
- 1 Millisecond Resolution (previously 5 Millisecond)
- Ability to Overwrite Real Time Effects
- Track Volume Available for Patching
- Recorder Display Enhancements
  - Adding RTE's
  - Adding Independent Loops
  - Adding MIDI Program Changes
  - Displaying Sound File Offsets

Sound File Editor

- Stereo Sound Files
- Use of Mouse for Playing and Editing
- Captions
- New Modify Commands
  - Combine
  - Extract Mono
  - Exchange
  - Extract
  - Crossfade
  - Delete
  - Cut
  - Copy
  - Paste
  - Fill
  - Loop
  - Volume
- Synchronized Sampling

MIDI

- Selective MIDI Filtering
- Sending and Recording Overall Volume
- Sending and Recording MIDI Program Changes
- MID Echo
- Sending and Receiving Song Position Pointer

RELEASE N

** Released January 1988*

HARDWARE REQUIREMENTS :

Polyphonic Sampling
- Model C Processor
- 512K External Memory
- Mouse Interface (to access new features)

Sequence Editor
- Mouse and Mouse Interface Card

Optical Disk
- 80MB Winchester
- Optical Interface Card
- Mouse and Mouse Interface Card
- CDC Laserdrive

SYSTEM ENHANCEMENTS :

Systemwide
- Optical Disk
- Sequence Editor
- Full Mouse Implementation
  - Dragging
  - Incrementing and Decrementing

Sound File Editor
- New Modify Commands
  - Normalize
  - Invert
  - Reverse Loop
  - Mix
  - DC Trim

Sound File Directory
- Searching
- Scroll Bars
- Audition
- Menu Enhancements
  - Caption
  - Length

Sequence Editor
- Cut and Paste
- Access to All 200 Tracks
- Saving Named Sequences from the RTP
- 8 Mark Points
- Transposing by Region

Direct-to-Disk
- Audio Event Editor

RELEASE 0

** Released September 1988*

HARDWARE REQUIREMENTS :

General

- 512K External Memory
- Model C Processor
- SuperFloppy Drive
- Graphics Terminal

Audio Event Editor

- Direct-to-Disk
- 1024K External Memory
- Mouse or TrackBall

Sample-to-Memory

- New Sample-to-Memory Module

SYSTEM ENHANCEMENTS :

Systemwide

- Macintosh II
- Feet/Frames Time Display Format
- 64 Poly Voices Supported

Optical Disk

- Optical Category to Winchester Transfer
- Printing of Optical Directory

Sound File Directory

- Ability to Store 2 "Bookmark" Locations

Sound File Editor

- Maximum Crossfade Increased to 65.535 Seconds
- Line and Dot Modes
- Zero Line
- Ability to Play a Locked Sound File

Sequence Editor

- Voice Check
- SMPTE Coast
- Edit Filter
- Global Editing
  - Duration
  - Velocity
  - Real Time Effects
- Fit to Time
- Justify
- Undo

Direct-to-Disk

- Assignable Outputs
- Digital Bouncing
- Waveform Display
- Slide Command with Preview

RELEASE 1.0

** Released December 1988*

Final Release 2.05

HARDWARE REQUIREMENTS :

General

- Macintosh II with 2MB RAM,
- Interal Hard Drive, and TrackBall
- System Winchester Drive (SCSI or IMI)
- SuperFloppy Drive
- 60K or 64K Internal Memory

Main Computer

- Model D Processor with 512K External Memory

Slave Computer

- Model C Processor with 512K External Memory

* Introduction of Synclavier 3200 and Synclavier 9600

SYSTEM ENHANCEMENTS :

Systemwide

- VITC
- VK Button Panel on Macintosh II
- 96 Poly Sampling Voices Supported

Direct-to-Disk

- Event List Editor
  - Hear Files by Clicking
  - Scroll to Any Sequencer Track
  - User Controlled Page Format
  - Display Scrolls with Sequence
  - Ripple Editing
- New Syncronization Panel
  - Compute SMPTE Offset
  - Display Offset
  - Compute Event Time
- Saving and Recalling Defaults

MIDI

- Multitrack MIDI Recording
- Support of System Exclusive Messages

Sequencer

- Modifying Track Timbres with SKT
- Looped Sound Files Trigger Regardless of Start Point

RELEASE 2.0

** Released April 1989*
Final Release 2.05

HARDWARE REQUIREMENTS :

* same as Release 1.0

Time Scale Modification
- DSP70 Card

Digital Transfer
- Digital Transfer Module

MaxTrax
- Additional D-to-D Voices
- Upgraded Meter Bridge

SYSTEM ENHANCEMENTS :

Systemwide
- Time Scale Modification
- Direct Digital Transfer
- MaxTrax
- Fixes All Major Release 1.0 Bugs

Macintosh
- Print Any Screen
- Custom Colors for the VK Panel

Sequencer
- Erase Sequencer Tracks without Erasing Track Timbres

Monitor
- User Defined Macros

RELEASE 2.1

** Released October 1989*

HARDWARE REQUIREMENTS :

General

- Macintosh II with 2MB RAM,
- Interal Hard Drive, and TrackBall
- System Winchester Drive (SCSI or IMI)
- SuperFloppy Drive
- 60K or 64K Internal Memory

Main Computer

- Model D Processor with 1536K External Memory

Slave Computer

- Model C Processor with 512K External Memory

EditView

- D115 board, MAC422 Board, and RS422 Cable

* Optical Transfer to Direct-to-Disk requires LMS Laser Drive

** DSP70 Card is Required for Sample Rate Conversion in the Transfer Process

SYSTEM ENHANCEMENTS :

Macintosh

- EditView - Version 1.0

Sound File Directory

- Sampling Rate and Mono/Stero Fields

Direct-to-Disk

- Analog Crossfades
  - Accessable from Cue Trim Panel or EditView
- Patriot Data BackUp Verificaion - New Data Format
- Improved Error Messages For BackUp System
- O Page Can Display Most Recent Message
- New Cue Structure Allows For Sequencer to Store Cue Edits
  - "Replace in Sequence" from Cue Editor
- Simultaneous Playback of Cues from Same D-to-D Track
- Trim Cues from Events List Editor
- Optical Transfer

Time Scale Modification

- New DSP Algorithm Provides Sample Rate Conversion for Optical Transfer

RELEASE 2.2

** Released December 1989*

Final Release 2.21

HARDWARE REQUIREMENTS :

* same as Release 2.1

EditView

- D115 board, MAC422 Board, and RS422 Cable

MIDInet

- D115 board, MAC422 Board, RS422 Cable and MIDInet Module

* Macintosh Requires System 6.0.3 or Later Software

** Introduction of Synclavier 6400

SYSTEM ENHANCEMENTS :

Macintosh

- MIDInet - Version 1.0
- EditView

- Real-Time Scrolling of Display

Time Scale Modification

- Algorithm Three

RELEASE 2.3

** Released March 1990*

HARDWARE REQUIREMENTS :

* same as Release 2.1

EditView

- D115 board, MAC422 Board, and RS422 Cable

MIDInet

- D115 board, MAC422 Board, RS422 Cable and MIDInet Module

Conform

- D115 board, MAC422 Board, CMX Cable, and RS422 Cable

SYSTEM ENHANCEMENTS :

Macintosh

- CMX AutoConform - Version 1.0
- New MIDInet Commands
  - Show MIDInet Tracks Only
  - Show All Active Tracks
  - Auto Display New Tracks

RELEASE 2.4

** Released July 1990*

HARDWARE REQUIREMENTS :

* same as Release 2.1

SYSTEM ENHANCEMENTS :

Direct-to-Disk

- WangDAT
  - Introduction of the "Add" Command on O Page
- NTSC 30 Frame Time Code

EditView

- Tool Palette
- Edit Cues Directly from Handles
- Block Command
- Cut, Copy, Paste, and Clear Available for Cue Editing
- Event Name and Caption Are Displayed At Top of Window
- Arrows at Upper Right Indicate RS-422 Communication
- Time Display Ruler Related to Time Format

MIDInet

- Blocks May Be Sorted
- Clean Up Window Command
- Routings Follow Timbre
- MIDInet Addresses 128 Tracks
- MIDInet Expansion Modules

CMX AutoConform

- Recording and Conforming of Individual Events
- Events Can Be Enabled and Disabled
- Checkerboarding
- NTSC and PAL Video Formats
- New Record Preferences
  - Ampex VPR3 Protocol
  - Direct-to-Disk Input assignment
- Erase Selected Audio
- Video Events Track Assignable through Conform Preferences

RELEASE 2.5

** Released October 1990*

Final Release 2.51

HARDWARE REQUIREMENTS :

* same as Release 2.1

SYSTEM ENHANCEMENTS :

Systemwide

- Support for Magneto Optical
- Introduction of the Tripp Keyboard
- Support for More Combinations of Patriots and WangDAT

RELEASE 2.6

** Released January 1991*

HARDWARE REQUIREMENTS :

General

- Macintosh II with 4MB RAM,
- Interal Hard Drive, and TrackBall
- System Winchester Drive (SCSI or IMI)
- SuperFloppy Drive
- 60K or 64K Internal Memory

Main Computer

- Model D Processor with 1536K External Memory

Slave Computer

- Model C Processor with 512K External Memory

* Machine Control for EditView Requires CMX Cable

SYSTEM ENHANCEMENTS :

Systemwide

- User-Defined Event Look-Back Feature

Event List Editor

- Ability to Drag Groups of Events

Macintosh

- Journaling
- System Remembers Location and Size of Windows

EditView

- Machine Control
- Regional Editing
  - Copy
  - Cut
  - Paste
  - Fill
  - Fill with Leader
  - Insert
  - Insert Leader
  - Delete Time
  - Extract
  - Exchange
- Normal and Fine Scrub Modes
- Locate to Any Time Field

RELEASE 2.7

** Released June 1991*

HARDWARE REQUIREMENTS :

* same as Release 2.6

SYSTEM ENHANCEMENTS :

Systemwide

- Software Consolidated into 2 RTP's
- Enhanced FM Synthesis
  - More Accurate Performance
  - Improved Timing with Multichannel Outputs

Sequencer

- 1 Microsecond Resolution
- Tempo and Meter Mapping

Direct-to-Disk

- New WangDAT Commands
  - Show Project Info
  - Skip Forward and Skip Backward
  - Verify and Verify All

Macintosh

- Eve Key Copy Protection
- Stand-Alone NED Applications
- TransferMation - Version 1.0
  - Motion Panel
  - Librarian
  - Key Mapper
  - On-Line Help

EditView

- Full Color Graphics
- RAM Events
  - Editing of Start and End Times
  - Editing of Pitch and Velocity

MIDInet

- Import MIDI File
- New Cursor Tools

* Live Click Feature Temporarily Disabled

RELEASE 2.8

** Released September 1991*

Final Release 2.81

HARDWARE REQUIREMENTS :

* same as Release 2.6

SYSTEM ENHANCEMENTS :

Systemwide

- Support of the Stramp SR System
- Sequencer Place Track is the Same for All Applications

Sequencer

- Live Click Enhancements
  - Conform Previously Recorded Tracks to Any Click

EditView

- Cue Style Editing of RAM Events
- Scrub RAM Events
- Display Captions

TransferMation

- Improved Display and Search Features
  - Sync Times
  - W0: and W1: Sound File Information
  - Insert and Delete Columns
- On-Line Icons
- Transport Displays Mark Point Labels
- Transfer from Optical to Direct-to-Disk

MIDInet

- Full Color Graphics
- MIDI File Import Preferences
- Export MIDI File

CMX AutoConform

- Full Color Graphics
- Maintain Sync During Record Preference

RELEASE 3.0

** Released February 1992*

HARDWARE REQUIREMENTS :

* same as Release 2.6

** 8 Megabytes of RAM Suggested for Macintosh*

SYSTEM ENHANCEMENTS :

Systemwide

- RTP bypasses Welcome Menu
- Toggle Between NED-Style Sustain and MIDI Sustain

Direct-to-Disk

- Optimized Output Routing to Minimize Dropouts
- Blocking Cues Will Not Add Unnecessary Crossfades

Macintosh

- Software Installer Program
- Support of System 7

TransferMation

- Introduction of Record Panel
  - Allocate and Cue Punch Modes
  - Manual and Auto Triggers
  - Auto Place and Auto Select Options
- Introduction of Patch Bay
  - Track Names and Playback Modes
  - Input Routing
- Record Functions Added to Key Mapper

Librarian

- Place Sound Files from Optical and Winchester
- Display and Place Sounds from RAM
- Optical Sounds Can Be Placed Onto Note or Cue Tracks
- Direct-to-Disk Project Can Be Changed from Librarian
- Instant Updating of Direct-to-Disk and RAM Indices.
- Most Recent 32 Search Strings Are Stored

EditView

- Show Outputs
- Replace Cue Feature
- Machine Control Supports Sony-Compatible Panasonic MII Video Deck
- Support of up to 4 Serial Ports via Hurdler-HDS NuBus Board

CMX AutoConform

- Machine Control Supports Sony-Compatible Panasonic MII Video Deck

RELEASE 3.1

** Released June 1992*

HARDWARE REQUIREMENTS :

* same as Release 2.6

** 8 Megabytes of RAM Suggested for Macintosh*

SYSTEM ENHANCEMENTS :

Direct-to-Disk

- Simple Cue Bounce from the Record Panel of the Audio Event Editor

TransferMation

- A Settings Menu Has Been Added Containing New and Old Features
  - Key Mapper
  - Synchronization
  - Machine Control Preferences
  - Mixer Control Preferences
  - Audio I/O Configure
  - External Sync
  - Machine Control
- Machine Control Added to Transport Window

Librarian

- Place Menu Containing New Place Features
  - Paste or Insert at Current, In, Out, Sync or Mark Times
  - Chaining and Replacing
- Importing and Exporting Text Files
- Display Sequences and Load by Double-Clicking
- Shift-Clicking and Command-Clicking Supported When Showing All Volumes CMX AutoConform
- Duplicate Selected Events Command Allows Recording of Multiple Takes
- Rehearse Mode and Rehearse Loop Commands
- Edit Any Numeric Field
- The LitCube May Be Used with the Stramp SR System (Taker Box)
- Head and Tail Can Be Specified to the Millisecond

Release Notes for Synclavier Release 4.02 dated May 1, 1997

Welcome, and thanks for your continued support of our software development efforts for your Synclavier!

The first 4 months of 1997 have been both productive and exciting, notwithstanding the traditional hair-pulling and teeth-gnashing that seem to go along with all software development efforts. In capsule form, during this period of time we have

- Added Matt Bucy to our staff on a part time basis to clean up and add features to the Macintosh software
- Located and cleaned up virtually all of the New England Digital "XPL" software
- Located and began testing and rebuilding much of the New England Digital Macintosh software
- Fixed the few minor bugs that were reported in Release 4.01
- Fixed some long-standing bugs in the Real Time software
- Added major new capabilities in the SCSI area including the support of removable media disk drives
- Added some important features to the Real Time Software, particularly in the MIDI area
- Extensively modified and expanded the Optical Disk Utilities

Please let me know how these features work for you. And thanks again for joining our software update program!

Cameron Jones
May, 1997

Data Interchange Compatibility

Real time data (e.g. sequences, sound files, timbres, etc.) may be freely interchanged between release 4.02 and and earlier releases. These data structures have not been changed in any way.

There are, however, some incompatibilities between the old MONITOR and the new Real Time Software and vice-versa that will make it difficult, although not impossible, to intermingle the Monitor and RTP versions. In particular, the new Monitor supports two optical disk drives, and supports a much greater diversity of SCSI addresses for optical storage. Earlier utilities and Real Time Software will not recognize the new settings.

If there is an urgent reason to intermingle new and old software, using an earlier version of CONFIGUR may be your best work-around. Please let me know right away if there is some problem with the new software that can only alleviated by reverting to an earlier release.

What's in Release 4.02

4.02 contains a number of bug fixes, plus a host of new storage-related features. It also adds MIDI Time Code capability to the Real Time Software.

Additions to the operating system and utilities:

- Improved SCSI error recover for media errors and other drive problems
- Support for removable media hard drives as W0 and W1 from the MONITOR and the Real Time Software
- Support for a greater range of "optical" devices, including using a standard SCSI hard drive or SCSI removable hard drive as an "optical" device. In particular, 512-byte sector SCSI devices are now supported as "optical" devices.
- Newly released "optical" utilities for copying and/or combining optical media and performing other optical file management tasks
- Expansion to 8.191 gigabytes of storage for W0 and W1 (warning: additional testing is needed in this area; use at your own risk!!!)
- Improvements to FORMCOPY and CONFIGUR
- Better support of higher baud rates in "NED Startup"
- MONITOR enhancements with the CAT command, as well as greater use of "megabyte" settings.

Changes to the Real Time Software:

- Improved startup defaults for the Recorder screen (G page)
- Improved startup defaults for the Audio Event Editor "Event" panel
- Improved operation of the MIDI button
- Bug fixes to the MIDI Song Position Pointer software
- Bug fixes in the MIDI Sync software, for both input sync and output sync

Changes to the Macintosh Software:

- Keyless EditView, AutoConform, MidiNet
- PowerPC Native NED Startup

What follows...

... is an area-by-area description of what's new in the software. Enjoy!

NED Startup

"NED Startup" is undergoing some new development at this time. First, I have converted the source to "CodeWarrior", which lets us offer both a 68k and PowerPC Macintosh version. I improved how "NED Startup" handles the overwhelming beeps that occasionaly emit from the Synclavier. I also improved the load balancing with the Macintosh operating system that occasionally would create audio dropouts while scrubbing on the Q-page and the L-page.

I also fixed a problem with XON/OFF handling that showed up on some PowerPC Macintoshes with System 7.5.3 and beyond.

Lastly, "NED Startup" should fully support 38,400 BAUD on all platforms and users are encouraged to use that high data rate. Please let me know if any problems are encountered at 38,400.

MONITOR

Several bug fixes and improvements were added to the MONITOR:

- "CAT SE" option was added to see file and catalog lengths in sectors at all times. The default is megabytes for directories and divices over 1 megabyte in size.
- EJECT, SPIN, and SLEEP command were added to control removable media hard disks.
- Size of files and subctalogs can expressed in MegaBytes for the SAVE and REPLACE commands, as well as the CREATE command.

See the following section entitled "Using Removable Hard Drives with the Synclavier" for more information.

Here's a summary of the new MONITOR commands:

CAT SE - In response to a user request, I enhanced the MONITOR to allow greater control over the showing of catalog and file lengths in SECTORS vs. MEGABYTES. Versions of the MONITOR prior to release 4.01 always showed file lengths in SECTORS. The January 1, 1997 version of the MONITOR introduced a new feature whereby the contents of small catalogs were shown in sectors, while the contents of longer catalogs were shown in megabytes. the CAT SECTORS (abbreviated "SE" for sectors) directs the MONITOR to show the file lengths in sectors for that command for even the largest of subcatalogs and/or devices.

Variations include:

```
CAT SE
CAT X SE
CAT SE SN   (show SEctors, Sort by Name)
etc. etc. etc.
```

MEGABYTES - I simplified creating large subcatalogs by allowing an 'mb' (for megabytes) specifier with the create command, or the use of a '.' in the size specification. For example

```
CREATE      MYSUBCAT,5000
CREATE      MYSUBCAT,10mb
CREATE      MYSUBCAT,1.5
```

This syntax can be used with SAVE and REPLACE commands as well.

SLEEP, SPIN, EJECT - to help manage data stored on removable media winchesters, 3 new MONITOR commands were added:

SLEEP

```
examples:   SLEEP W0
            SLE  W1
purpose:    causes drive to spin down
```

SPIN

```
examples:   SPIN W0
            SPI  W1
purpose:    causes drive to spin up from sleep state
```

EJECT

```
examples:   EJECT W0
```

EJE W1

purpose: ejects media from removable drives

UTILITY PROGRAM BUG FIXES

- The annoying "screen cleared after copy" bug in FORMCOPY was fixed
- A bug in SHUFFLE that would cause lost storage when dealing with very large subcatalogs has been fixed (subcatalogs greater than 200 megabytes in size)
- Simplified CONFIGUR settings for "optical" storage
- Fully flexible "Optical" SCSI addressing
- Support of two optical disks in CONFIGUR (for use with OPCOPY)

See the following sections regarding CONFIGUR, .INDEX and .INDEX1, and the new Optical Disk Utilities for greater detail.

SCSI Error Recovery Improvements

To address a long-standing weakness in the Synclavier's SCSI implementation, I added improved low level error recovery to the SCSI drivers. Since much of the Synclavier software was written in the days before SCSI (who else remembers those days, by the way?), there was no coherent approach in the software for the handling of SCSI errors.

My goal in improving the SCSI error recovery was to reduce the occurrences of long and extended blasts of system beeps which occurred, for example, when the RTP was started with a missing W1.

I was not able to eliminate all occurrences of the beeping, but I believe you will notice significant improvement.

In particular, I added SCSI error handling to FORMCOPY. If a SCSI error occurs (either reading or writing a file) using FORMCOPY, the user is prompted to continue with the rest of the files or to quit. If the user chooses to continue, FORMCOPY reminds the user that some files were skipped due to disk errors at the end of the copy process.

I also verified the SCSI error recovery that is used in the OPCOPY optical disk copy utility (newly released; see below). Disk errors encountered by OPCOPY are logged to the W0:COPYLOG output file.

Lastly, I added SCSI error recovery to the Real Time Software. The most common reported problem was the RTP crashing trying to call up a sound file that could not be read. This has been fixed in both the simple recall, audition, and the audition-via-DTD cases. The second common reported case was the system crashing while constructing the sound file directory. This case has also been fixed. I also believe I added error recovery to all the places sequences are stored to or recalled from the disk.

Using Removable Hard Drives with the Synclavier

Release 4.02 offers new support for removable media hard drives. Modern hard drives such as the IoMega JAZ drive and drives made by Tahiti and Syquest are better supported by the system in release 4.02.

Additionally, any hard drive, either removable or fixed, may be used as an N.E.D. "optical" drive. The Tahiti-IV (double sided magneto optical; 1.3 gigabytes each side) and the IoMega JAZ drives are well-suited for use as an "optical" drive. Additionally, larger Winchester hard drives (up to 8 gigabytes) may be used in this manner.

Removable drives used as W0: or W1: are automatically sensed by the MONITOR. An EJECT command (EJECT W0 or EJECT W1) has been added to the MONITOR to provide preliminary management of removable media drives. The SLEEP W0 or SLEEP W1 command can be used to spin-down a hard drive; the corresponding SPIN W0 and SPIN W1 are also available.

Either or both W0 and W1 may be removable. Additionally, multiple removable drives can be concatenated on either W0 or W1 to provide for yet increased capacity, although this technique is not recommended due to the numerous possibilities for inserting the wrong media in the wrong drive at the wrong time with resulting data loss.

The system limitation for W0 and W1 has been increased to 8.191 gigabytes each. This area of the software needs additional testing, and any one wishing to fully utilize this feature should consult with DEMAS and, hopefully, offer their drive for some extended testing (non-destructive testing, of course!).

Using a Removable W1 with the Real Time Software

Control over removable media was added to the "B" page of the real time software. If a removable media W1 drive is connected to the system, an "EJECT W1" or a "MOUNT W1" button will appear on the upper right side of the screen. This button is used to eject the media from W1, or to inform the software that a new media has been inserted.

This mechanism should provide greater opportunities for improved sound file management. The most apparent limitation of this technique at the current time is that the entire sound file list must be reconstructed by scanning the disk whenever the media is changed. Unfortunately, W0 must be rescanned even when just the media in W1 is changed! I can perhaps address this limitation in a later release of the software if there is sufficient interest in removable media devices.

Additionally, it might be possible to improve the entire sound file list process by storing some pre-computed information on disk. Please let me know what your interest in this area is.

New CONFIGUR Options for "Optical" drives

Release 4.02 includes an enhanced CONFIGUR program that simplifies installation of multiple SCSI devices. The default SCSI addresses associated with W1 have been changed to more easily match most people's configuration. Additionally, the DELETE key may be used to quickly remove a device from the configuration list once the cursor is properly positioned in the device column.

The new CONFIGUR utility also allows the placing of SCSI "optical" drives at any SCSI address (any board, any target). Of course, SCSI ID 6 is used by the ABLE computer itself, and SCSI ID 7 is used by the Macintosh, so, only SCSI Id's 0-5 are truly available for Winchester and "optical" drives.

Additionally, the new CONFIGUR provides for the listing of two "optical" drives in the system configuration. This capability is used in conjunction with the OPCOPY utility described below. The two "optical" drives are called, somewhat confusingly, "O0" and "O1", as in "O"-Zero and "O"-One. "O1" may only be accessed by OPCOPY at the current time, and is not available for use by the Real Time Software.

Using A Hard Drive as an "Optical"

Release 4.02 allows the use of any Winchester hard drive (either removable or fixed media) as an N.E.D. "optical" drive. The N.E.D. "optical" format allows for indexing of sound files by category. The N.E.D. "Winchester" format allows for easy access to each file, but has no indexing capabilities and subcatalogs must, of course, be manually created.

Expanded Optical Disk .INDEX Capacity

To address the needs of customer sites with a large number of optical disk media in use, the software was modified to support two .INDEX subcatalogs for the storage of "Optical" disk index files. These subcatalogs are named ".INDEX" and ".INDEX1".

If you are using more than 128 Optical disk media, you have likely experienced the problem of not enough room for more entries in the .INDEX subcatalog.

The .INDEX1 subcatalog is not automatically created during the software installation process. This subcatalog must be manually created from the MONITOR, for example by the command:

CRE .INDEX1, large 1.0

An alternative mechanism that will work well for some users it to rename .INDEX to be .INDEX1, and create a new empty subcatalog called .INDEX. This automatically moves all of the existing .INDEX files into .INDEX1.

Occasionally, you might have to manually move a particular .INDEX file from .INDEX to .INDEX1 to keep the files relatively in balance between the two directories. The software will create all new .INDEX files in the .INDEX directory, but existing files in .INDEX1 will be kept there even if the associated optical disk is modified (e.g. "updated").

Newly Released Optical Utilities: OPVOLUME, OPUPDATE, OPCOPY, OPLIST

Release 4.02 includes a freshly tweaked set of Optical Disk Utilities. These utilities have been enhanced to support both Optical-Zero and Optical-One. They also support the use of standard SCSI hard drives as an "Optical" device.

These utilities are automatically installed in the .SYSTEM folder during installation. To run one of the utilities, just type the name of that utility into the MONITOR as if you were activating FORMCOPY.

These utilities include:

OPVOLUME — Prints out information about each "optical" drive and the name of the media that is in the drive.

```
Optical Volume ID Utility - 1 March 1997

Utility to print out name of Optical Volume in O0: and O1:

Optical Zero: "O0:"  iomega  jaz 1GB
  Volume Name:    COPY3B
   Serial Number:  00004
   Megabytes used: 387  (39% full)  Megabytes available: 600

Optical One:  "O1:"  MaxoptixT3-1304
  Could not read volume header:
     S$SenseKey =  00008  Media is Blank
     C#Status   =  00000  Good Catalog Status
```

OPUPDATE — Constructs or updates the .INDEX file for an "optical" volume. OPUPDATE provides for choosing between Optical-Zero and Optical-One, and shows the name of the volume in the drive before proceeding.

```
Optical Index File Update Utility - 1 April 1997

Utility to update Optical Volume Index File.

Instructions:
  Press <RETURN> to construct or update the .INDEX file
          for the Optical Volume shown below.

  Press <SPACE> to select a different Optical Drive
  Press <BREAK> or Q to quit

Optical One : "O1:"  MaxoptixT3-1304
  Volume Name:   COPY3B
  Serial Number:    255
  Megabytes used: 145  (30% full)  Megabytes available: 335
```

OPLIST

Uses a .INDEX file to present a list of all the files and their categories on an optical volume. The output of this utility may be captured to a Macintosh text file for use by other data base or searching programs.

```
Optical Disk Listing Utility  version of 1 April 1997

Enter name of index file or <RETURN> to quit: copy3b
Display File List [Y(es) or N(o)]? Yes
Display Category List [Y(es) or N(o)]? Yes
Display all file information [Y(es) or N(o)]? Yes
Send output to printer [Y(es) or N(o)]? No

Volume Name:   COPY3B

Creation Date:  18-OCT-90
Creation Time:  09:23:00 PM
Caption:       Sound Ideas Sound Effects Library

No. Files:     132
No. Categories: 42

list of all the files and captions follow...
```

OPCOPY

OPCOPY is a general purpose optical media copy utility that can be used to duplicate optical media, or to combine two (or more) optical media onto 1. It should be particularly useful for distributing sound libraries within a mutli-site facility, and for simplifying the process of upgrading from the older 12" WORM technology to new devices.

OPCOPY creates a log of all file activity in the file W0:COPYLOG so that unattended copying operations can be reviewed.

While OPCOPY does not allow the operator to select individual files to be copied, when copying to a non-blank media it does let you specify which file to start with. This lets a copy operation be resumed in the case of a disk error or other interruption.

Optical Disk Copy Utility - 1 April 1997

Instructions for OPCOPY:
1) Information on both optical volumes is shown below
2) press <RETURN> to copy all files as shown
3) press <SPACE> or <i> to interchange source and destination drives
4) Press <BREAK> or Q to quit

FROM: Optical Zero: "O0:" iomega jaz 1GB
Volume Name: CJMEDIA
Serial Number: 0
Megabytes used: 387 (39% full) for 130 files

TO: Optical One : "O1:"
Could not read volume header:
S$SenseKey = -2 Selection Failed; The Drive is off or not connected
C#Status = 0 Good Catalog Status

Status:
DESTINATION Drive is not ready; see specific error message above

Bug Fixes and Enhancements to the Real Time Software

Miscellaneous RTP changes and bug fixes:

- I defaulted the Recorder screen to show 3 tracks upon startup
- I defaulted the Events panel to show a track in every column on startup
- I fixed inconsistent lighting of the "MIDI" button
- The MIDI Song Position Pointer message should be correct in all cases

Changes to the MIDI Button

I received several bug reports pointing out inconsistencies in the operation of the MIDI button. In particular, changing to MIDI IN SYNC or MIDI AUX SYNC while SMPTE Sync was active did not work from the button panel. Additionally, the Sync Panel screen would not update in some cases.

To address these bugs and to provide compatibility with the MIDI Time Code implementation, I changed how MIDI IN SYNC and MIDI AUX SYNC are activated from the button panel. The old button combination was to hold the external sync button and press the MIDI button. The new button combination is to hold the MIDI button and press the External Sync button. This new button combination is compatible with how SMPTE is turned on or off, as well has how MIDI Time Code output is turned on and off.

The Sync Panel sync setting should update correctly in all cases now.

As I describe in a later section on MIDI Time Code, the MIDI Sync Output can now be activated and directed from the button panel as well as from the "J" screen.

MIDI Song Position Pointer bug fixes

There were several long-standing bugs in earlier releases that caused incorrect MIDI Song Position Pointer messages to be created. Firstly, the MIDI Song Position Pointer message was virtually always wrong when locating more than 1 minute into the sequence. The most common bug report of this problem was that the MIDI Song Position Pointer message was wrong after bar 32.

Additionally, there were several bugs that showed up when creating MIDI Sync output while chasing SMPTE time code.

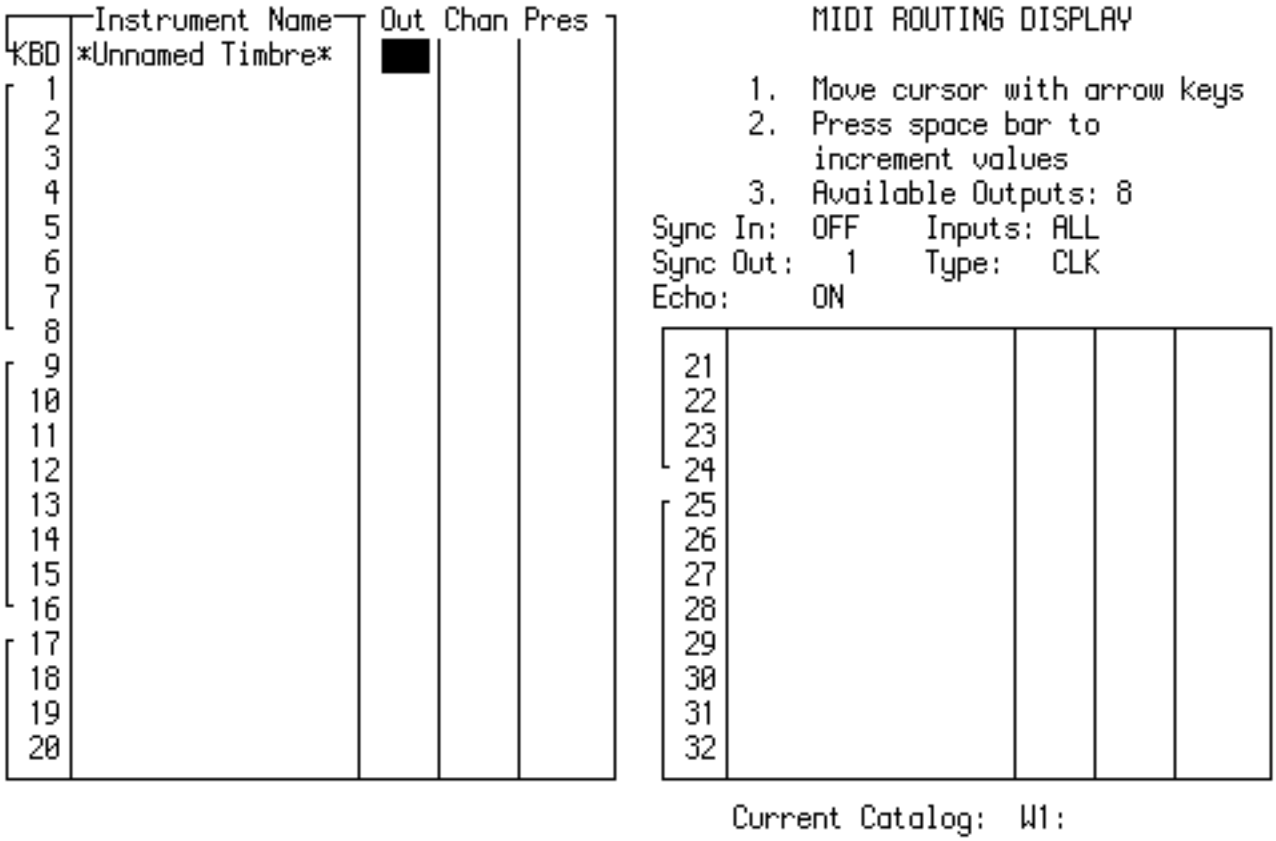
I have fixed these bugs and tested this area quite thoroughly. However, I would like to do some more testing with a real sequence, especially one that uses a tempo-meter map. If you would care to offer a sequence for testing, please contact me.

MIDI Time Code

An implementation of MIDI time code has been added to the Real Time Software. This feature allows the Real Time Software to create MIDI Time Code output both when operating as a master and when syncing to SMPTE or VITC code.

Using MIDI Time Code

MIDI Time Code can be activated from either the J screen ("MIDI Routing Display") or from the button panel. Here's the new layout of the J screen:



Activating MIDI Time Code Output from the J Screen

I added a new field to the J screen that provides for specifying either standard MIDI Clock/MIDI Song Position Pointer type synchronization, or for the creation of MIDI Time Code. The "Type" field specifies CLK for standard MIDI clock synchronization, or TC for MIDI Time Code. The field can be accessed either by arrow keys or the mouse and is changed with the space bar.

The other fields operate as before.

Activating MIDI Time Code Output and MIDI Sync Output from the Button Panel

The MIDI and SMPTE buttons are used to activate or deactivate MIDI Time Code Output or MIDI Sync Output from the button panel. Press and hold the MIDI button, and then press the SMPTE button. The current MIDI sync format (either MIDI Clock or MIDI Time Code) will be displayed allong with which MIDI output is selected, or the word OFF if no output is selected. Continue holding the MIDI button and press the SMPTE button again to change between MIDI Clock synchronization and MIDI Time Code synchronization.

The MIDI button can be released once the desired synchronization type is selected.

The knob is used to specify which MIDI output will contain the MIDI Clock or MIDI Time Code bytes. When the MIDI Synchronization format is displayed in the window, the External Sync button can be used to select which MTC frame style is desired.

Here are some sample window displays:

or

MIDI Time code and the SMPTE Offset

The SMPTE Offset field that is entered from the SMPTE button (or, of course, from the Audio Event Editor Sync Panel) is fully incorporated into the MIDI Time Code signal. The SMPTE Offset that is dialed in represents the precise MIDI Time Code time of the first click of the sequence.

The frame-style and frame-speed of the MIDI Time Code signal is also controlled by the SMPTE settings entered from the button panel or from one of several screen locations. 29.97 FPS Drop Frame, 30 Frame, 25 Frame, 24 Frame, and NTSC 30 Frame codes are supported.

Viewing the current MIDI Time Code time

The current out-goint MIDI Time Code value can be shown in the lower display window as if it were incoming SMPTE timecode. The display is toggled between showing measures:beats and the MIDI Time Code by pressing the SMPTE button once MIDI Time Code output has been enabled.

The MIDI Time Code display is updated while playing, during fast-forward and rewind, and after locating.

MIDI Time Code while Scrubbing

The software emits MIDI Time Code "full-frame" messages while scrubbing audio from EditView in the "full sequence" scrubbing mode. When scrubbing a single cue, MIDI Time Code is not created.

YOUR VOTE COUNTS!

I would like to hear your input on what features to work on over the summer. There are many good ideas floating around. I want your input on which areas of software are in greatest need of development.

Please rate your interest in the following areas.

Area	High	Medium	Low

"ZIP" Drive as Floppy F0
- 100 Megs but would require dedicated SCSI ID

SCSI Hard drive as F0/F1/R0/R1
- could theoretically provide 32 more gigabytes of on-line storage.

Boot directly from W0
- could theoretically eliminate F0 altogether.

Support of Removable Media drives in the Direct-to-Disk
- commands to eject, mount, sleep, and spin-up could provide more reliable control over removable media in the Direct-to-Disk

MIDI Machine Control
- Could support both in and out MMC for track arming, transport controls, etc.

return to: DEMAS, Inc.
9 Patricia Court
Enfield NH 03748

or email camjones@shore.net