II. USING THE MEMORY RECORDER

—Preliminary Version—

November 16, 1984

CONTENTS OF THIS MANUAL

In the Introduction you became familiar with the basic operation of
the Synclavier (R) memory recorder. You learned to recall a sequence
from the diskette, to play it back from the beginning or from
midpoint, to stop playback or recording, and to use the fast forward
and rewind functions. You also learned how to solo tracks, loop,
transpose, substitute timbres, and erase.

This section contains further details about multitrack recording. In
it, you will learn how to

* use the click track;
* merge tracks;
* create justified recordings;
* modify and edit recorded sequences;
* store sequences.

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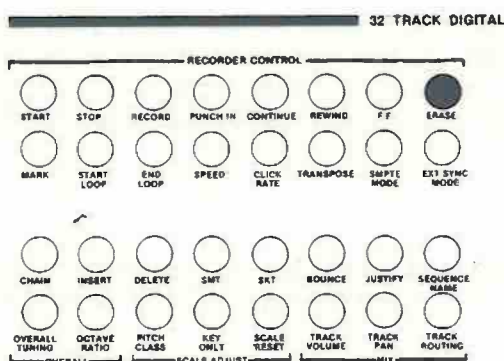errors which may appear in this manual.

The Synclavier (R) memory recorder allows you to record music on up to thirty-two tracks. You record on one track at a time, building a complex sequence. Before you start recording, you will need to know some preliminary information about the system.

System Limits

Before recording, you need to know the limits of your system both in terms of the maximum number of notes that can be recorded in a single sequence and the maximum number of notes that can be played back at any one time.

Maximum number of notes

The maximum number of notes that you will be able to record in one sequence will depend on the amount of computer memory installed in your system. If you press the ERASE button in the second panel twice just after you load the system, the maximum number of notes in your system will appear in the display window.

Maximum number of voices

As you learned in the "Introduction," the maximum number of notes you can play simultaneously depends on

a. the number of voices allotted to the keyboard timbre; and
b. the number of voices in your system.

That is, the number of voices in your system must be greater than or equal to the number of notes you are sounding simultaneously times the number of voices in the keyboard timbre.

The same is true for the memory recorder. With the 32-track recorder, there can be potentially up to 34 different timbres sounding simultaneously: one recorded on each of the 32 tracks plus two on the keyboard (the split keyboard is covered in the tabbed section, "Keyboard Control and Real Time Effects.")

However, the total number of voices that can sound simultaneously is still limited by the number of voices in your system. You can record 32 timbres on 32 tracks but the number of sounds you will hear on playback is still determined by the number of voices in your system.

If you have recorded more voices than your system has available, some of the recorded notes will not sound when you play back the sequence. They are still in the memory recorder. You can hear them by soloing different tracks.

Final Decays

In determining the number of voices in use at any given moment, you have to consider the final decays of the recorded notes.

When you record on a track, the computer automatically cuts off each final decay as a new note is played. The final decays of notes recorded on other tracks, however, are not affected. Thus, notes played with timbres with long final decays will limit the number of additional notes you can record simultaneously on other tracks in the recorder.

If you wish to use long final decays in a multitrack sequence, it would be wise to record the tracks with timbres with short final decays first and save the track with a timbre with a long final decay for the last "layer" in the recording session.

Keyboard polyphony control can also be used to limit the number of voices used by notes with long final decays. You can learn about this technique in the tabbed section, "Timbre Design."

As in real time, "bars" will appear in the display window each time you run out of voices in the memory recorder.

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RECORDING A SEQUENCE

You already learned some of the basic techniques for multitrack
recording in the Introduction. Here is a summary of the buttons used
for recalling and playing back already recorded sequences and for
selecting tracks and recording new sequences:

BUTTON	USE	FUNCTION
SEQUENCE	Press once, then press numbered button	Recalls previously recorded sequence from storage
START	Press once Press twice	Starts sequence from first beat Starts sequence from first note
STOP	Press once	Stops sequence
F.F.	Press once	Plays sequence forward in fast mode
REWIND	Press once	Plays sequence backward in fast mode
CONTINUE	Press once	Plays sequence from previous STOP point
TRACK SELECT buttons	Press once	Selects numbered track
CLICK RATE	Press once Press twice Press thrice	Turns click track on, beats-per-minute mode Turns click track on, click period mode Turns click track off
CLICK RATE	With control knob	Establishes new click rate
RECORD	Press once	Selects new track to record notes
REPEAT	Press once	Repeats notes for recording
ARPEGGIATE	Press once	Arpeggiates chords for recording
BOUNCE*	Press twice	Selects justified mode for recording
BOUNCE	Press once	Merges or duplicates notes from one track onto another
ERASE	Press twice Press twice with soloed track	Erases notes from all tracks Erases notes from selected track

*In future releases, the JUSTIFY button will be used to justify
notes.

The <u>Click</u> <u>Track</u>

The click track provides an audible digital metronome. It is used to synchronize recording on more than one track. If you have not already done so, connect the click track output to the sound system through a mixer as described in the "Setup Manual."

You control the volume level of the click track output with your mixer. You can also turn it on and off with the CLICK RATE* button located in the second panel.
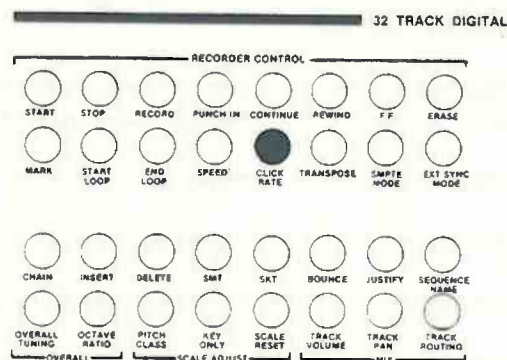
When you first load the system, the click track is audible. To turn it off, press CLICK RATE three times so that the button is blinking. To turn it back on, press CLICK RATE one more time so that the button is lit.

A click rate can be expressed in three ways:

- a rate in beats per minute;

- a period, or time lapse, between clicks;

- a rate in frames per beat (for film synchronization).

The click rate in beats per minute and the click period in milliseconds are reciprocals; that is, as the rate of clicks per minute increases, the period between clicks decreases, and vice versa.

_____

*The CLICK RATE button is also used with BOUNCE for rhythmic justification, described later in this section; and with external synchronization, described in the tabbed section, "Studio Interfaces."

Changing States of the Click Track

When you first load the system, the click track is audible
and is expressed in beats per minutes. If you press CLICK
RATE once, the button will light up and

   120 BEATS/MIN

will appear in the display window. If you press CLICK RATE
again, the button will remain lit and

   500 MILLISEC

will appear in the display window. (This click period is the
reciprocal of the default 120 beats-per-minute click rate.)

If you press CLICK RATE a third time, the button will begin
blinking and the click track will be inaudible during
playback or recording.

The audible or inaudible state of the CLICK RATE button is
retained in memory, even when you turn the button light out
by pressing a different button to change another parameter.

For example, suppose you have pressed CLICK RATE twice, the
button is lit and the click period is displayed in the
display window. If you press another button, say SPEED, the
CLICK RATE button will go out, but the click track output
will remain audible.

If you press CLICK RATE again, the button will again be lit
and the click period will be displayed in the display window.
Now, if you press CLICK RATE once more, the button will blink
and the output will become inaudible. If at this point, you
press another button, the CLICK RATE button will go out but
the inaudible state for the click track will remain in
effect.

Adjusting the Click Rate or Period

The default click rate is 120 clicks per minute. Its
reciprocal, the default click period is 500 milliseconds. To
adjust the default rate or period, you

1. press CLICK RATE so that it's lit (and the display window
    shows either a beat-per-minute or millisecond number);

2. press START to hear the click track output;

3. dial in a new rate or period with the control knob.

When you erase a sequence, you will not erase the current
click rate. And when you store a sequence, the current click
rate will be stored along with it.

Entering the Clicks-in-Frames Mode

When recording music for film synchronization, you may want
to use a click rate expressed in frames per beat instead of
beats per minute. Based on the standard film 24 frames per
second, this click rate allows you to specify the tempo of
the music in film synchronization terms.

To enter the frames-per-click mode,

1. Press the SPEED button in the second panel twice. The
    number 0.960 will appear in the display window. This
    timing adjustment is necessary so that each tick of the
    Synclavier (R) internal clock will exactly equal an
    eighth of a frame.

2. Press CLICK RATE. The display window will show

        12.4 FRAMES/BT.

    This default click rate makes each click last exactly 12
    and 4/8ths frames at the frame rate 24 frames-per-second.
    (The number to the right of the decimal is to the base
    8.)

3. To change the click rate, dial in a new frames-per-click
    rate.

To return to a click rate in beats per minute (or a click
period in milliseconds), press SPEED twice more to return it
to a setting of 1.000.
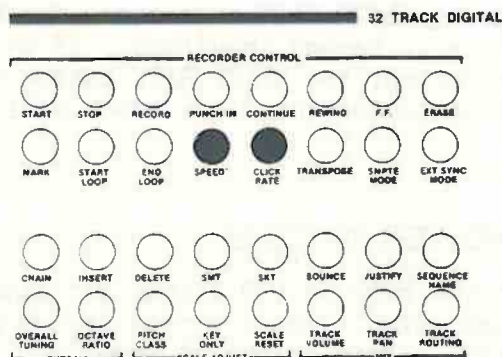
Overdubbing

When you press RECORD, the memory recorder will select the first
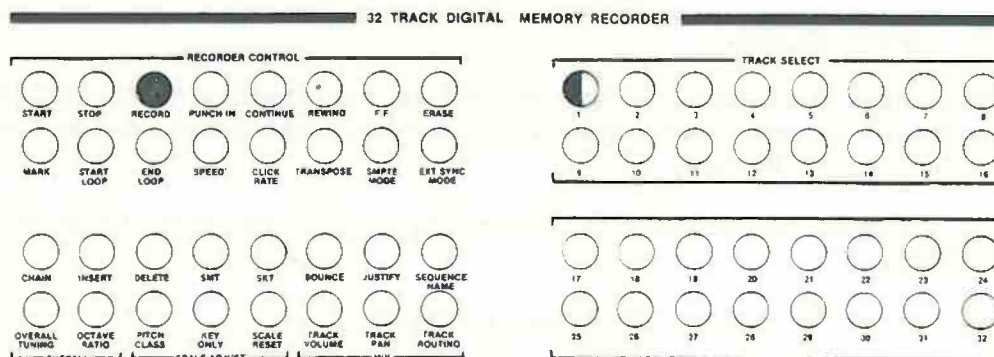empty track for the new recording. If you are recording the first
notes of a sequence, Button 1 under TRACK SELECT will start to blink
when you press RECORD and all the notes you play will be recorded on
Track 1.

If you press STOP and then press RECORD again, the Button 2 under
TRACK SELECT will start to blink. The notes you recorded on Track 1
will begin to play while the new notes you play will be recorded on
Track 2. Each time you press RECORD, a new empty track will be
automatically selected.

Thus, you can easily correct a mistake on one track without
disturbing the other tracks. If you record the same timbre on two or
more different tracks, you can bounce, or merge, them all down to one
track once you are satisfied with the recorded sequence.

You can also select a track other than the first empty track to
record on. To do this,

1. press the desired track button under TRACK SELECT (it will
    blink);

2. press RECORD.

The new notes will be recorded on the track with the blinking button.

You can also record on a track that has already been recorded on,
provided the current keyboard timbre is the same as the timbre
already recorded. If you try to record on a track with a different
timbre recorded on it,

        TIMBRES MUST MATCH FOR RECORD

will appear in the display window.

If you are recording many tracks, you may want to record a new track while listening to the playback of only one other track. To do this,

1. press the button of the recorded track you want to hear (it will blink);

2. press the button of the track you want to record on (it will blink and the button you pressed previously will remain lit);

3. press RECORD.

The notes you play will be recorded on the track with the blinking button. As you record, you will hear only the notes on the track with the lit button.

If you want to record without hearing <u>any</u> of the previously recorded tracks,

1. press the button of an empty track;

2. press the button of the track you want to record on;

3. press RECORD.

Overdubbing

1. Press CLICK RATE and START and dial in a click rate suitable for recording a slow blues. When you have a rate you are comfortable with, press STOP.

2. Recall Instruction Timbre 1-2-5, the clavinet timbre.

3. Press RECORD. Let eight clicks go by before playing. These eight clicks will be used as a count off when you record your second track. (You can choose any number of clicks for a count off at the beginning of a recording.) Play a simple eight- or twelve-bar blues bass line.

4. When you're finished recording, press STOP. The number of notes remaining in the memory recorder will appear in the display window.

5. Play back your bass line by pressing START once (to start at the first beat) or twice (to start at the first note). If you want to hear the music without clicks, press the CLICK RATE button so that it blinks before pressing START.

6. Press STOP.

7. If the click track is off, turn it back on.

8. Press RECORD, wait through the eight count-off beats, and play a set of blues chords along with the click track and with the bass line on Track 1. The notes that you play will be recorded on Track 2.

9. Press STOP.

10. Press START to hear both recorded tracks.

11. Select Timbre 1-1-8.

12. Press Button 1 under TRACK SELECT and then Button 3. Button 1 will be lit and Button 3 blinking.

13. Press RECORD and play a blues melody. You will hear only the bass line you recorded on Track 1 while the new notes you play will be on Track 3.

14. Press STOP.

15. Press Button 1 and Button 3 under TRACK SELECT and then START to hear the playback from all three tracks.

Merging Notes From One Track Onto Another

The BOUNCE button is used to transfer the notes recorded on one track onto another. You can bounce the notes to any empty track or to any track with recorded notes in the exact same timbre.
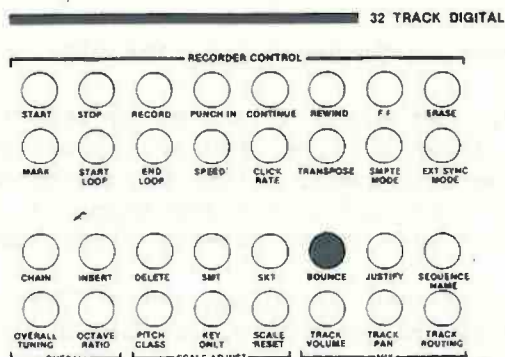
There are two kinds of bounces. You can either

● bounce notes from one track onto another while simultaneously erasing the originating track; or

● copy notes from one track to another so that both tracks have the same notes on them.

The timbres on both tracks must be exactly the same when you BOUNCE notes from one track to another. If they are not, the display window will show the error message

    TIMBRES MUST MATCH FOR BOUNCE

If you try to BOUNCE a very long sequence onto another track, you may run out of memory and the display window will show the error message

    NOT ENOUGH ROOM FOR NEW TIMBRE

```
+------------------------------------------------------------------+
|                                                                  |
|                      Bouncing Notes                              |
|                                                                  |
|   1.   Continue with the sequence you created in the last        |
|        exercise.  The notes on Track 1 and Track 2 should have the |
|        same timbre.                                              |
|                                                                  |
|   2.   Press BOUNCE.  The BOUNCE button will light up and all 32 |
|        TRACK buttons will begin blinking.  The recorder is asking |
|        you which track you want to bounce.                       |
|                                                                  |
|   3.   Press Button 1 under TRACK SELECT (the originating track) |
|        once.                                                     |
|                                                                  |
|   4.   Press Button 2 once.  All 32 TRACK buttons will go out.   |
|        The notes on Track 1 will be merged with those on Track 2. |
|        Track 1 will be erased.  Solo each track to check this out. |
|                                                                  |
|   5.   Press BOUNCE again.                                       |
|                                                                  |
|   6.   Press Button 2 under TRACK SELECT (the new originating    |
|        track) twice.                                             |
|                                                                  |
|   7.   Press Button 1 under TRACK SELECT.  All 32 TRACK buttons  |
|        will go out.  Track 1 and Track 2 now have the same       |
|        sequence recorded on them.  Solo each track to check this |
|        out.                                                      |
|                                                                  |
+------------------------------------------------------------------+
```

Recording From the Midpoint of a Sequence

You can also use RECORD to record from any point in the sequence
after the first note. To do this,

1.   press START (you may want to use the F.F. or REWIND buttons to
     move closer to the point in the sequence where you want to
     continue recording);

2.   press RECORD at the point in the sequence where you want to
     continue recording.

The RECORD button will light up and the recording will take place on
the first available track.

To continue recording on the same track other notes have been
recorded on, solo the track before pressing RECORD. The recording
will take place on the same track, provided the keyboard timbre is
the same as the track timbre. If not, the display window will show

     TIMBRES MUST MATCH FOR RECORDING

When you record on the same track, the new notes will be merged with
the old ones.

Recording With the Repeat and Arpeggiate Functions

The REPEAT and ARPEGGIATE buttons, in the fourth panel, turn on the repeat and arpeggiate functions.

When the repeat function is on, any note you play on the keyboard will be repeated so long as the key is held down. When the arpeggiate function is on, any chord you play will be arpeggiated. The functions can be used separately or together. Both functions are described more fully in the tabbed section, "Timbre Design."

You can turn the repeat and arpeggiate functions on and off either before or during the recording of a sequence and the real-time effect of these buttons will be recorded in the memory recorder.

+--+
| |
| Recording With REPEAT and ARPEGGIATE |
| |
| 1. Clear out the memory recorder by pressing ERASE twice. |
| |
| 2. Select a nonsustaining timbre, such as 1-2-1 or 1-2-2. |
| |
| 3. Press the RATE button under KEYBOARD CONTROL and set a |
| repeat rate of 6.00 Hertz with the control knob. |
| |
| 4. Press RECORD. |
| |
| 5. Play a chord on the keyboard and hold it down. |
| |
| 6. Press REPEAT. You will hear the chord repeated |
| continously. |
| |
| 7. Press ARPEGGIATE. You will hear the chord arpeggiated |
| continuously. |
| |
| 8. Press STOP and then START to hear the repeated and |
| arpeggiated chords played back. |
| |
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Rhythmic Justification

You can automatically "correct" a performance by using the rhythmic justification function accessed by the BOUNCE* button in the second panel.
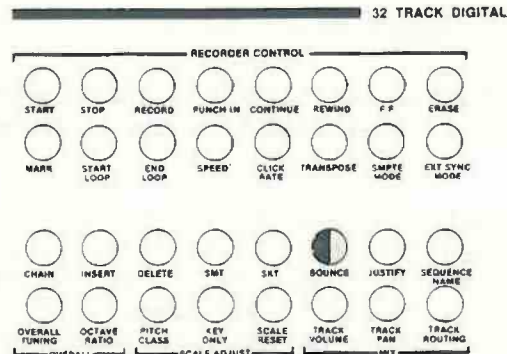
The recorder is in the justification mode whenever the BOUNCE button is blinking. In this mode, the starting time of each note played on the keyboard will be precisely on the beat or subdivided beat during playback, regardless of how inexactly the notes might have been played during recording. The BOUNCE button must be blinking before you press RECORD.

The beat for justification is established by the click rate. For slow tempos, set the click rate so that the shortest note in the sequence occurs on a click. For example, if the sequence has no note shorter than a quarter note, you would set the click rate to one click per quarter note. All notes would then be justified to occur on the click or a multiple of the click.

For faster tempos, you can set the click rate to the beat of the sequence and then select a click rate multiplier which multiplies the click so that additional inaudible "clicks" are produced internally. In effect, this subdivides the beat. You still hear the click only on the beat but rhythmic justification will take place to the closest internal click (or subdivided beat).

For example, if you were recording in 4/4 time with the click rate set to one click for each quarter note, you would set the click rate multiplier to 4 to justify sixteenth notes in the sequence (since there will be four sixteenth notes per quarter-note click). Or set it to 8 to justify thirty-second notes (eight thirty-second notes per quarter-note click).

If you were recording in 6/8 time with the click rate set to two beats per measure, you would set the click rate factor at 3 to justify each eighth note (three eighth notes per dotted-quarter

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*In future releases, the JUSTIFY button in the second panel will be used to turn on the rhythmic justification function.

click) or 6 to justify each sixteenth (six sixteenth notes per dotted-quarter click).

To set the click rate multiplier,

1. press BOUNCE and hold it down while you. . .

2. . . . dial any number from 0 to 16.

The TRACK SELECT buttons will start blinking when you press BOUNCE. To turn them off and place BOUNCE in the blinking mode, press BOUNCE again.

You can use the justified mode to overdub precise polyrhythms onto the same or different tracks. To do this, change the click rate for each overdubbing, maintaining a ratio that represents the ratio of the two rhythms to be merged. For example, if you wanted to record a two against three rhythmic pattern, you would record one track at two-thirds the rate of the second track. The second click rate will not affect the beat, or playback speed, of the previously recorded justified notes.

Other uses of justification include:

●   entering the justified mode before pressing PUNCH IN to assure perfect synchrony when adding new notes to a sequence;

●   overdubbing new tracks with justified meter onto previously recorded unjustified sequences;

●   recording a steady justified tempo in the background of a composition with an expressive unjustifed musical line on top;

Once a sequence is recorded in the unjustified mode, however, it cannot be justified except by rerecording it.

As always, you can use the SPEED setting to alter playback or recording speed. Slowing the speed allows precise justification of extremely short note values.

Recording with Rhythmic Justification

In this exercise you are going to set up a precise three
against two rhythm and then lay in a fast melody over the
rhythmic accompaniment.

1. Clear out the memory recorder by pressing ERASE twice and
   then recall Instruction Timbre 1-2-2, the calimba timbre.

2. Press BOUNCE twice so that the button is blinking.

3. Press CLICK RATE and dial in a click rate of 80 beats per
   minute.

4. Press RECORD. Button 1 under TRACK SELECT will blink. Let
   four clicks go by then then play a series of bass Gs, one
   on each click.

5. Press STOP after four bars (Click 20).

6. CLICK RATE is still lit. Dial a click rate of 120 beats
   per minute.

7. Press Button 3 (or any empty track button) and then Button
   2 under TRACK SELECT. Now you can record Track 2 without
   hearing the notes on Track 1.

8. Press RECORD. Let six clicks go by and then play a series
   of mid-range Gs, one on each click.

9. Press STOP after four bars (Click 30). Turn out Tracks 2
   and 3 and press START to hear the 3 against 2 rhythm.

10. Recall Instruction Timbre 1-1-8, the trumpet timbre.

11. Dial in a click rate of 160 beats per minute.

12. Press BOUNCE and hold it down while you dial a click rate
    multiplier of 4. This will justify all the notes on the
    next recorded track to the nearest sixteenth note. Press
    BOUNCE three more times so that the button is blinking.

13. Press Button 1 under TRACK SELECT and then Button 3. Now
    you can record while hearing only the notes on Track 1.

14. Press RECORD. Let 8 clicks go by and then play a melody in
    the key of G, using notes with different rhythmic values.
    Stop at Click 40.

15. Turn out both Button 1 and Button 3 under TRACK SELECT and
    then press START to hear the entire sequence.

NOTE: You could also record a three against two rhythm with a single click rate by dialing in a click rate multiplier first of 2 to record the duple rhythm and then of 3 to record the triple rhythm. This would be a preferable method when recording fast rhythms.

LOOPING A RECORDED SEQUENCE

In the introductory chapter, you used the ENDLOOP button to establish
an overall da capo loop on your sequence. An overall loop is one
which affects every track in the memory recorder. A da capo loop
always returns to the first note in the composition.

You can place da capo loops on independent tracks, creating
independent loops on different tracks. You can also establish dal
segno points, creating loops which return to an internal point in the
sequence rather than to the first note.

When you make loops, especially independent loops, you will want to
use the justified mode for recording, so that the notes of the loop
are in perfect synchrony with the notes on the other tracks.

Here is a summary of the buttons used for looping:

| BUTTON	USE	FUNCTION
ENDLOOP	Press once	Places loop on sequence or on individual tracks
CONTINUE*	Press once	Specifies startloop point on selected track
BOUNCE**	Press twice	Accesses justified mode to place loop on exact beat

*In future releases, the STARTLOOP button in the second panel will
specify the startloop point.

**In future releases, the justified mode will be accessed by the
JUSTIFY button in the second panel.

Creating an Overall Da Capo Loop

To create an overall da capo loop, you

1. press START to play back the sequence;

2. press ENDLOOP at the desired loop point (the ENDLOOP button will light up).
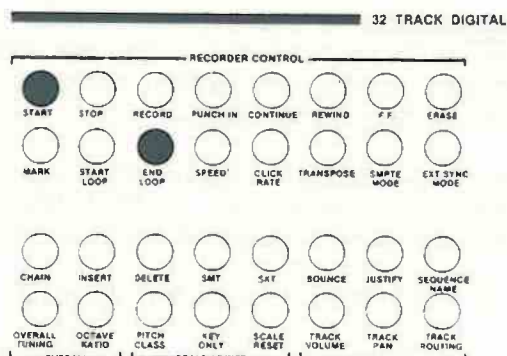
Now the sequence will play to the exact point where you pressed LOOP, return to the beginning note, play to the loop point and so on.

You can justify the loop point by pressing BOUNCE twice so that it's blinking. When you do this, the loop length will be justified so that the entire loop is an integer number of beats. That is, if the loop begins on a beat, the loop will start and end on a beat. If the loop begins on an upbeat, then the loop end point will be justified to end midbeat.

Overall da capo loops will be stored with the sequence.

To remove a loop, press ENDLOOP a second time. Its light will go out.

Creating Independent Da Capo Loops

You can set up separate loops on individual tracks. One track can loop endlessly while the others proceed forward. Or, different tracks can have different length loops. It will be helpful if the sequence has been recorded in the justified mode, although it is not necessary.

To create an independent da capo loop,

1. press BOUNCE twice so that it is blinking;

2. press START to play back the sequence;

3. press the selected track button once (if you want to solo the track) or twice (if you want to hear all tracks) and hold it down while you . . .

4. . . . press the ENDLOOP button at the point in the sequence where you want the loop to start.
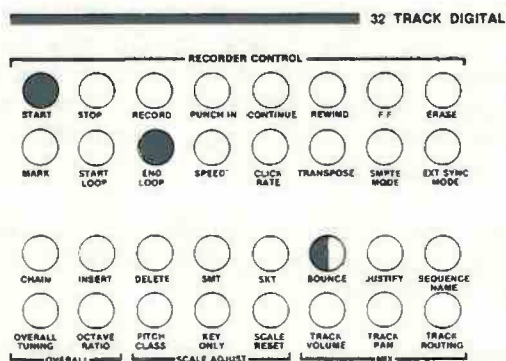
When you press START, the notes on the selected track will play to the point where you pressed ENDLOOP (if you pressed it precisely on the beat) or to the closest beat after you pressed it (if you pressed it slightly off the beat).

The ENDLOOP button will not be lit, since the loop is on a single track. Whenever you press the track button, however, the ENDLOOP button will light up and remain lit so long as the button is held down. To remove an independent da capo loop, hold down the selected track button while you press ENDLOOP again.

An independent loop will be stored with the sequence.

Independent Da Capo Loops

The seventeenth century round, "Ah, Poor Bird," has been recorded here at New England Digital. It has two tracks, one containing the melody and the second a bass ostinato.

1. Recall "Ah, Poor Bird" by pressing SEQUENCE and then Button 2 under TIMBRE/SEQUENCE STORAGE.

2. Select the justified mode by making the BOUNCE button blink.

3. Press START.

4. Press Button 1 under TRACK SELECT twice. Hold it down while you. . .

5. . . . press ENDLOOP after the last beat of the fourth bar (but before what would be the first beat of the following bar).

   The ENDLOOP light will go out when you take your finger off the track button. The track should now be independently looping between the first note on the track and the loop point. If you pressed ENDLOOP too late, remove the loop by holding down TRACK 1 while you press ENDLOOP again. Then place the loop again.

6. Use the same procedure to create an independent loop for Track 2, this time pressing the ENDLOOP button at the end of two bars of notes.

7. Play the sequence back and listen to the two independent loops.

Here is a summary of the procedure:

Creating Overall Dal Segno Loops

A dal segno loop is any loop that returns to a point in the sequence
other than the first note. There are two kinds of dal segno loops:

- those that loop back to a precise instant in the sequence (a note
  or a rest); and

- those that loop back to a specific note.

To loop back to an specific beat (a note or rest) in a sequence,

1. press BOUNCE so that it is blinking;

2. press START to play back the sequence;

3. turn on the CONTINUE button at any point prior to the dal segno
    point or point to which you want to return (this signals the
    system that a dal segno point is coming up);

4. turn off the CONTINUE button to mark the dal segno point;

5. press ENDLOOP at the point from which you want to loop.
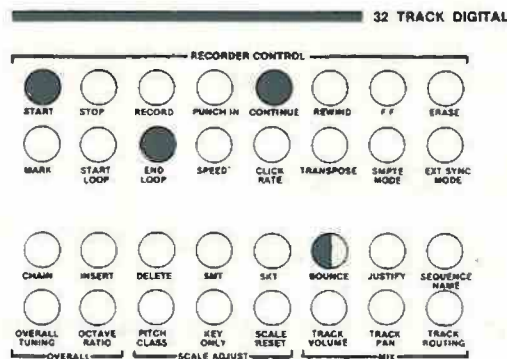
The track will loop from the closest beat to where you pressed
ENDLOOP back to the closest beat where you turned off CONTINUE.

To loop back to a particular note, regardless of whether it occurs on a beat,

1. press BOUNCE so that it is blinking;

2. press START to play back the sequence;

3. turn on CONTINUE at any point prior to the dal segno point (again, this signals the system that a dal segno point is coming up);

4. turn off CONTINUE between the last note before the dal segno point and the first note of the dal segno loop and hold it down until the first note of the loop is played (this marks the start of the loop precisely at the start of that note);

5. press ENDLOOP just before the desired end loop point.

Since the system has been in the justified mode while you specified loop points, a loop with start and end points justified to the precise notes will be created.

Overall dal segno loops will be removed whenever you press START. They cannot be stored with the sequence. If you want to store a sequence with an overall dal segno loop, you will have to create independent dal segno loops on each track (see below).

Creating Independent Dal Segno Loops

The above procedures create overall dal segno loops. To create an independent dal segno loop,

1. press BOUNCE so that it is blinking, if you want to loop to a particular note;

2. press START;

3. press the selected track button either once or twice.

   If you press it once, you will solo the selected track; if you press it twice, you will hear the entire mix although the selected track will be where the loop is placed.

   Continue to hold it down while you. . .

4. . . . turn on CONTINUE at any point prior to the dal segno point;

5. . . . turn off CONTINUE again at any point between the last note before the dal segno point and the first note after;

6. . . . press ENDLOOP just before the loop point.

Independent dal segno loops can be stored with the sequence.

At the end of the last exercise, "Ah, Poor Bird" had an independent da capo loop on each track. In the following exercise, you will bounce the notes on Track 1 to Track 3 and then create a dal segno loop on Track 3. At the end of the exercise, each track will have a different loop.

Independent Dal Segno Loop

1. Make sure you are still in the justified mode.

2. Bounce the notes on Track 1 to Track 3 without erasing the notes on Track 1:

   a. Press BOUNCE once.
   b. Press TRACK 1 twice.
   c. Press TRACK 3 once.

3. Remove the da capo loop from Track 3 by holding down Button 3 while you press ENDLOOP.

4. Press START.

5. Press Button 3 once and hold it down while you. . .

6. . . . turn on CONTINUE at any point during the four beat count-off measure.

7. Continue to hold down Button 3 and turn off CONTINUE at any time after the third note and before the fourth note of the sequence. This will mark the dal segno point at the end of the first bar of notes.

8. Keep holding down Button 3 and press ENDLOOP at the end of the sequence.

   The recorder will loop internally between the point where you pushed CONTINUE the second time and the point where you pushed ENDLOOP.

Here is a summary of the procedure.

MODIFYING A RECORDED SEQUENCE

In addition to looping, there are several other modifications you can
make on previously recorded sequences. As with looping, the changes
you make are memorized by the computer but they only affect the
temporary, working copy of the sequence in the memory recorder. The
sequence stored on the diskette remains in its original form, unless
you deliberately replace it by the storage procedure described in the
section on storing.

Here is a summary of the buttons used to modify recorded sequences:

BUTTON	USE	FUNCTION
SPEED	Press once, turn knob	Changes speed of recorded sequence without changing pitch
TRANSPOSE	Press once, play note above or below middle C	Transposes notes up or down by interval of note played and middle C
SMT	Press once with track button	Select Memory Timbre: marks the track to which selected timbre will be transferred
SKT	Press once with track button	Select Keyboard Timbre: moves timbre from selected track to keyboard

Changing the Speed

In the Synclavier (R) memory recorder, you can change the playback or recording speed without changing the tuning. To do this, you

1. press the SPEED button;

2. dial in any number from 0.000 to 10.00 with the control knob.
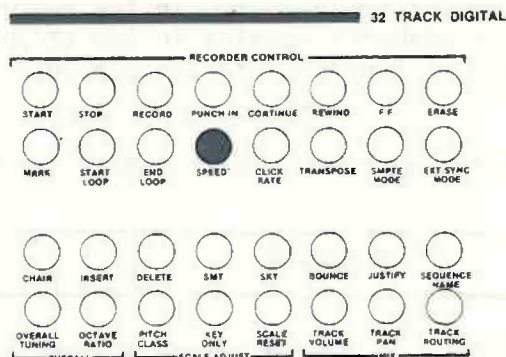
Dialing zero will bring the recorded sequence to a standstill; dialing ten will make its speed ten times the original recorded speed.

It is possible to speed up a recorded sequence by a factor even greater than 10. To do this,

1. before recording, set the speed setting to less than 1.000;

2. make the recording;

3. after recording, set the speed setting to greater than 1.000.

For example, if you record a sequence with the SPEED set at .010 and then set the SPEED after recording to 10.00, the sequence will playback 100 times faster than it was recorded.

Whatever SPEED changes are made from recording to playback, the click track automatically adjusts 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 track when the SPEED setting is 1.000.

When you store a sequence on diskette, the current SPEED setting will be stored along with it.

NOTE: If you press SPEED twice, the SPEED setting will be 0.960 instead of 1.000, the speed setting used when the click rate is in frames instead of milliseconds or beats per minute. Pressing SPEED again will restore the 1.000 speed rate.

Changing the Speed

1. Recall Sequence 1, "Scarborough Fair."

2. Press START and while the sequence loops, press SPEED.

    The SPEED button will light up. The number 1.000 in the
    display window indicates that the sequence is being played
    at its original speed, that is, at 1.000 times its original
    speed.

3. Turn the control knob to the left.

    As the numbers in the window decrease, the speed of the
    sequence will slow down. The pitch will not change.

    When the knob is all the way to the left, the number in the
    window will be .000, and the sequence will be at a complete
    standstill.

4. Turn the control knob to the right.

    As the numbers in the window increase, the speed of the
    sequence will quicken. When the knob is all the way to the
    right, the number will be 10.00, which means the sequence
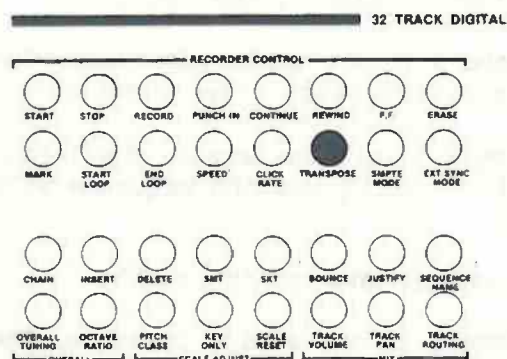   is being played at ten times the original speed.

    At extremely fast playback speeds, some sounds will be
    muffled and indistinct. This is because certain timbres
    will not have a chance to complete their attack and decay
    segments at very fast speeds.

5. Press SPEED again.

    This will return the SPEED setting to 1.000 and the
    sequence to its original speed.

Transposing

In the "Introduction" you learned how to perform transpositions with
the TRANSPOSE button. To review this procedure,

1. press TRANSPOSE;

2. press a key on the Synclavier (R) keyboard. The transposition
    will be calculated on the basis of the interval between the key
    on the keyboard that you press and middle C.

```
                                        ■ 32 TRACK DIGITAL
                    ─── RECORDER CONTROL ───
    ◯      ◯      ◯       ◯        ◯        ◯       ◯      ◯
   START  STOP  RECORD  PUNCH IN  CONTINUE  REWIND  P.F   ERASE

    ◯      ◯      ◯       ◯        ◯        ●       ◯      ◯
   MARK   START  END     SPEED    CLICK    TRANSPOSE SMPTE  EXT SYNC
          LOOP   LOOP              RATE             MODE    MODE

    ◯      ◯      ◯       ◯        ◯        ◯       ◯      ◯
   CHAIN  INSERT DELETE   SHIT     SKT     BOUNCE  JUSTIFY SEQUENCE
                                                           NAME
    ◯      ◯      ◯       ◯        ◯        ◯       ◯      ◯
   OVERALL OCTAVE PITCH   KEY     SCALE    TRACK   TRACK   TRACK
   TUNING  RATIO  CLASS   ONLY    RESET    VOLUME  PAN     ROUTING
   └─OVERALL─┘    └──SCALE ADJUST──┘       └────── MIX ──────┘
```

Thus, pressing E above middle C will transpose all notes up a major
third; pressing E flat above middle C will transpose up a minor
third; pressing C below middle C will transpose down an octave; and
so on.

You can transpose during or before playback. You can store the
sequence on diskette in the transposed key or return it to its
original key by pressing middle C while the TRANSPOSE button is lit.

The above procedure accomplishes an overall transposition. You can
also transpose independent tracks. To do this,

1. solo the track;

2. perform the transposition in the usual way.

In general, the notes on any track with a lit or blinking button will
be transposed. If no track buttons are lit, the notes on all tracks
be transposed.

All transpositions will remain in effect even after other track
buttons are pressed. They can also be stored on diskette.

To leave the transpose mode, press TRANSPOSE again.

Transposing

1. Recall Sequence 2.

2. BOUNCE the notes on Track 1 onto Track 9 and the notes on
    Track 2 onto Track 10 (without erasing):

    a. Press BOUNCE.
    b. Press TRACK 1 twice.
    c. Press TRACK 9 once.
    d. Press BOUNCE again.
    e. Press TRACK 2 twice.
    f. Press TRACK 10 once.

3. Solo Track 1.

4. Press TRANSPOSE.

5. Transpose the notes on Track 1 up a perfect fifth by
    pressing G above middle C on the keyboard.

6. Unsolo Track 1, solo Track 2 and transpose the notes down a
    perfect fourth by pressing TRANSPOSE and then G below
    middle C.

7. Solo Tracks 1 and 2 and press START.

8. To compare the transpositions to the original, unsolo
    Tracks 1 and 2, solo Tracks 9 and 10 and press START.

9. Press TRANSPOSE again to leave the transpose mode.

Changing Timbres on Recorded Tracks

You can replace the timbre on a selected track with

o   a timbre from a timbre bank;
o   a timbre from another track; or
o   the same timbre with modifications.

You do this using the SMT (Select Memory Timbre) and SKT (Select Keyboard Timbre) buttons in the second panel, along with the TRACK SELECT buttons in the third panel or the TIMBRE STORAGE buttons in the fourth panel.
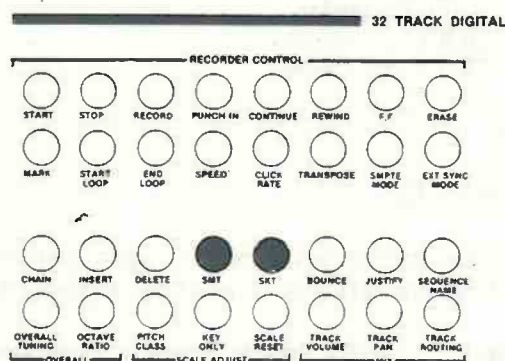
To replace the timbre on a recorded track with timbres from a bank,

1.   press BANK and then the numbered button (under TIMBRE/SEQUENCE STORAGE) of the bank that holds the selected timbre;

2.   press ENTRY but do not press a numbered button for the entry;

3.   press SMT;

4.   press the numbered button under TRACK SELECT of the track where you want to place the new timbre;

5.   press the numbered button under TIMBRE/SEQUENCE STORAGE of the desired new timbre.

To replace the timbre on one track with the timbre from another,

1.   press SMT;

2.   press the numbered button under TRACK SELECT of the track where you want the new timbre;

3.   press the numbered button of the track with the desired new timbre.

```
+------------------------------------------------------------------------+
|                                                                        |
|               Substituting a Timbre From a Timbre Bank                 |
|                                                                        |
|   1.  Recall Sequence 2.                                               |
|                                                                        |
|   2.  Press the BANK button and then Button 1 under                    |
|       TIMBRE/SEQUENCE STORAGE in the fourth panel.                     |
|                                                                        |
|   3.  Press the ENTRY button under TIMBRE/SEQUENCE STORAGE but do      |
|       not press a number button.                                       |
|                                                                        |
|   4.  Press SMT.  The SMT button will light up and the TRACK          |
|       SELECT buttons will start blinking.                              |
|                                                                        |
|   5.  Press Button 1 under TRACK SELECT.  This selects Track 1        |
|       for the timbre substitution.                                     |
|                                                                        |
|   6.  Press Button 3 under TIMBRE/SEQUENCE STORAGE.  This             |
|       replaces the original timbre on Track 1 with the Girls'          |
|       Choir timbre.                                                     |
|                                                                        |
|   7.  Press START to hear the changed timbre.                          |
|                                                                        |
+------------------------------------------------------------------------+
```

The SKT (Select Keyboard Timbre) button allows you to bring a timbre
from a recorded track to the keyboard. Then you can modify the
timbre and place it back on the track (or on another track). To do
this,

1. press SKT;

2. press the numbered button under TRACK SELECT of the track with
    the desired timbre;

3. make the modifications of the timbre that you want, using any of
    the features described in the tabbed section, "Timbre Design";

4. press SMT;

5. press the numbered button under TRACK SELECT where you want the
    modified timbre to be placed;

6. press SKT.

Modifying a Recorded Timbre

1. Recall Sequence 1.

2. Press SKT. The SKT button will light up and the TRACK
   SELECT buttons will start blinking.

3. Press Button 1 under TRACK SELECT. The SKT button and all
   the TRACK SELECT buttons will go out.

4. Play a few notes on the keyboard. You are now playing the
   timbre that is on Track 1.

At this point you could change anything about the sound that
you wanted. The options available are discussed in the tabbed
section, "Timbre Design." For this exercise, we will change the
volume.

5. Make sure buttons 1 and 2 under PARTIAL TIMBRE SELECT are
   both lit. This timbre has two partial timbres.

6. Press PARTIAL VOLUME in the first panel. The number in the
   display window should be 100.0.

7. Turn the control knob to the left until the number in the
   window is 50.00.

8. Play a few notes on the keyboard. You will hear that the
   volume has been lowered by one half.

Now that the timbre has been modified, it can be placed back on
the track, replacing the unmodified version.

9. Press SMT. The SMT button will light up and the TRACK
   SELECT buttons will begin to blink.

10. Press Button 1 under TRACK SELECT. The TRACK SELECT
    buttons will continue to blink and the SKT button will
    start to blink.

11. Press SKT. The SKT button and the TRACK SELECT buttons
    will all go out.

12. Press START. You will immediately hear that the notes on
    Track 1 are much softer in volume than before.

Adding Real-Time Effects

In future releases, you will be able to add real-time effects to a previously recorded sequence. Thus you will be able to add note-by-note volume changes, expression changes, changes in vibrato, frequency modulation and so on.

EDITING A RECORDED SEQUENCE

Sometimes after you have recorded a sequence, you will find that you want to make small changes in the sequence without having to record the track over again. This section shows you how to make these changes.*

As with more major modifications, the changes you make are memorized by the computer but only affect the temporary copy of the sequence in the memory recorder. To change a sequence stored on a diskette or in a subcatalog, you will have to first make the changes and then replace the stored copy using the procedure described in the section on storing sequences.

Here is a summary of the buttons used for editing:

BUTTON	USE	FUNCTION
PUNCH IN	Press once	Erases notes on selected track and allows recording of new notes over them
TRACK SELECT button	Hold down, turn knob	Adjusts starting time of selected track
TRACK SELECT button	Hold down, press SEQUENCE & number button	Recalls selected track of selected sequence
SEQUENCE NAME**	Press once and turn control knob	Selects letter to change in sequence name; changes selected letter.

*For extremely fine editing, the SCRIPT system may be used. You will learn how to do this kind of editing when you turn to the "Terminal Support Options" in Binder 2.

**This function will be available in future releases.

Erasing and Editing Notes

You can use the PUNCH IN button in the second panel to erase a single note or a series of notes in the middle of a sequence while simultaneously recording new notes. When you press PUNCH IN, the RECORD button will also light. The keyboard timbre must be the same as the timbre on the track you are editing.
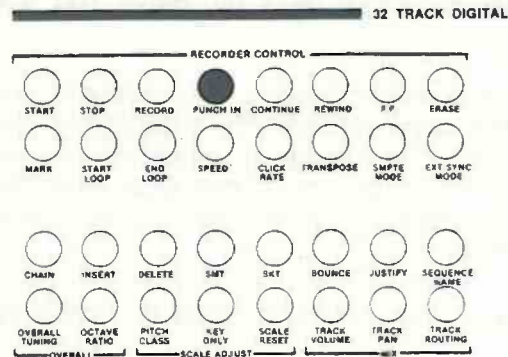
It is very helpful if the sequence you want to edit has been recorded in the justified mode.

To use PUNCH IN for editing,

1. solo the track you want to edit;

2. make sure the keyboard timbre is the same as the timbre on the soloed track (if it is not, use the SKT button to make it so);

3. play back the sequence to a few bars before the point where you want to make changes and press RECORD;

4. at the point where you want to make the changes, press PUNCH IN;

5. start playing. The previously recorded notes will be erased as you record new notes over them.

6. To stop erasing and recording, press PUNCH IN a second time. Or press CONTINUE.

You can also use PUNCH IN to simply erase a note or notes without recording new ones. However, since pressing PUNCH IN turns on the RECORD button, all the rules that apply to recording are in effect. Even if you only wish to erase notes and do not wish to record new ones, the keyboard timbre must be the same as the timbre on the blinking track.

If you press PUNCH IN when the timbre on the track you have soloed is different from the timbre active on the keyboard,

TIMBRES MUST MATCH FOR RECORD

will appear in the display window. To correct the error, use the SKT button to make the timbre on the track you wish to change active on the keyboard. Then press PUNCH IN.

You can start erasing and recording at the very beginning of a track by pressing PUNCH IN before pressing START. Stop at any point as usual.

The memory recorder will not start erasing in the middle of a note. If you press PUNCH IN between two notes, the erasing will begin immediately. If you press PUNCH IN on top of a note, the erasing will begin right after the note ends.

The same is true for stopping erasing. If you press PUNCH IN the second time during a held note, the recorder will not stop erasing until the note ends. The complete note will be eliminated.

Recording, on the other hand, will commence as soon as you press PUNCH IN and will stop as soon as you press it a second time.

A switch on the pedal can be used quite effectively to activate the PUNCH IN function, freeing your hands for the keyboard. Connect one of the foot switch outputs to the jack labeled PUNCH IN/OUT FOOT SWITCH on the back of the keyboard unit.

When you push the foot switch once, the recorder will start erasing and recording. (You don't have to keep your foot on the foot switch. Just push it once and release.)

To stop erasing and recording, push the foot switch again.

Single-Track Editing

1. Clear out the memory recorder by pressing ERASE twice.

2. Press BOUNCE and dial in a click rate multiplier of 4.

3. Press BOUNCE three times more so that it blinks (to be in the justified mode).

4. Select Timbre 1-1-6 and record a new sequence.

5. Solo Track 1.

6. Press START.

7. A few bars before where you want to edit, press RECORD. The RECORD button will light up.

8. At the exact point where you want to edit, press PUNCH IN. PUNCH IN will start to blink. The memory recorder is erasing the material on Track 1. You will hear nothing played back.

9. After a beat or two, press CONTINUE. The PUNCH IN and RECORD lights will go out. The recorder will continue to play back without erasing.

10. Continue listening to the playback and at some further point press RECORD.

11. Press PUNCH IN while simultaneously beginning to . . .

12. . . . play some new notes, keeping in time with the click track.

13. Stop playing and press STOP.

14. Press START. There will be a gap of several beats at the poin where you first pressed PUNCH IN. At the second point you pressed PUNCH IN, the new notes you played will sound. The old notes will have been erased.

```
+---------------------------------------------------------------+
|                                                               |
|                      Multitrack Editing                       |
|                                                               |
|   1.  Record two tracks with two different timbres.           |
|                                                               |
|   2.  Solo Track 1 and make its timbre active on the keyboard by |
|       pressing SKT and then TRACK 1 again.                    |
|                                                               |
|   3.  Press START.  You will hear only the soloed track.      |
|                                                               |
|   4.  A few bars before editing, press RECORD.  You will hear |
|       both tracks.                                            |
|                                                               |
|   5.  At the point you want to start editing, press PUNCH IN and |
|       start playing.  You will continue to hear both tracks as |
|       you erase and record.                                   |
|                                                               |
|   6.  When you have finished editing, press PUNCH IN again.  You |
|       will again hear only the soloed track.                  |
|                                                               |
|   7.  Unsolo Track 1 to hear both tracks play back.           |
|                                                               |
+---------------------------------------------------------------+
```

Adjusting the Starting Time of Individual Tracks

The count-off bars you use before beginning to record are memorized as rests in the memory recorder, so that the first recorded note starts on beat 5 or 9 or whatever. You can delete these count-off bars or add new ones by adjusting the starting time of each individual track in the memory recorder.

If your sequence has been recorded in the justified mode, the starting time can be adjusted in beats; if it was recorded in the unjustified mode, it can be adjusted in fractions of a beat.*

To adjust the starting time of an individual track,

1. press the numbered button of the selected track and hold it down while you. . .

2. . . . turn the control knob to the right or left.

If you are in the justified mode, the display window will show the beat number of the first recorded note on the track. Turning the knob to the right adds one-beat rests, thus moving all notes on the track forward. Turning the knob to the left subtracts one-beat rests, thus moving all the notes backward.

If you are in the unjustified mode, the display window will show the beat number and fraction of the first recorded note on the track. As you turn the control knob slowly to the right or left, you will see this number change to reflect adjustments to 1/1000 of a beat.

You can also adjust the starting time of a track with the click rate in milliseconds. To do this,

1. press and hold down the numbered button of the selected track;

2. press CLICK RATE twice to display the click period in milliseconds;

3. continue to hold down the track button and turn the control knob.

The notes on the track will be moved forward or backward in millisecond intervals equivalent to the beat set by the click rate.**

Starting time adjustments can be performed while the sequence is playing. When you do this, the display window will show the starting time of the track (in beats or milliseconds) in the upper half of the window and the changing current beat number in the lower half.

---

*This latter adjustment in fractions of a beat will be available with Release J software.

**As of Release J, the adjustment will be in 5-millisecond intervals. Future software which will use the ABLE C high speed processing card available in 1985 will allow 2-millisecond intervals.

Recalling Individual Tracks

You can recall tracks individually from a sequence. To do this,

1. press the numbered button for the selected track and hold it down while you . . .

2. . . . press SEQUENCE and the number of the sequence under TIMBRE/SEQUENCE STORAGE.
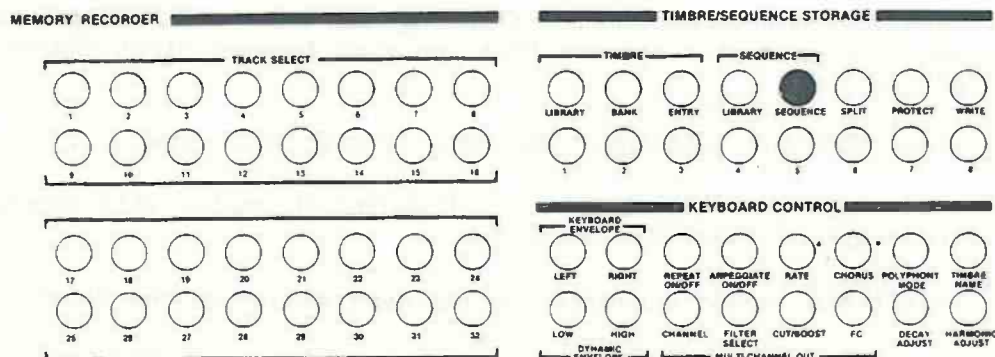
The selected track will be placed on the same track in current memory. For example, if you recall Track 2 from a stored sequence, it will be placed on Track 2 in current memory. If Track 2 in current already has notes on it in the same timbre, the previously recorded notes will be erased.

By recalling selected tracks and changing their starting times, you can combine and append tracks in a variety of ways.

Naming a Sequence*

One final modification you may want to make on a recorded sequence is to give it an identifying name. The name will then be stored with the sequence and will appear in the display window whenever you recall the sequence.

To give a sequence a name, follow this procedure:

1. Press the SEQUENCE NAME button in the second panel of buttons. A flashing character will appear in the display window.

2. Turn the control knob. The flashing character will change. Stop when the character appears that you want for the first character of the name.

3. Press SEQUENCE NAME again and hold it down while you. . .

4. . . . turn the control knob. A flashing character will appear to the right of the first character.

5. Select the second character in the same manner as the first.

6. Continue until the entire name is selected.
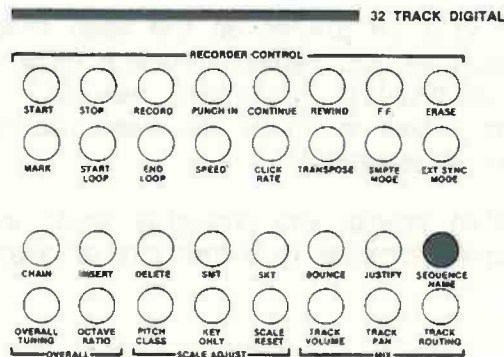
If you have a terminal, you can use it to type in the sequence name. To do this,

1. press SEQUENCE NAME;

2. type in the characters on the terminal keyboard.

---

*This feature will be available in future releases.

STORING AND RECALLING RECORDED SEQUENCES

While you are working on a recorded sequence, you will want to have it stored more permanently on diskette or on the Winchester disk. This section explains how to store sequences on storage devices and then recall them to the keyboard.

Here is a summary of the buttons used for storing and recalling:

BUTTON	USE	FUNCTION
SEQUENCE LIBRARY*	Press and hold with SEQUENCE	Selects library for sequence storage or recall
SEQUENCE	Press with numbered button	Recalls selected sequence to keyboard
WRITE	Press once with SEQUENCE and numbered button	Stores currently active sequence on specified storage device
PROTECT*	Press once with SEQUENCE and numbered button	Write-protects selected sequence

*This feature will be available in future releases.

Storing Sequences

There are eight numbered buttons under TIMBRE/SEQUENCE STORAGE. Each button, when pressed with the SEQUENCE button, can potentially access a special sequence storage area on a diskette or on the Winchester disk.

The diskette labeled "Sequence Storage Disk 1" contains a single large sequence storage area that can be accessed by Button 1 under TIMBRE/SEQUENCE STORAGE. The diskette labeled "Sequence Storage Disk 2" contains four smaller sequence storage areas that can be accessed by Buttons 1-4 under TIMBRE/SEQUENCE STORAGE.

You cannot use these diskettes to store sequences. Rather they are masters you will use to create your own sequence storage diskettes from blank <u>formatted</u> diskettes. Instructions for formatting and copying diskettes are in "Formatting and Dupicating Diskettes" in the Appendix to this binder.

To store the sequence in current memory onto the diskette in the MAIN drive,

1. remove the Real-Time Performance System diskette from the MAIN drive and insert a sequence storage diskette that you have prepared from one of the master sequence storage diskettes;

2. press the SEQUENCE button;

3. press the WRITE button and hold it down while you. . .

4. . . . press the numbered button under TIMBRE/SEQUENCE STORAGE for the sequence space where you want to store the sequence.
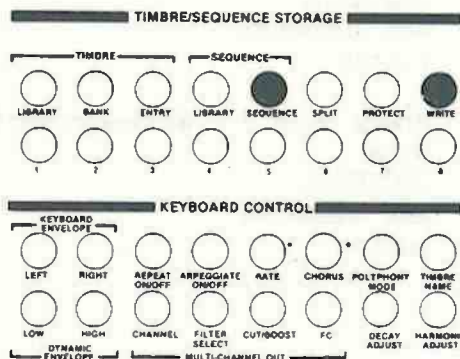
All tracks of the recording will immediately be written from the memory recorder onto the diskette in the MAIN drive. You will see in the display window a message telling you how many sectors have been written.

Be sure to press WRITE <u>before</u> the SEQUENCE number button. Otherwise, you will recall an old sequence and lose your new sequence in the memory recorder. Also, be sure the SEQUENCE button is lit.

When you store a sequence, you store, in addition to the actual notes on each track, unmixed,

- the timbre used on each track including any real-time effects patching (covered in "Keyboard Control and Real Time Effects") and any programmed control voltage output (covered in "Studio Interfaces");

- any overall or independent transpositions;

- any overall or independent da capo loop;

- any independent dal segno loop;

- the current click rate;

- the current speed setting;

- any special scales you set up (see the section, "Keyboard Control and Real-Time Effects");

- the sequence name, if you have created one.

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

- the current keyboard tuning setting (when you recall your sequence, it will be played in the tuning that is active on the keyboard);

- any overall dal segno points or notes.

If you try to store a sequence onto a diskette that contains no special storage areas, or onto a diskette that has a sequence storage area with fewer spaces than the number of the space you have selected to store your sequence in, the error message

   SYSTEM FILE IS MISSING

will appear in the display window.

The different timbre diskettes have sequence spaces of different maximum lengths. If you try to store a sequence which has more notes than the particular sequence space you have selected,
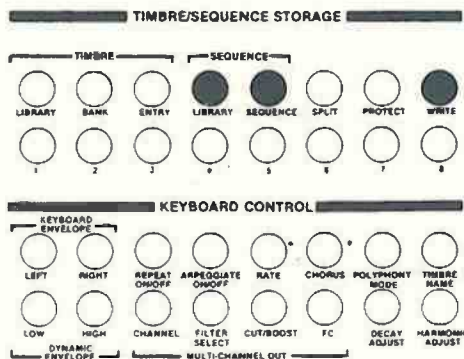
   SEQUENCE IS TOO LONG TO STORE

will appear in the display window.

Storing Sequences on Other Storage Devices

With dual diskette drives, you can store sequences on the diskette in the AUXILIARY drive.* To do this,

1. press SEQUENCE;

2. press LIBRARY and hold it down while you. . .

3. . . . press WRITE and the numbered button under TIMBRE/SEQUENCE STORAGE.

*In future releases, you will be able to store sequences in different areas on the Winchester disk by using the LIBRARY button with the numbered buttons under TIMBRE/SEQUENCE STORAGE.

Protecting Sequences from Overwriting*

When you store a sequence, you will completely overwrite any sequence
that was previously stored in that sequence space on the diskette.
For example, the Real-Time Performance System diskette contains, in
the sequence file accessed by Button 1 under TIMBRE/SEQUENCE STORAGE,
the arrangement of "Scarborough Fair." If you store a sequence of
your own by pressing WRITE and Button 1 without replacing the
Operating System diskette with a sequence storage diskette,
"Scarborough Fair" will be erased and your new sequence written in
its place.

To protect sequences from being overwritten, press the PROTECT button
before pressing the WRITE and sequence number buttons.
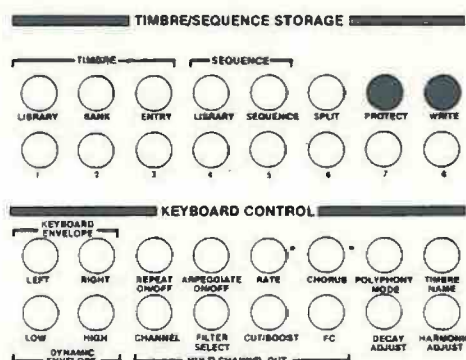
If a sequence has been write protected, a new sequence cannot be
written over it. If you do try to write a new sequence over a write
protected sequence, an error message will appear in the display
window.

With some brands of diskettes, you can write protect the entire
diskette. When you purchase blank diskettes, ask your dealer how
this is done.

Creating Sequence Archives

You will probably want to make an archive of completed sequences.
You can do this by making duplicate copies of the diskettes on which
they are stored. Instructions on how to make duplicate copies of
diskettes are in "Formatting and Duplicating Diskettes" in the
Appendix to this binder.

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*This feature will be available in future releases.

Recalling Sequences

To recall a sequence,

1. press SEQUENCE under TIMBRE/SEQUENCE STORAGE;

2. press the numbered button of the sequence you want to recall.

You cannot recall a sequence from a space that does not exist. The
diskettes you copy from the master sequence storage diskettes will
not have sequence spaces for each button under TIMBRE/SEQUENCE
STORAGE. If you press the numbered button for a nonexistent
sequence, the error message

   SYSTEM FILE IS MISSING

will appear in the display window.

You can recall sequences from any diskette, including sequences made
on a Synclavier (R) system other than your own. However, if the
sequence you recall has been created in a system with a larger amount
of memory than that in your system, you may see an error message in
the display window when you try to recall it. This error message
indicates there are more notes in the sequence than in your memory
recorder.

Recalling Sequences From Other Storage Devices*

If you have dual disk drives, you can recall sequences from the
diskette in the AUXILIARY drive.* To do this,

1. press SEQUENCE under TIMBRE/SEQUENCE STORAGE;

2. press LIBRARY and hold it down while you . . .

3. . . . press the numbered button under TIMBRE/SEQUENCE STORAGE.
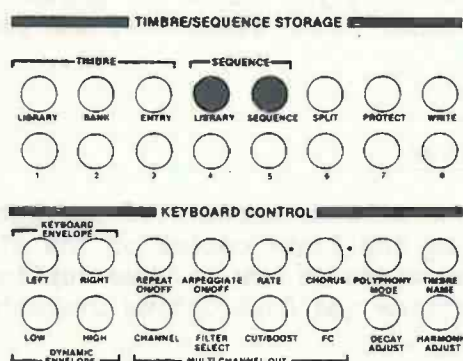
*In future releases, you will be able to recall sequences from
different storage areas on the Winchester Disk.