SECTION 4 -- About the Sequencer

THE SEQUENCER

The **Sequencer** section of the **ESQ 1** was not an afterthought -- as in "Hey, let's put a sequencer in this thing." It is a fundamental part of the whole concept of the **ESQ 1**, and an extremely powerful device in its own right. Building a Sequencer this sophistocated into the same box with a synthesizer creates many new possibilities for writing, recording and performing music.

At the same time, it can make for a few complexities. Since the Synthesizer and the Sequencer are interrelated, what you do on one sometimes affects the other. There are a few possible routes to confusion here. However, if you pay close attention to the explanations in this Manual, use your common sense, and open your mind to a few new concepts, you will be happily sequencing in no time.

The MIDI Connection

Almost everyone is familiar by now with **MIDI** -- that magical connection that lets you play one instrument (or a whole roomfull of them) from another. MIDI -- Musical Instrument Digital Interface -- is a standard that has been agreed upon by manufacturers for translating musical Events into specific numbers.

When you strike the Middle C on the **ESQ 1**, for instance, it instantly sends to its MIDI Out jack a series of numbers representing a Key Down, along with the location on the Keyboard, and how hard the key was struck. When you release the key the **ESQ 1** sends a number meaning Key Up. A MIDI instrument connected to the **ESQ 1** can read and translate those numbers to play the same middle C itself.

Now imagine a recorder which, instead of recording the sounds of an instrument, records the same kind of Digital information that is sent and received over MIDI -- Key Down, Key Up, Key Number and Velocity, Pitch Bend, MOD Wheel, and so on -- and you have imagined a Digital Sequencer.

Digital Sequencing

A general understanding of how a Digital Sequence Recorder like the **ESQ 1** does what it does, and how it differs from an eight track audio tape recorder, will help you to get the most out of your instrument. The key thing to bear in mind is this -- the Sequencer only records what you play. Sequencer Memory is used up on the basis of Events (Keys struck, Controllers, etc.), while a tape recorder's memory (the tape) is always used up by the same amount over a fixed period of time.

This means that a Sequencer will use virtually the same amount of Memory to record 100 notes, whether you play those notes over ten seconds or ten minutes. When you strike a key, the Sequencer records a Key Down. It then counts the Clock pulses until you release the key, when it records a Key Up. The amount of time between the Key Down and the Key Up doesn't really affect the amount of Memory required to record the note.

Compare this to an audio tape recorder. With tape, <u>Time</u> is the thing. A tape recorder will use the same amount of tape to record a minute of music, whether the signal contains one note or one hundred.

You might say that tape is <u>linear</u> -- it is spent at a fixed rate -- while Digital Sequencer Memory is <u>dynamic</u> -- it is used only as needed. The difference is essential to learning how to manage the **ESQ 1**'s Sequencer Memory. For example, while <u>Key Events</u> (the notes you play) use up relatively little Memory each, <u>Controllers</u> such as MOD Wheel, Pitch Bend, Breath controller, etc., are recorded as a flood of numbers which can fill up the Memory in a hurry. Thus if you're trying to squeeze one more Track into a Sequence when there is not much Memory left, you know to go easy on the Controllers.

THE ESQ 1 SYSTEM

The diagram below illustrates the signal paths and the "component parts" that make up the **ESQ 1** -- the **ESQ 1 System.** As you grow more familiar with the **ESQ 1** and its functions, you should refer back to this diagram, as it will answer many of your questions concerning which signals can be routed where.

Control Signal: ——————   Audio Signal: ▪▪▪▪▪▪▪▪▪▪
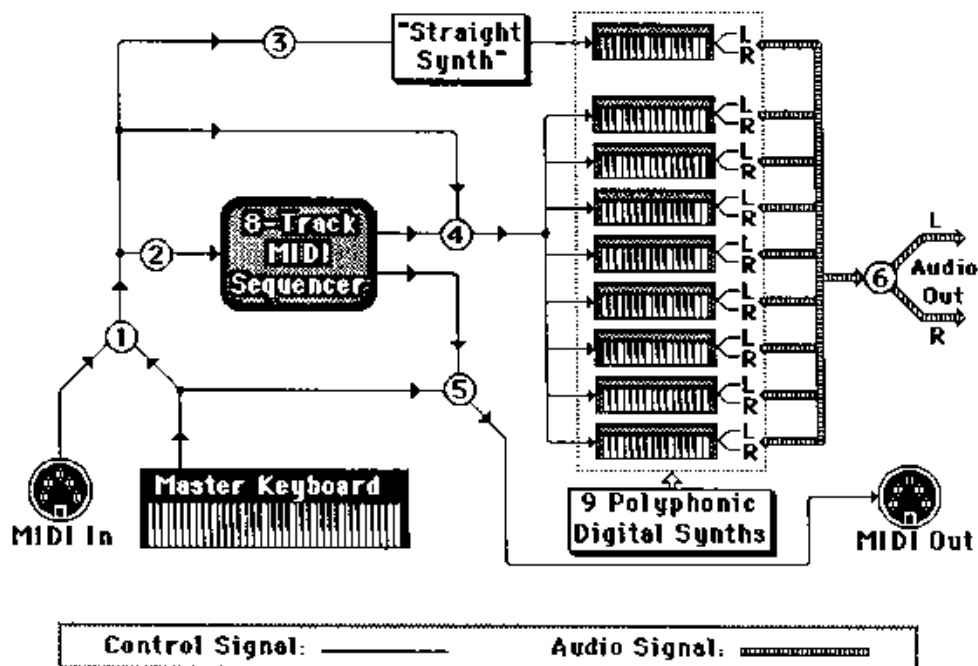
As indicated by the above diagram:

1) There are two available Control Signal sources -- incoming MIDI Data, and the **ESQ 1** Keyboard (shown above as Master Keyboard.)
2) Both the **ESQ 1** Keyboard and incoming MIDI can address any of the Tracks of the eight-Track MIDI Sequencer.
3) Both the **ESQ 1** Keyboard and incoming MIDI can address the Straight Synth.
4) Each of the Tracks can be thought of as a "virtual synth" and can be addressed from the **ESQ 1** Keyboard, from MIDI, or from Data recorded on the Sequencer.
   (A "virtual synth" is defined here as something that has 1) its own Program, 2) its own MIDI Channel, and 3) eight voices available for it to play. Of course, since the **ESQ 1** has only eight voices, the nine "synths" -- the Straight Synth and the eight Tracks -- cannot all play at any one instant in time. But the **ESQ 1**'s Dynamic Voice Assignment means that each has eight voices available at any time, if someone else is not using them.)
5) Both the **ESQ 1** Keyboard the Sequencer can send MIDI Out.
6) The stereo outputs of the Straight Synth and the eight Tracks combine to form the Left and Right Audio Outputs of the **ESQ 1**.

Note: The diagram above is conceptual and somewhat simplified. It is intended primarily as an aid to understanding.

SEQUENCES AND SONGS

What is a Sequence?

A **Sequence** on the **ESQ 1** is comparable to a Pattern on a drum machine. Each Sequence has a defined length (though you can change it at any time). A Sequence can be as short or as long as you want (within the limitations of Memory). Within a given Sequence, each of the eight Tracks has its own Internal Program and MIDI configuration (MIDI Channel, Status, Program number, etc.), all of which is "remembered" by the **ESQ 1** for each Sequence.

Each time you select a new Sequence, each Track used within a Sequence will send out a Program Change and Midi Volume instructions on its designated Midi Channel, unless it has been assigned LOCAL only Status -- in which case you can have the new Track play a new Internal Program. Internal Program, Midi Channel, Midi Program, etc. for each Track do not change within a given Sequence --that is what the **ESQ 1**'s **Song** Mode is for.

In Song Mode, Sequences will play consecutively in any order, with up to 99 Steps, and up to 99 Repetitions of each Step. Whenever a new Sequence begins to play as a Step in a Song, the effect is the same as when you select the Sequence -- each Track will send out a Program Change on its MIDI Channel, change its Internal Program, or whatever you have programmed that Track of that Sequence to do.

You'll find that you can control all your MIDI instruments -- playing, recording, and changing Sounds -- without ever leaving the **ESQ 1** Keyboard.

## Sequencer Master Bank

The one yellow Button labeled **SEQ**, above the three Program **Master Bank** Buttons, selects the **Sequencer Master Bank**. The **Sequencer Master Bank** contains **30** Sequence Memory Locations, and **10** Song Memory Locations. Not all of these locations necessarily contain a Sequence or Song at a given time.
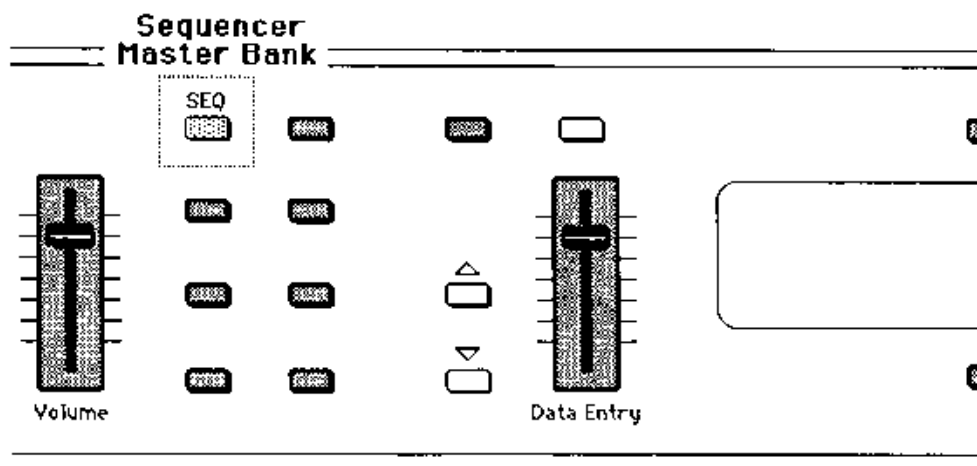
Sequencer Banks

Press the **Sequencer Master Bank** Button. The four **Bank Select** Buttons now access the Sequencer Memory rather than the Program Memory. There are three Banks of ten Sequences and one Bank of ten Songs.
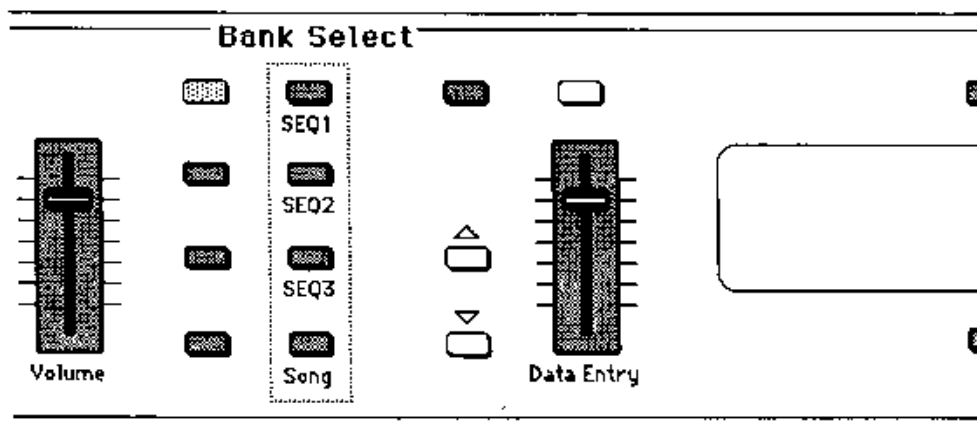
Selecting a Sequence

Press **SEQ 1**, **SEQ 2** or **SEQ 3** to see the **Sequence Select Pages** for each of the three **Sequence Banks.** The Sequences in Memory are numbered **01** through **30**. When you press **SEQ 1**, the Display shows:


```
SEQ1    .SEQ-Ø1 .SEQ-Ø2 .SEQ-Ø3  SEQ-Ø4  XXX-Ø5

        XXX-06  XXX-Ø7  XXX-Ø8  XXX-Ø9  XXX-1Ø
```
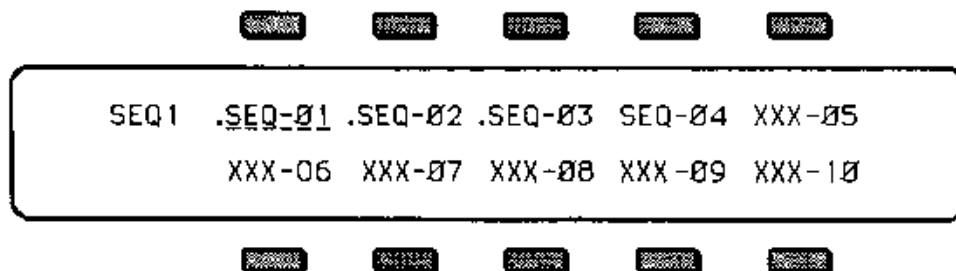
Pressing the Soft" Button next to any of the ten Sequence Locations selects that as the current Sequence. Only those with (**SEQ--**) before the Sequence number can be selected. A location where (**XXX--**) appears represents a Sequence which hasn't been defined yet -- it contains no Sequence Data and cannot be selected until you Create a Sequence in that Location.

As with everything on the **ESQ 1**, when you select a Sequence it becomes underlined. **The currently selected Sequence is always underlined**.

A **dot** (.) to the left of a Sequence location means there is data recorded in that Sequence. A Sequence Location with no dot (as in SEQ-04 in the illustration above) means that nothing has yet been recorded there.

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Whenever you select a Sequence or a Song, the **ESQ 1** sends out a MIDI Song Select message. See p. 169 for more details on Song Selects.

Selecting a Song

With the **ESQ 1**'s Song Mode you can chain Sequences together to form up to ten different Songs. Press **Song** to see the **Song Select Page**. Either 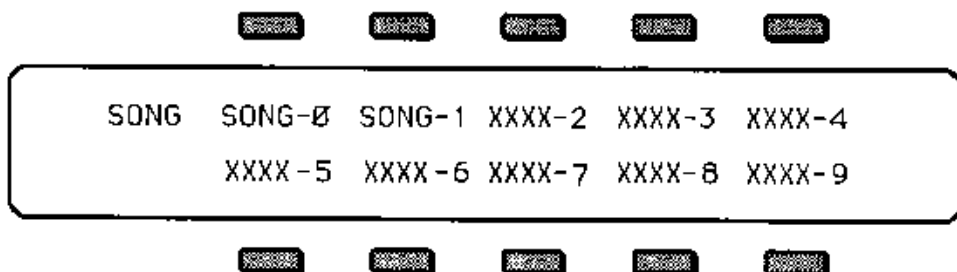a Sequence or a Song can be selected --never both. While the thirty Sequences are identified by number only, the ten **Songs** can have Names. When you press **Song**, the Display shows:

```
┌─────────────────────────────────────────────────────┐
│                                                       │
│   SONG   SONG-Ø  SONG-1  XXXX-2  XXXX-3  XXXX-4       │
│                                                       │
│          XXXX-5  XXXX-6  XXXX-7  XXXX-8  XXXX-9       │
│                                                       │
└─────────────────────────────────────────────────────┘
```

Pressing the "Soft" Button next to any of the ten Song Locations selects that as the current Song. Only those with a Name can be selected. A location where (**XXXX**) appears represents a Song which hasn't been created yet and cannot be selected.

The currently selected Song is always <u>underlined</u>.

Playing Sequences

Try selecting a Sequence, and pressing the **Play** Button in the Sequencer Section, to the right of the Display. The selected Sequence will begin to play.

While one Sequence is playing you can select another one. An <u>underline</u> will begin to flash beneath the new Sequence, but the original one will continue to play. When the first Sequence is finished, the <u>underline</u> will switch to the new Sequence, and <u>it</u> will play. In this fashion you can string Sequences together in real time, as they play. The Display always tells you which is Playing (underline) and which is selected to play next (flashing underline).

Press the **Stop/Cont** Button or the **Sequencer Foot Switch** to Stop the Sequence.

Playing Songs

To Play a Song, simply select one of the Songs in memory, as described above, and press the **Play** Button in the Sequencer Section. Unlike Sequences, you can't switch Songs while one is playing. The Sequencer must be stopped to select a new Song.

Press the **Stop/Cont** Button or the **Sequencer Foot Switch** to Stop the Song.

Sequencer Expander Cartridge

The optional **Sequencer Expander Cartridge** can be installed in your **ESQ 1** to increase its Internal Sequencer Memory capacity to 32K -- over 10,000 notes. The **Sequencer Expander Cartridge** is intended to be installed in the **ESQ 1** and left there. Once inserted, it acts as a part of the internal circuitry of the **ESQ 1**, and there is no reason to remove it. Unlike the Program Cartridge, the **Sequencer Expander Cartridge** will not retain any Data when disconnected from the **ESQ 1**.

The **Sequencer Expander Cartridge** can be easily installed by an authorized **ENSONIQ** Repair Station, or you can do it yourself. However, since installing the Cartridge basically reconfigures the **ESQ 1's** Memory system, the **ESQ 1** should be Re-initialized after you do so. This involves erasing all Memory. You should save all Programs and Sequence Data before proceeding. You can load them back in after the Cartridge has been inserted.

To install the Cartridge:

1) Save all Internal Programs and Sequence Data to audio tape, Program Cartridge, **Mirage**, or to another **ESQ 1**.
2) **Turn the ESQ 1's power Off!** The **Sequencer Expander Cartridge** must not be inserted or removed with the power On. Doing so may seriously damage the **ESQ 1**.
3) Remove the two screws that hold on the metal plate covering the Sequencer Expansion Port on the rear panel, and remove the metal plate.
4) Insert the **Sequencer Expander Cartridge**, connecter end first, and with the label facing up, into the Cartridge port.
5) Carefully press the Cartridge into place until it is seated firmly. Don't force it.
6) Replace the metal plate and retighten the two screws that hold it in place.
7) Re-initialize the **ESQ 1**. Turn the **ESQ 1's** power On. While holding down the **Record** Button, press the top-left (**#1**) Soft Button. The Display will ask "**ERASE ALL MEMORY AND REINITIALIZE.**" Answer *Yes*.
8) Select the **CREATE/ERASE** Page, and check the Available Memory (see p. 124). The number of available bytes of Sequencer Memory, **FREE =**, should now be greater than **32,000**.

You can now Load back in the Internal Programs and Sequencer Data that you stored. Bear in mind that all Global and Sequencer parameters (MIDI Channel, Bend Range, Click, Loop, etc.) that are normally remembered by the **ESQ 1** will now be reset to their Default values, and must be adjusted again to the values you want.

"TRANSPORT" CONTROLS

Record   Stop/Cont   Play

"Transport" Controls

**Sequencer
Foot Switch**

The bottom row of Buttons in the Sequencer section of the **ESQ 1** are used to start and stop the Sequencer, and to enter the various other Sequencer States. These buttons are similar to the Play, Stop and Record controls on a tape deck. Together with the **Sequencer Foot Switch** (which duplicates the **Stop/Cont** Button), and the **Auto-Locate** controls found on the **LOCATE** Page (which might be compared to the fast forward and rewind), they give you the ability to Play or Record from any Bar within a Sequence.

When the Sequencer is Stopped;

Pressing   **Play** starts the Sequencer playing from the beginning of the Sequence or Song. (Unless you have just used the **Auto-Locate** Controls, in which case the first press of the **Play** Button acts like **Stop/Cont**.)

Pressing   **Stop/Cont** starts the Sequencer playing from the point where it was last stopped, or from the location selected with the **Auto-Locate** Controls.

Pressing   **Play while holding down Record** starts the Sequencer Recording from the point where it was last stopped, or from the location selected with the **Auto-Locate** Controls.

When the Sequencer is in PLAY;

Pressing   **Stop/Cont** stops the Sequencer.

Pressing   **Play** starts the Sequence again from the beginning.

Pressing   **Record** puts the Sequencer into **Overdub**. It will wait for you to play before going into Record.

When the Sequencer is in RECORD;

Pressing   **Stop/Cont** stops the Sequencer.

Pressing   **Play** takes the Sequencer out of **Record** and puts it into **Audition Play**. (Except on the First Track. When recording the First Track, pressing Play has no effect.)
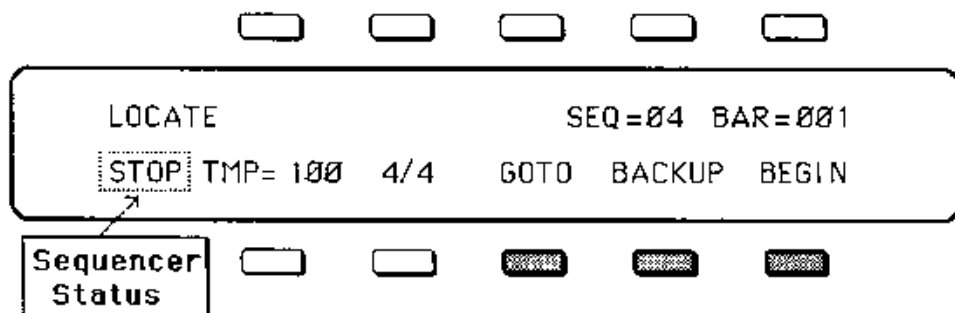
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Sequencer Foot Switch

The Rear Panel jack labeled **Sequencer Ft. Sw.** accepts an **ENSONIQ FSW-1** Foot Switch. When a Foot Switch is plugged into this jack, pressing it will have the same effect as pressing **Stop/Cont**, except when recording the first Track of a Sequence, or when in Overdub, when it can be used to put the Sequencer into Record without playing.

* * * * **The Sequencer Foot Switch exactly duplicates the behavior of the Stop/Cont Button (except in the REC Standby or Overdub states).**

SEQUENCER STATES

On all Sequencer Pages except the **CREATE/ERASE** Page and the **EDIT** Page, the **Status** of the Sequencer is always shown in the lower-left corner of the Display. This tells you which State the Sequencer is in at any given time.

```
   ▭      ▭      ▭      ▭      ▭

  ┌─────────────────────────────────────────────┐
  │  LOCATE                    SEQ=Ø4  BAR=ØØ1   │
  │                                              │
  │ ┌────┐                                       │
  │ │STOP│ TMP= 1ØØ   4/4   GOTO  BACKUP  BEGIN  │
  │ └────┘                                       │
  └──────↗──────────────────────────────────────┘
  ┌──────────┐
  │Sequencer │  ▭      ▭      ▬▬▬    ▬▬▬    ▬▬▬
  │ Status   │
  └──────────┘
```

When a Sequence is selected, the possible Sequencer States are:

STOP -- Sequencer at rest.

PLAY -- Sequencer Playing current Sequence. From **STOP**, **PLAY** is entered by pressing the **Play** Button, or pressing the **Stop/Cont** Button.

REC (flashing) -- This is a Record "Standby" state that occurs only when recording the First Track of a Sequence. When **Record/Play** is pressed to record the First Track, **REC** flashes and the metronome starts (**CLICK** must be ON), allowing you to adjust the Tempo. Recording does not start until you begin to play. The point where you begin to play then becomes Bar # 1 of the new Sequence.

REC -- Recording on the selected Track. **Record** is entered by:
1) Playing any note while **REC** is flashing (First Track only);
2) Pressing **Record/ Play** (all later Tracks); or
3) Playing any note while **ODUB** is flashing (see **Overdub Mode** below).

The **ESQ 1** automatically exits the **Record** State at the end of a Sequence on all Tracks after the first -- that is, after the length of the Sequence is defined. It will not Record past the end of a Sequence. At the end of the Sequence it will leave **Record** and (assuming **LOOP= ON**) enter the **Audition Play** State.

ODUB (flashing) -- **Overdub** is another way of entering **Record**. It allows you to "Punch In" wherever you want on a Track, on any Track after the first.

To enter **Overdub**: While the Sequencer is in **Play**, press the **Record** Button. The **Status** indicator in the lower left corner of the Display will begin flashing **ODUB**. Nothing will be recorded until you play a note or press the **Sequencer Foot Switch**.

At the point you wish to punch in, just begin to play or press the Foot Switch. The Sequencer will record your new data from the point where you began to play up to the end of the Sequence, where it will leave **Record** and go into the **Audition Play** State.

AUDP -- **Audition Play**. This State is entered automatically from **Record** when the end of the Sequence is reached (assuming **LOOP=ON**). After leaving **Record** and entering **Audition Play**, the Sequence will continue to play in this state, with the newly recorded Track, until you press the **Stop/Cont** Button. Pressing **Stop/Cont** from this State will put you on the **PLAY/KEEP** Page (see below).

AUDS -- **Audition Stop** is entered when you stop the Sequencer from the **Audition Play** State. To exit **Audition Stop** and return to the normal **Stop** State, you must first instruct the **ESQ 1** to **KEEP** either the new or the original Track (see **PLAY/KEEP** Page below).

When a Song is selected, things are simpler. Since you can't record in **Song** mode, there are only two possible Sequencer States:

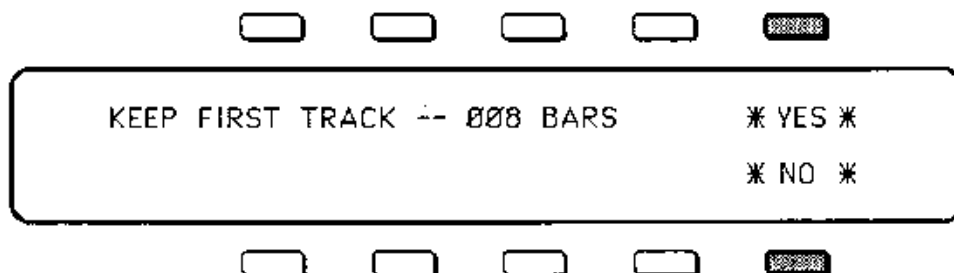**SNGS** -- **Song Stop**. Sequencer at rest.

SNGP -- **Song Play**. Sequencer playing currently selected Song.

UTILITY PAGES

There are a number of Utility and Dialogue Pages that you will encounter as you use the **ESQ 1** Sequencer. These Pages give you the choice of either keeping or rejecting changes you make to a Sequence and its Tracks.

KEEP FIRST TRACK

When you press **Stop** (or the Foot Switch) after recording the First Track of a Sequence, the Display shows the following Page:

```
 ⬭    ⬭    ⬭    ⬭    ▬
┌─────────────────────────────────────────────┐
│                                             │
│   KEEP  FIRST  TRACK  --  ØØ8  BARS    ✳ YES ✳ │
│                                             │
│                                        ✳ NO ✳  │
│                                             │
└─────────────────────────────────────────────┘
 ⬭    ⬭    ⬭    ⬭    ▬
```

Pressing *YES* installs the Track in Memory as the First Track of the Sequence, and defines the length of the Sequence as the number of Bars shown.

Pressing *NO* returns the Track (and the Sequence) to an unrecorded state, so you can record the First Track again from scratch.

PLAY/KEEP PAGE

After accepting a First Track, <u>everything</u> you record (including recording over the First Track) will be followed by the **PLAY/KEEP** Page. From the **Record** or **Audition Play** States, pressing the **Stop** Button (or the Foot Switch) results in the following Display:

```
 ▬    ⬭    ⬭    ⬭    ▬
┌─────────────────────────────────────────────┐
│                                             │
│   PLAY  ORIGINAL  TRACK      PLAY  NEW  TRACK  │
│                                             │
│   KEEP  ORIGINAL  TRACK      KEEP  NEW  TRACK  │
│                                             │
└─────────────────────────────────────────────┘
 ▬    ⬭    ⬭    ⬭    ▬
```

Because all recording of Tracks is done into an <u>Buffer Memory</u>, no new Track is entered into the Sequencer Memory until you decide you want to keep it. The **PLAY/KEEP** Page lets you listen to either the New or the Original Track, and to Keep (enter into Sequencer Memory) whichever you want.

When you are on the **PLAY/KEEP** Page, all other **ESQ 1** Pages and functions are inactive (except the **Auto-Locate** Controls -- see below). You will not be allowed to do anything other than Audition the new and original Tracks, until you make a decision on which to keep; though you can, while auditioning a Track, press the **LOCATE** Button to view the **LOCATE** Page in order to see where you are in the Sequence.

From the **PLAY/KEEP** Page:

Pressing PLAY ORIGINAL TRACK plays the Sequence from the beginning, with the selected Track as it was before you recorded over it.

Pressing PLAY NEW TRACK plays the Sequence from the beginning, with the new Track as you just recorded it.

Pressing the Stop/Cont Button Stops the Sequencer between plays.

Pressing the Sequencer Foot Switch from this Page will Stop and Continue the Sequencer -- but will always Play only the **NEW TRACK**.

You can select the LOCATE Page and use the Auto-Locate Controls from the PLAY/KEEP Page. For long Sequences or Overdubs you might want to start listening from some Bar other than the first. Select the **LOCATE** Page and use any of the three **Auto-Locate** Controls (as described on page 116) to select a starting point. You will be returned to the **PLAY/KEEP** Page, where the **PLAY ORIGINAL TRACK** or the **PLAY NEW TRACK** Button will now start the Sequence from the selected Bar.

Pressing KEEP ORIGINAL TRACK leaves the Track in the Sequencer Memory as it was before you recorded the New Track. If the Track was empty before recording, pressing **KEEP ORIGINAL TRACK** simply leaves the Track empty.

Pressing KEEP NEW TRACK enters the Track you just recorded into the Sequencer Memory. It will replace the original Track there.

SAVE CHANGES TO OLD SEQUENCE

Along with the **Track Data** (the Notes and Controllers that are recorded on each Track) there are several other parameters that are saved with each Sequence. These are:

- ----› the **Tempo** of the Sequence
- ----› the setting of the **LOOP** Switch, ON or OFF (**CONTROL** Page)
- ----› the **Program** assigned to each Track (**Tracks Select** Page)
- ----› the **Mix Level** of each Track (**Mix/MIDI** Page)
- ----› the **MIDI Channel** assigned to each Track (**Mix/MIDI** Page)
- ----› the **MIDI Program number** assigned to each Track (**Mix/MIDI** Page)
- ----› the **MIDI Status** of each Track (**Mix/MIDI** Page)

Whenever you record any Track of a Sequence, all of these values are automatically saved -- that is, they will be remembered by the **ESQ 1** if you leave the Sequence (by selecting another one) and return to it later.

However, if you change any of these parameters, and then select a new Sequence before you record any new Track Data, the following Page will appear:

```
┌──┐  ┌──┐  ┌──┐  ┌──┐  ▓▓▓▓
```

```
╭─────────────────────────────────────────────╮
│                                               │
│   SAVE  CHANGES  TO  OLD  SEQUENCE      ✳ YES ✳ │
│                                               │
│                                         ✳ NO ✳  │
│                                               │
╰─────────────────────────────────────────────╯
```

```
┌──┐  ┌──┐  ┌──┐  ┌──┐  ▓▓▓▓
```
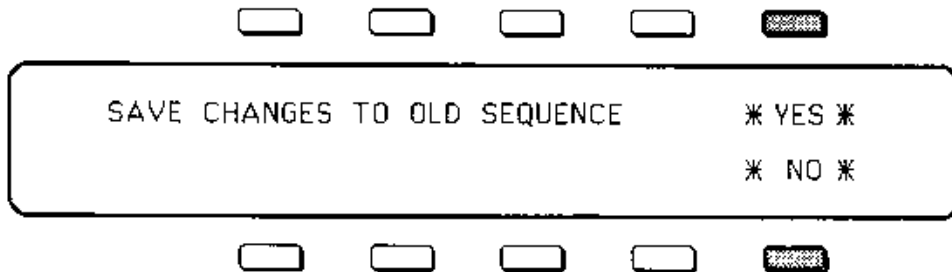
Pressing *YES* saves the Sequence, with the current settings of all the parameters listed above, into Sequencer Memory.

Pressing *NO* leaves the settings of the parameters listed above as they were when you last Recorded a Track, or answered *YES* when exitting the same Sequence.

In either case, the **Track Data** (Notes and Controllers recorded) is always saved. Sometimes its hard to remember, when you get this Page, exactly what you changed. As a general rule, if you are happy with the Sequence as it is, answer *YES*. If you have just been experimenting with different Tempos, Programs, MIDI configurations, etc., and want to keep the Sequence as it was before your experiments, answer *NO*.

Altering a Sequence in SONG Mode

Another time you will get this Page is when you are in **SONG** Mode (a Song is selected rather than a Sequence), and you change one of the above parameters in a Sequence which is a Step in the selected Song. If the Song is playing, any changes you make on the fly will be "forgotten" as soon as the Step is over. If, however, the Song is stopped, and you change one of these parameters, when you next press **Play**, or select another Song or Sequence, the **ESQ 1** will ask **"SAVE CHANGES TO OLD SEQUENCE?"**

Pressing *YES* installs the altered settings of any parameters you changed into Sequencer Memory.

Pressing *NO* leaves the Sequence as it was before you changed it.

After you answer, the **ESQ 1** will immediately **Play**, change Sequences, or whatever you had instructed it to do.

SECTION 5 -- TRACKS and Other Sequencer Pages

TRACKS

Create/
Erase   Edit   Control

Tracks

Tracks   Select   Mix/MIDI   Locate

Pages

Record   Stop/Cont   Play

SEQUENCER

ABOUT TRACKS

Because the Synthesizer and Sequencer sections of the **ESQ 1** are interrelated in certain ways, it is important to understand that almost all Sequencer functions have some effect on the Synthesizer -- especially those which deal with **Tracks**. Here are a few basic Truths about Tracks:

In General

----> There are eight independent, polyphonic Tracks in each Sequence.

----> A Track can be selected from the **Tracks Select** Page or the **Mix/MIDI** Page.

----> Only one Track is ever selected at a time.

----> The selected Track is always underlined.

----> Each Track of each Sequence has its own:
      Program (Local)
      Mix Level (Local, and MIDI for instruments which receive MIDI volume)
      MIDI Channel
      Status (LOCAL, MIDI, BOTH, or SEQ)
      MIDI Program Number (same as Internal Program Number)

----> When you select a Track, that Track (its Program, MIDI Channel, MIDI Status etc.) "takes over" the Keyboard -- when you play, the Track's Program is the one you will hear; the Track's MIDI channel is the one that is transmitted on.

----> When No Track is selected, the Current Program plays on the Keyboard -- normal, "Straight Synth" operation.

When Recording Tracks

----> You can only record on one Track at a time.

----> When you enter **Record**, you will always record on the selected Track, and only on that Track.

----> When no Track is selected, going into **Record** automatically puts you on the Track that was last selected (or Track 1, in the case of a newly created Sequence).

----> The length of the First Track you record determines the length of the Sequence.

----> Recording on a Track always replaces what was previously there. It is Sound Over Sound, not Sound On Sound. You can achieve Sound On Sound, in which new Track data is added to the old, by Merging two Tracks together, an **EDIT** function.

[SELECT]   Tracks Select PAGE

For Selecting Tracks and Selecting a Program for each Track

```
 ┌──────┐          ┌─────────┐ ┌─────────┐ ┌─────────┐ ┌─────────┐
 │ Page │          │ Track 1 │ │ Track 2 │ │ Track 3 │ │ Track 4 │
 │ name │          └─────────┘ └─────────┘ └─────────┘ └─────────┘
 └──────┘    ┌────────┐  ▨▨▨▨    ▨▨▨▨    ▨▨▨▨    ▨▨▨▨
             └────────┘

     TRACKS            UNUSED  UNUSED  UNUSED  UNUSED

     STOP  TMP=100     UNUSED  UNUSED  UNUSED  UNUSED

             ┌────────┐  ▨▨▨▨    ▨▨▨▨    ▨▨▨▨    ▨▨▨▨
 ┌─────────┐ └────────┘
 │Sequencer│  ┌───────┐ ┌─────────┐ ┌─────────┐ ┌─────────┐ ┌─────────┐
 │  Status │  │ Tempo │ │ Track 5 │ │ Track 6 │ │ Track 7 │ │ Track 8 │
 └─────────┘  └───────┘ └─────────┘ └─────────┘ └─────────┘ └─────────┘
```
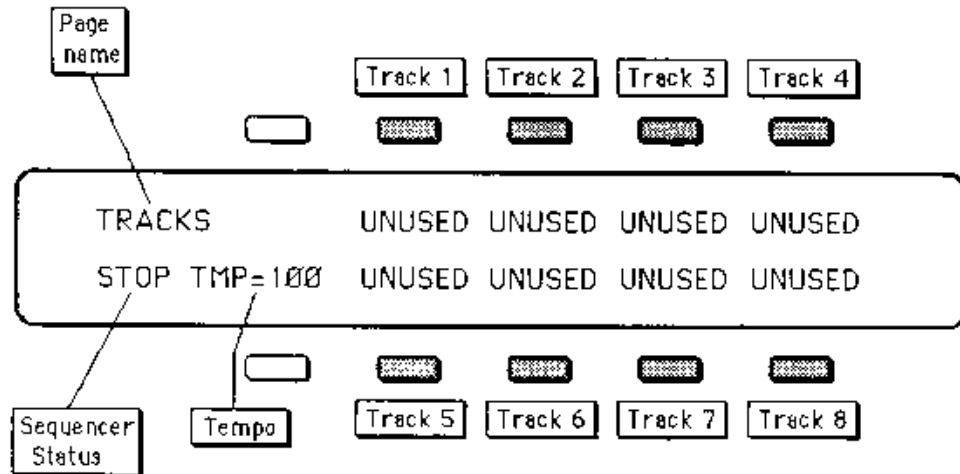
(Inactive Buttons appear in White)

From the **Tracks Select** Page, along with its companion Page, **Mix/MIDI**, you control all the characteristics of the various Tracks within a Sequence. On both the **Tracks Select** and the **Mix/MIDI** Pages, the eight Tracks of each Sequence always occupy the same eight locations on the Display, and are selected with same "Soft" Buttons, as shown above.

Each Track has a Local Program -- an **ESQ 1** sound that will play what is recorded on the Track, and will play from the keyboard when that Track is selected (unless a MIDI only Status has been selected). From the **Tracks Select** Page you select a Track (to Record on, to Edit, etc.), as well as selecting the Local Program that will play on that Track.

The illustration above shows the **Tracks Select** Page as it appears when a new Sequence is first created. When a Track location says "**UNUSED**," it simply means that that Track has not yet been defined. You define a Track by selecting it.

Selecting a Track

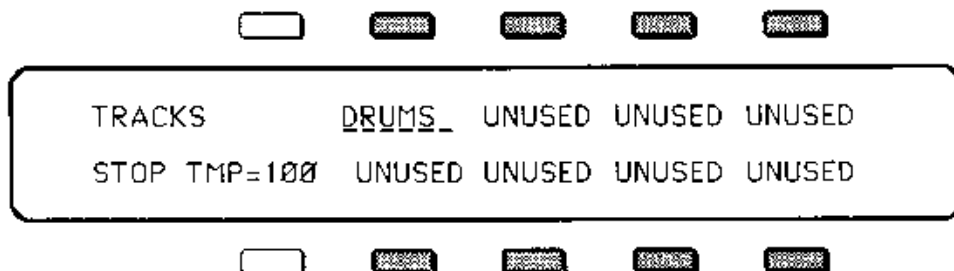Any of the eight Tracks is selected by pressing the "Soft" Button corresponding to that Track. When you select a Track that was previously **UNUSED**, two things happen:
   1) The word "**UNUSED**" is replaced by the name of the Current Program, and
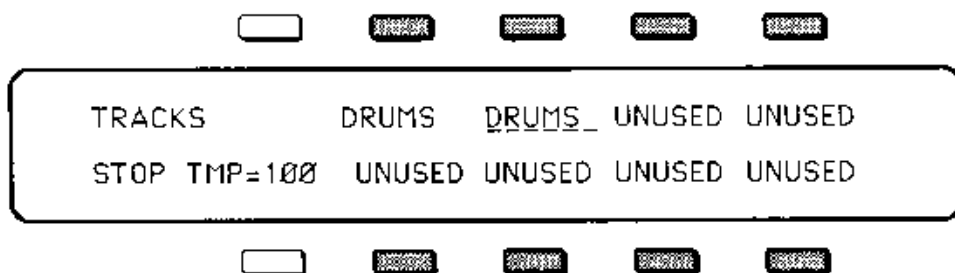   2) The Track is now underlined, telling you that it is selected.

Take the above illustration, which shows the **Tracks Select** Page for a newly

106

created Sequence. Say the current Program in the Synthesizer section is called **DRUMS**.
If you select **Track 1**, the Page now looks like this:

```
  ┌─────┐     ▭▭▭     ▭▭▭     ▭▭▭     ▭▭▭

 ┌─────────────────────────────────────────────┐
 │                                              │
 │   TRACKS        DRUMS_  UNUSED UNUSED UNUSED  │
 │                                              │
 │   STOP TMP=100  UNUSED UNUSED UNUSED UNUSED  │
 │                                              │
 └─────────────────────────────────────────────┘

  ┌─────┐     ▭▭▭     ▭▭▭     ▭▭▭     ▭▭▭
```

Now select **Track 2**, and the Page looks like this:

```
  ┌─────┐     ▭▭▭     ▭▭▭     ▭▭▭     ▭▭▭

 ┌─────────────────────────────────────────────┐
 │                                              │
 │   TRACKS        DRUMS   DRUMS_ UNUSED UNUSED  │
 │                                              │
 │   STOP TMP=100  UNUSED UNUSED UNUSED UNUSED  │
 │                                              │
 └─────────────────────────────────────────────┘

  ┌─────┐     ▭▭▭     ▭▭▭     ▭▭▭     ▭▭▭
```

The Program from Track 1 was "carried over" and assigned to Track 2 when it was
selected. **Selecting an UNUSED Track automatically assigns that Track the
Program, and all the Mix/MIDI Data, from the previously selected Track (or
the "Straight Synth" Program and MIDI Channel, if no Track was selected).**

When a Track is selected:

1) Its Program becomes the Current Program, the one that plays on the Keyboard;
2) Its MIDI Channel (**Mix/MIDI** Page) will be transmitted on;
3) That Track (and only that Track) is the one that will be Recorded when **Record**
   is entered;
4) That Track is the one that will be Edited when any of the **Track EDIT** functions
   is selected from the **EDIT** Page.

Changing the Program on a Track

The procedure for choosing a Program for a Track is similar to that for choosing a
WRITE location, or a **LAYER** Program. While you are on the **Track Select** Page, the
Program **Master Bank** and **Bank Select** Buttons act as momentary switches -- they
only work as long as they are held down. Let them go and the Display springs back to the
Tracks Select Page.

[SELECT]   Tracks Select PAGE   (cont'd)

The procedure for selecting an Internal Program for a Track is as follows:

----› Select **Tracks Select** Page.

----› Select one of the eight **Tracks**.

----› Press **INTERNAL**, **CART A** or **CART B** to select a **Master Bank**.

----› Press **Bank Select** Button(s) # 1, 2, 3 or 4 to find the Program you want.

----› While holding the **Bank Select** Button down, press the "Soft" Button above or below the Program.

----› Release the **Bank Select** Button. You will be returned to the **Tracks Select** Page, with the new Program Name showing in the selected Track's location.

"UNSELECTING" a Track -- Straight Synth Mode

Pressing the "Soft" Button above or below any of the eight Track locations on the **Tracks Select** Page selects that Track. Pressing the same Button again "Unselects" the Track, so that no Track locations on the Page are underlined. When no Track is selected, you are in the **Straight Synth** Mode. This is a state in which the Keyboard and the current Program are independent of the Sequencer.

Like each of the eight Tracks, the **Straight Synth** Mode has its own Program -- the Current Program -- which was the last one you selected before selecting a Track. The MIDI Channel selected on the **MIDI** Page in the Synth Section is its MIDI Channel. The **Straight Synth Mode** is another way of saying the Synthesizer Section of the ESQ 1 as it would behave if there were no Sequencer built in.

Straight Synth operation = No Track selected.

Whenever you call up a **Program Select** Page (from anywhere other than the **Tracks Select** Page) and select a Program in the usual fashion, the **ESQ 1** is automatically put into this **Straight Synth** Mode, to avoid inadvertently changing Sequencer settings from the Synthesizer.

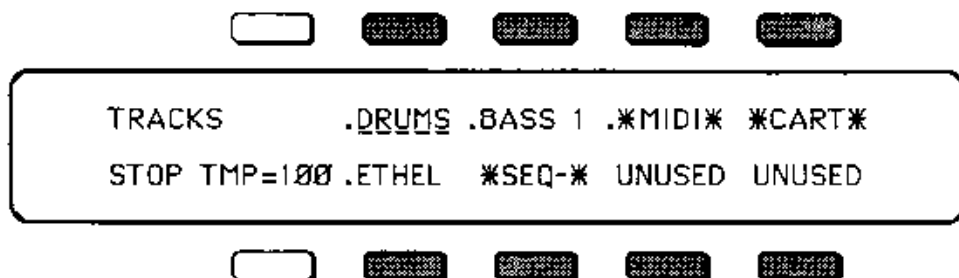Being in the **Straight Synth Mode** does not in any way disable the Sequencer, however. A Sequence or Song can be Played when no Track is selected, and you can play along, with the Current Program, which is independent of all eight Tracks. The elusive Ninth Track!

When no Track is selected, if you enter **Record**, the ESQ 1 will automatically put you on the Track that was last selected, and will record on that Track.

TRACK DISPLAYS

On the **Tracks Select** Page, the Display tells you a number of things about each Track. The illustration below shows a typical **Tracks Select** Page for a Sequence that has been recorded:

```
┌─────┐   ▓▓▓▓   ▓▓▓▓   ▓▓▓▓   ▓▓▓▓
└─────┘
┌─────────────────────────────────────────────────┐
│                                                  │
│   TRACKS        .DRUMS .BASS 1 .*MIDI* *CART*    │
│                                                  │
│   STOP TMP=100 .ETHEL   *SEQ-* UNUSED  UNUSED    │
│                                                  │
└─────────────────────────────────────────────────┘
┌─────┐   ▓▓▓▓   ▓▓▓▓   ▓▓▓▓   ▓▓▓▓
└─────┘
```

DOT = DATA

Notice that there is a **Dot** to the left of Track Locations **1, 2, 3** and **5**. The other four locations have no Dot. As with the Sequence Locations, **a Dot to the left of a Track Location means that there is Data recorded on that Track.** Absence of a Dot means that nothing has yet been recorded on the Track. This allows you to tell at a glance whether a given Track contains any recorded Track Data, or whether it has simply been defined, but not yet recorded.

CART

When a Cartridge Program has been selected for a particular Track, it will play that Program and display the Program's name as described earlier, for as long as the Cartridge remains inserted. If, however, the Cartridge is removed, that Track Location will display the word ***CART*** instead of the Program Name, as in the case of **Track 4** above. This is to remind you that the Track is "pointing to" a Cartridge Program, but no Cartridge is inserted.

When this is the case, the Internal Program that is in the same relative Memory Location as the missing Cartridge Program will play on that Track until the Cartridge is re-inserted (or until another Program is selected for the Track). When the Cartridge is re-inserted, the proper Cartridge Program's Name will reappear, and that Program will play on the Track.

MIDI

On the **Mix/MIDI** Page (which we will cover next), it is possible to assign **MIDI only** Status to a given Track. This means that whatever is recorded on the Track, or played from the Keyboard when the Track is selected, will be sent out over MIDI, but will not sound at all on the **ESQ 1**. When **MIDI only** Status has been selected for a Track on the **Mix/MIDI** Page, the word ***MIDI*** will replace the Program Name on the **Tracks Select** Page, as in the case of **Track 3** above.

[SELECT]   Tracks Select PAGE   (cont'd)

SEQ-

When **SEQ-** Status has been selected for a Track on the **Mix/MIDI** Page, the word ***SEQ-*** will replace the Program Name on the **Tracks Select** Page, as with **Track 6** in the previous illustration.

FLASHING UNDERLINE -- Playing the EDIT Program on a Track

When a Track is selected, you can hear the Sound that's in the Edit Buffer (the EDIT Program) on that Track by simply pressing the **COMPARE** Button. Two things happen:

1) The Name of the Edit Program appears in that Track's Location on the **Tracks Select** Page, and
2) The underline beneath the Track Location **flashes**. The flashing underline means that the Track is playing the EDIT Program.

Pressing the **COMPARE** Button again returns you to the Program that is really on the Track -- the underline stops flashing, and the original Program Name reappears. This function is useful if you want to Edit the Program that is on a Track, and then hear the Track with the Edited Program.

Note: You cannot Record a Track with the Edit Program. Going into **Record** automatically puts the original Program back onto the Track. If you want to Record with the Edited Program on a Track you must first Write (save) it to a Program Location and then select the newly written Program for the Track, as described earlier. Also, if you leave the Track, by "unselecting" the Track or selecting another Track, the original Program will automatically be put back on the Track.
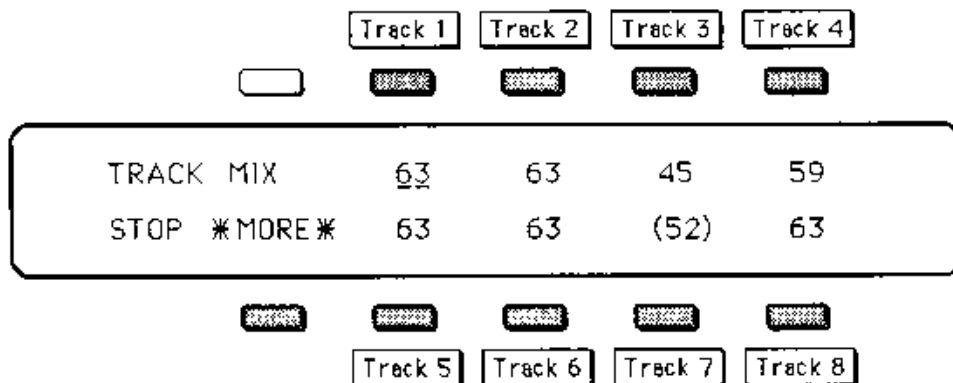
[Mix / MIDI]   Tracks Mix/MIDI Page

For setting the Mix Level, MIDI Channel, MIDI Status and Program Number of each Track.

When you are using the **ESQ 1** by itself, Recording Tracks with only internal sounds, you won't need to concern yourself with the **Mix/MIDI** Page too much, except to balance the output levels of the different Tracks (Mix down). But once you start serious MIDI Sequencing -- driving numerous external instruments from the **ESQ 1** -- this page becomes the control center for your entire MIDI rig. From here you can determine the **Status** of each Track, send **Program Changes** to external instruments, adjust the **Mix** Level, and select a **MIDI Channel** for each Track.

When you begin setting up the MIDI configuration of a new Sequence, the **Mix/MIDI** Page should be your first stop. When you select a previously **UNUSED** Track from this Page, the effect is same as from the **Tracks Select** Page -- the new Track takes on all the characteristics of whatever Track was selected before (or of the Straight Synth section, if no Track was selected). You will find that this allows you quickly to define the configuration of a new Track, by first selecting a defined Track with a similar setup, then selecting an **UNUSED** Track and changing only the settings you want to be different for the new Track.

Sub-pages

The **Mix/MIDI** Page is actually four different Sub-pages, all of which are reached by pressing the **Mix/MIDI** Button.   On all of these Sub-pages, each Track occupies the same relative location on the Display as it does on the **Tracks Select** Page:

```
        [Track 1]  [Track 2]  [Track 3]  [Track 4]

 [    ]   [███]     [███]      [███]      [███]

 ┌──────────────────────────────────────────────────┐
 │   TRACK  MIX        63        63        45      59 │
 │   STOP  *MORE*      63        63       (52)     63 │
 └──────────────────────────────────────────────────┘

         [███]    [███]     [███]     [███]    [███]
        [Track 5] [Track 6] [Track 7] [Track 8]
```

On each of these Sub-pages, Display location # 6 shows the word *MORE*. Pressing *MORE* advances the Display to the next Sub-page. Which of the four Sub-pages will appear when the **Mix/MIDI** Page is selected depends on which was last used. Here we will take them in order starting with the **Track Status** Sub-page.

Select the **Mix/MIDI** Page and press *MORE* until the upper left segment of the Display says **TRACK STATUS**.

TRACK STATUS

The **Status** of a Track determines whether that Track will play only Locally (on the **ESQ 1**); over MIDI only; or Locally <u>and</u> over MIDI. This applies to playing the **ESQ 1** Keyboard with the Track selected, as well as playing back data Recorded on the Track.

```
┌──────────────────────────────────────────────────┐
│                                                    │
│   TRACK STATUS   LOCAL   MIDI    BOTH   -SEQ-       │
│                                                    │
│   STOP  *MORE*   LOCAL   LOCAL   -SEQ-  BOTH        │
│                                                    │
└──────────────────────────────────────────────────┘
```

----› Select any of the eight Tracks -- it becomes <u>underlined</u>.
----› Use the **Data Entry Slider and the Up and Down Arrow** Buttons to step through the four possible Track States:

BOTH -- The Track will play the **ESQ 1** Program showing on the **Tracks Select** Page and will be sent out over MIDI on its selected MIDI Channel.
MIDI -- The Track will be sent out over MIDI on its selected MIDI Channel, but will not play on the **ESQ 1**. When this Status is selected, the word ***MIDI*** will appear instead of the Program Name on the **Tracks Select** Page. Incoming MIDI Data will, however, play on the **ESQ 1**.
LOCAL -- The Track will play on the **ESQ 1** but will not be sent out over MIDI.
SEQ -- Same as MIDI Status, except that incoming MIDI data will not play locally on the **ESQ 1**. When **SEQ** is selected, the word ***SEQ-*** will appear instead of the Program Name on the **Tracks Select** Page.

The chart below details the behavior of a selected Track for each **Track Status**:

| Track Status=	BOTH	LOCAL	MIDI	SEQ
Playing the ESQ 1 keyboard plays on the ESQ 1	Yes	Yes	No	No
Playing the ESQ 1 keyboard sends out MIDI	Yes	No	Yes	Yes
Playing the Track (pressing Play) plays on the ESQ 1	Yes	Yes	No	No
Playing the Track (pressing Play) sends out MIDI	Yes	No	Yes	Yes
Incoming MIDI data plays on the ESQ 1	Yes	No	Yes	No
Incoming MIDI data will be recorded on the Track (if you enter Record.)	Yes	No	Yes	Yes

----> Selecting a Track on the **Track Status** Sub-page, and then pressing its button again, causes the underline to disappear, "Unselecting" the Track and putting the **ESQ** 1 into the **Straight Synth** mode (no Track Selected).

* * * * **Note:** If you select a Track and get no sound from the keyboard, check to see if the Track has been assigned **MIDI** or **SEQ** Status here or has been turned **OFF** on the **Track Mix** Sub-page.   **Now Press *MORE***

TRACK PROG NUM -- Track Program Number

From this Page you can adjust the Program a Track plays in terms of its MIDI Program Number. This is the number of the Program Change that will be sent out over MIDI when a Sequence is selected, or comes around in a Song.

It is also the MIDI number of the Internal **ESQ 1** Program assigned to the Track. The Program you selected for the Track from the **Tracks Select** Page and the Program number selected here are linked to each other -- changing either one will cause the other to change.
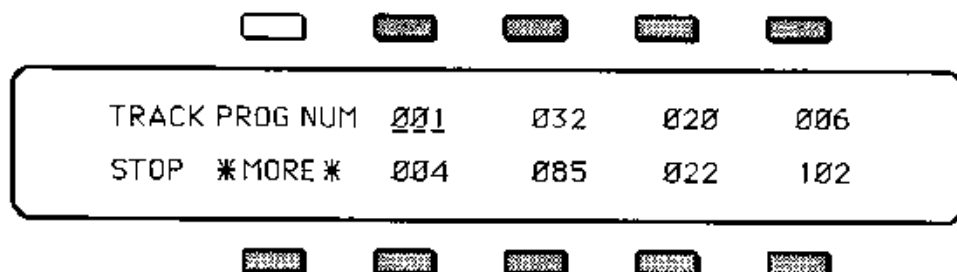
```
TRACK PROG NUM   001     032     020     006
STOP   *MORE*     004     085     022     102
```

----> Select any of the eight Tracks -- it becomes underlined.
----> Use the **Data Entry Slider and the Up and Down Arrow** Buttons to change the MIDI Program Number. Range for each Track is **001 To 120** if a Program Cartridge is inserted, **001 to 40** if no Cartridge is in. Changing this number will also change the Program for that Track on the **Tracks Select** Page to the Internal or Cartridge Program which corresponds to the new number.
----> Selecting a Track, and then pressing its button again, causes the underline to disappear, "Unselecting" the Track and putting the **ESQ 1** into the **Straight Synth** mode (no Track Selected.)
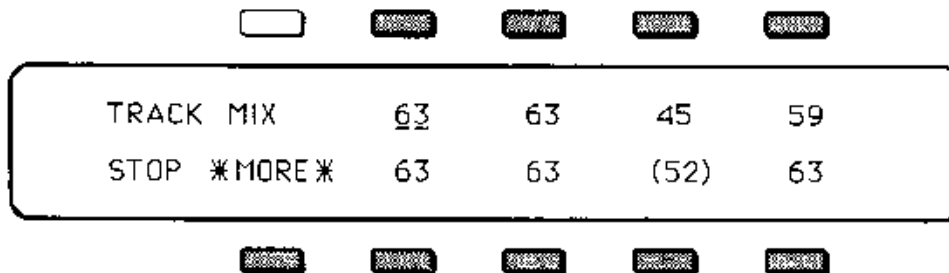
When a Track is sending to an external instrument via MIDI, you can use this Sub-page to change the Program (or patch) that instrument is playing, assuming it receives MIDI Program changes. This means that once you have assigned each external instrument a different MIDI Channel, you can control them all right from the **ESQ 1**.
   **Now press *MORE*.**

TRACK MIX

TRACK MIX determines the relative volume of each Track. This controls the LOCAL, or Internal, volume of a Track, <u>as well as</u> MIDI Volume (MIDI Controller #7). When a new Sequence is selected, each Track sends out MIDI Volume information on its selected MIDI Channel. (Not all instruments receive MIDI Volume, but the Sequencer Tracks send it to and receive it from those who do.)

```
        ┌──────┐    �▪    ▪▪▪▪▪    ▪▪▪▪▪    ▪▪▪▪▪
        └──────┘
   ┌─────────────────────────────────────────────────────────┐
   │                                                          │
   │    TRACK  MIX         63      63      45      59         │
   │                       ──                                 │
   │    STOP  *MORE*       63      63     (52)     63         │
   │                                                          │
   └─────────────────────────────────────────────────────────┘

        ▪▪▪▪▪     ▪▪▪▪▪     ▪▪▪▪▪     ▪▪▪▪▪     ▪▪▪▪▪
```

‑‑‑‑› Select any of the eight Tracks -- it becomes <u>underlined</u>.
‑‑‑‑› Use the **Data Entry Slider** and the **Up and Down Arrow** Buttons to adjust the Level of the Track. Range for each Track is **OFF To 63.** The Level can be continuously adjusted, either while playing back recorded Track Data, or while playing the **ESQ 1** Keyboard with the Track selected.
‑‑‑‑› Adusting a Track all the way to **OFF** will silence the Track, Locally and on external instruments which receive MIDI Volume.

Muting a Track

Unlike the other three Sub-Pages, selecting a Track on this Page, and then pressing its button again, **Mutes** the Track on the **ESQ 1** and over MIDI. (This works whether the Receiving Unit reads MIDI Volume or not.)

When a Track is Muted in this way, **Parentheses** appear around the Mix number, as in the case of **Track 7** in the illustration above. Pressing the Button again removes the Parentheses and Unmutes the Track. This is a handy way to temporarily mute a Track without disturbing its **MIX Level.** This is a temporary state and is <u>not saved with the Sequence</u>. If you Mute Track 6, and then select another Sequence, Track 6 will still be Muted in the new Sequence.

You can think of this Sub-page as the "Mix down" section of the Sequencer. For each Sequence you can balance the Output Level of each Track that is playing Locally, and of each MIDI Track that is playing on an instrument which receives MIDI Volume. For external instruments which don't receive MIDI Volume, you will have to adjust their volume controls separately.
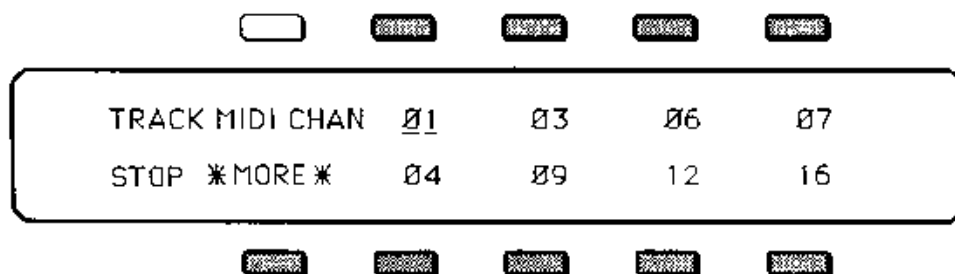**Now Press *MORE***

TRACK MIDI CHANNEL

From this Sub-page, each Track of a Sequence is assigned its own **MIDI Channel**. The Track will always <u>send</u> information on that Channel, and only on that Channel. This applies to playing the **ESQ 1** Keyboard when the Track is selected, as well as playing back recorded Track Data. (Of course, if the Track is assigned LOCAL Status, its MIDI Channel doesn't matter -- it will not send on any Channel.)

What information a Track <u>receives</u> depends on which **Mode** is selected on the **MIDI** Page. When the **ESQ 1** is in **MULTI** Mode each Track will receive incoming MIDI information only on the Channel you select here. In **OMNI** Mode, a selected Track will receive on any Channel. In **POLY** Mode, a selected Track will receive only on the **Base Channel** (the Channel selected on the **MIDI** Page.)

```
         ⊂▭⊃    ▬    ▬    ▬    ▬

    ╭─────────────────────────────────────────╮
    │                                         │
    │   TRACK MIDI CHAN  Ø1    Ø3    Ø6    Ø7  │
    │                                         │
    │   STOP  ✳MORE✳     Ø4    Ø9    12    16  │
    │                                         │
    ╰─────────────────────────────────────────╯

     ▬    ▬    ▬    ▬    ▬
```

----> Select any of the eight Tracks -- it becomes <u>underlined</u>.

----> Use the **Data Entry Slider** and the **Up and Down Arrow** Buttons to assign a MIDI Channel to the Track. Range for each Track is **1** To **16**.

----> The **ESQ 1** must be in **MULTI** Mode for each Track to receive MIDI information on its selected Channel. You should assign each Track to a different Channel. If two or more Tracks have the same MIDI Channel, the <u>lowest-numbered</u> Track will receive the information, and the higher-numbered one(s) will receive nothing.

----> Selecting a Track, and then pressing its button again, causes the underline to disappear, "Unselecting" the Track and putting the **ESQ 1** into the **Straight Synth** mode (no Track Selected).

* * * * **Note:** When you are playing an external instrument from a Track, don't change the MIDI Channel while you are holding down a key or pressing the Sustain Pedal. This can cause the receiving instrument to sustain notes forever, which can be annoying. If this happens, turn the receiving unit Off, and then turn it back On.

Pressing *MORE* again returns you to the Track Status Sub-page.

OTHER SEQUENCER PAGES
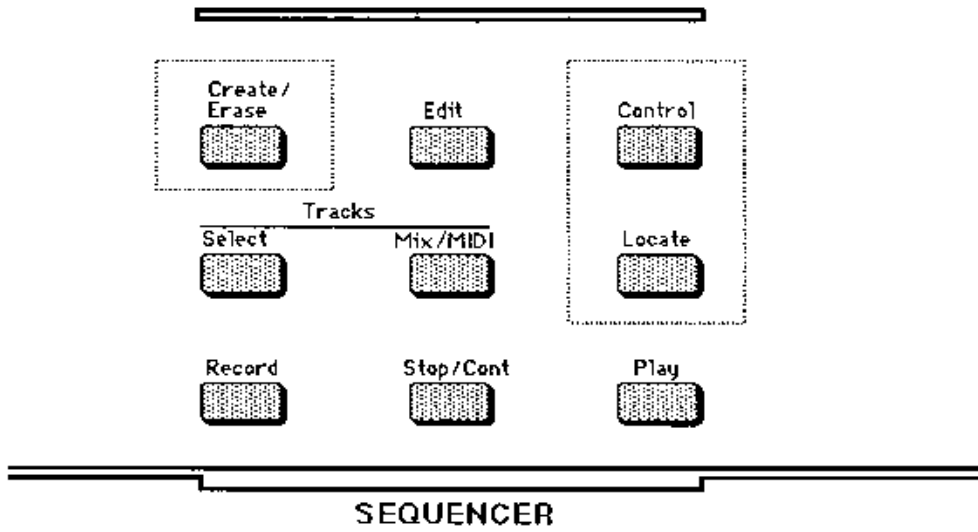
[CONTROL]   SEQUENCER CONTROL PAGE

Controls Clock Source, Loop and Metronome Parameters

```
┌──────┐           ┌──────────┐          ┌────────────┐
│ Page │           │Metronome │          │   Sync     │
│ name │           │  Value   │          │(Select Clock│
└──────┘           └──────────┘          │  Source)   │
                                         └────────────┘
        ▭     ▒▒▒     ▭      ▭      ▒▒▒

  ╭─────────────────────────────────────────────────────╮
  │   CONTROL      METRONOME= 1/4   SYNC=  INTERNAL       │
  │                                                       │
  │   STOP   CLICK= ON    COUNTOFF=CLICK    LOOP= ON      │
  ╰─────────────────────────────────────────────────────╯

        ▒▒▒      ▭      ▒▒▒     ▭      ▒▒▒

┌──────────┐  ┌──────────┐  ┌──────────┐  ┌──────────┐
│Sequencer │  │  Click   │  │Countoff  │  │   Loop   │
│  Status  │  │(Metronome)│  │ Select  │  │  Switch  │
└──────────┘  │  Switch  │  └──────────┘  └──────────┘
              └──────────┘
```
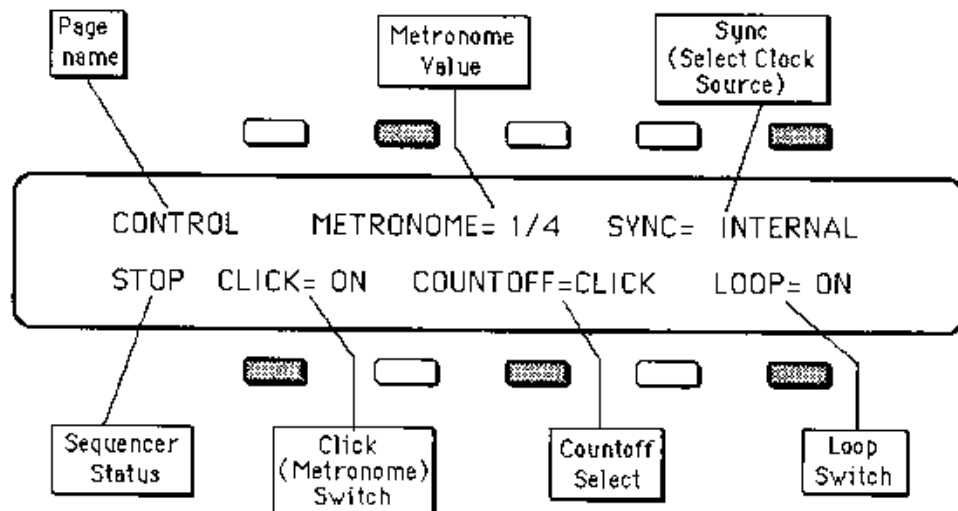
(Inactive Buttons appear in White)

Before recording or playing back a Sequence, you will want to select the **CONTROL** Page and adjust its parameters to suit your current needs. From this Page you control the **CLICK** track (or metronome), the **COUNTOFF** (a one measure count, with or without Click track, before the Sequence begins), the **LOOP** switch and the Clock Source.

Don't forget that the settings you select here (as with all **ESQ 1** parameters) will be remembered by the **ESQ 1**, even while it is OFF. It is a good idea, when starting to record or play Sequences, to check this Page first. (You don't, for example, want the Click Track ON while playing sequences in live performance.)

Use this Page to:

1) Select the Sequencer Clock Source;
2) Turn ON or OFF the **CLICK** (metronome);
3) Adjust which beats the Metronome plays on;
4) Choose whether or not you want a **COUNTOFF**; and
5) Turn ON or OFF the **LOOP** switch.

ACTIVE CONTROLS:

2. METRONOME

When **CLICK=ON** (see **#6** below) a Click Track, or Metronome, will play throughout the Track. This Click Track will normally fall on each beat of the measure (on each 1/4 note in 4/4 Time, for instance), with the first beat accented. When you select a new Sequence, the Metronome is automatically set for one Click per beat. You don't have to adjust it unless you want something different.

You can, however, use this control to adjust which beats of the measure the Click will play on. If you are recording something with a shuffle feel, for example, you might want to set the **METRONOME** to 1/8th-note Triplets.   Any value which is valid within the Sequence's Time Signature can be selected from the following:

1/4	(Quarter Notes)	**1/4T**	(Quarter-note Triplets)
1/8	(Eighth Notes)	**1/8T**	(Eighth-note Triplets)
1/16	(Sixteenth Notes)	**1/16T**	(Sixteenth-note Triplets)
1/32	(Thirty-second Notes)	**1/32T**	(Thirty-second-note Triplets)

5. SYNC

Selects Sequencer Clock source. The setting of this control determines where the Sequencer gets its Clock signal -- Internally, or from an external source. The three options are:

----› **INTERNAL --** The **ESQ 1** uses its own Clock.

----› **MIDI CLOCK --** The **ESQ 1** Sequencer will sync to the Clock of any MIDI device which has a clock pulse (a Drum machine, other sequencer, etc.) and whose MIDI OUT is connected to the **ESQ 1**'s MIDI IN.   (See p. 168 for more details.)

MIDI Clocks are transmitted and received regardless of which MIDI Channels the two devices are set to. Almost all current MIDI sequencing devices send **Start**, **Stop** and **Continue** messages, so you can use the sending device to Start , Stop and Continue the **ESQ 1** Sequencer as well as controlling its Clock rate.

----› **TAPE SYNC --** When **TAPE SYNC** is selected, the Sequencer will take its clock source from the **Tape In** jack on the rear panel. This jack can be connected to the output of a multitrack tape deck, where a Tape Sync track has previously been recorded.   When put into **Play** or **Record** modes, the **ESQ 1** will wait for the recorded sync signal before starting to play. (See p. 169 for more.)

The **Tape In** jack on the rear panel can also be connected to the **Tape Out** or **Clock Out** jack on any other sequencing device, drum machine, etc. By setting **SYNC** to **TAPE SYNC**, you can then sync the **ESQ 1** to the other machine's clock without connecting them via MIDI. (This does not, however, send Start, Stop and Continue messages.)

Likewise, if the **Tape Out** jack of the **ESQ 1** is connected to the **Tape In** of another sequencing device, then that device can sync to the **ESQ 1**'s clock without connecting them via MIDI. (The other device must be set for Tape Sync.)

6. CLICK

This control turns On or Off the "**Click**" track, or metronome, during the Sequence. The **Click** is an electronic "Tick" which plays on each beat of the measure (or whatever value has been assigned at **#3** above). The **first beat** of every Bar is **accented**.

The setting of this parameter affects only the body of the Sequence (or Song) itself, and has no effect on the **Countoff**. As a general rule, you will want the **Click** ON when recording Tracks, and OFF when playing them back.

The volume of the **Click** Track is fixed, and is not affected by the **Volume** Control of the **ESQ 1**. With the **Click** ON, first adjust your mixer or amplifier so that the **Click** plays at an appropriate level. Then use the Volume Control to set the Synthesizer volume to the proper level relative to the **Click**.

8. COUNTOFF

The **Countoff** is a one-Bar count which precedes a Sequence or Song, when it is played from the beginning. This count can be with or without a **Click** track. The available options are:

----› **NONE** -- The Sequence begins playing immediately after you press **Play** or **Rec/Play**.

----› **QUIET** -- There is one measure of silence before the Sequencer begins to **Play** or **Record**. This is good when using the **ESQ 1** with a Drum Machine -- you can use the Drums as a lead-in instead of the **ESQ 1**'s **Click**.

----› **CLICK** -- There is one measure of **Click** track before the Sequence begins to play. In many normal sequence recording situations, this setting, **COUNTOFF=CLICK**, is the most useful.

10. LOOP

Determines whether a Sequence or Song will repeat after playing through once.
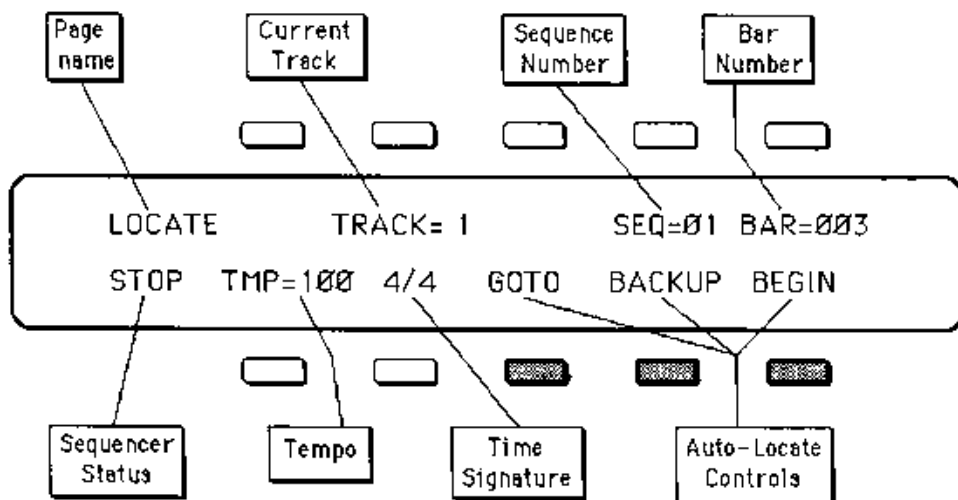
When ON: At the end of a Sequence, or Song, the Sequencer will return to the beginning and play it over again. It will continue to repeat until **STOP** is hit.

When OFF: The Sequence or Song will play once through and stop.

The setting of the **LOOP** Switch is saved for each Sequence, but not for a Song. A Song will only loop if **LOOP=ON** when it is played.

[LOCATE]   SEQUENCE LOCATE PAGE

Provides information about location within a Sequence; Allows access to any Bar within a Sequence; Adjusts Tempo; Shows Time Signature and Selected Track.


```
 Page      Current    Sequence    Bar
 name       Track      Number    Number

   ▭          ▭        ▭    ▭       ▭

 ┌─────────────────────────────────────────────┐
 │   LOCATE        TRACK= 1        SEQ=Ø1 BAR=ØØ3 │
 │                                               │
 │   STOP   TMP=1ØØ  4/4   GOTO   BACKUP  BEGIN  │
 └─────────────────────────────────────────────┘

          ▭          ▭     ▨▨▨   ▨▨▨   ▨▨▨

 Sequencer      Tempo      Time       Auto-Locate
  Status                 Signature     Controls
```

(Inactive Buttons appear in White)

The **LOCATE** Page appears whenever the Sequencer is in the **Play** or **Stop** modes, and when the **LOCATE** Button on the front panel is pressed. This Page provides valuable Sequencer information as well as control over **Tempo** and **Auto-Locate** functions.

The **Status** of the Sequencer (whether it is in **Play, Stop, Record**, etc.) is always shown in the lower left-hand corner of the Display on this Page. The currently selected **Track** is displayed on the top row. (You can't select a different Track from here; this Readout is just there to help you keep things straight.) If no Track is selected (Straight Synth operation), it will read **TRACK=NONE**.

The **TEMPO** Control is always active. Unless you have pressed **GOTO**, the **Data Entry Slider** and the **Up and Down Arrow** Buttons will affect only the Tempo while you are on the **LOCATE** Page. **TEMPO** does not have to be selected.

The last three buttons on the **LOCATE** Page are the **Auto-Locate** Controls. They allow you to quickly go to any Measure within a Sequence, to back up one measure at a time, or to reset to the beginning of the Sequence.

This section describes the **LOCATE** Page as it appears when a <u>Sequence</u> is selected. When a <u>Song</u> is selected, the **LOCATE** Page is a little different (see **SONG LOCATE** Page, p. 164).

. [LOCATE]   SEQUENCE LOCATE PAGE (cont'd)

READOUTS AND ACTIVE CONTROLS:

2.   TRACK=

Tells you which of the eight **Tracks** is selected. If no Track is selected, it will read **TRACK=NONE**.

4.   SEQ=

Tells you which Sequence is selected.

5.   BAR=

Tells you which Bar of the Sequence is playing; or, if the Sequencer is in **Stop** Mode, which Bar it will play from if you press **Stop/Cont.**

6.   TMP=

The **Tempo** of the Sequence, in Beats per minute, is displayed here, and is continuously controlled by the **Data Entry Slider** and the **Up and Down Arrow** Buttons. **Tempo** does not have to be selected.

When an External Clock Source is selected (see **SYNC**, p. 119) this readout will show **TMP=EXT**.

7. TIME SIGNATURE

The **Time Signature** of the Sequence is displayed here. The **Time Signature** is set when the Sequence is Created, and cannot be changed from here.

Auto-Locate Controls:

8.   GOTO

GOTO allows you to start Playing or Recording the Sequence from any Bar within the Sequence. To reach a particular Bar:

----›   Press **GOTO**. The Display shows:

```
  ⬭        ⬭        ⬭        ⬭        ⬭

┌──────────────────────────────────────────────┐
│                                              │
│   LOCATE        TRACK= 1         SEQ=Ø1  BAR=ØØ3 │
│                                              │
│                      GOTO    BAR=ØØ3          │
│                                              │
└──────────────────────────────────────────────┘

  ⬭        ⬭        ▣        ⬭        ⬭
```
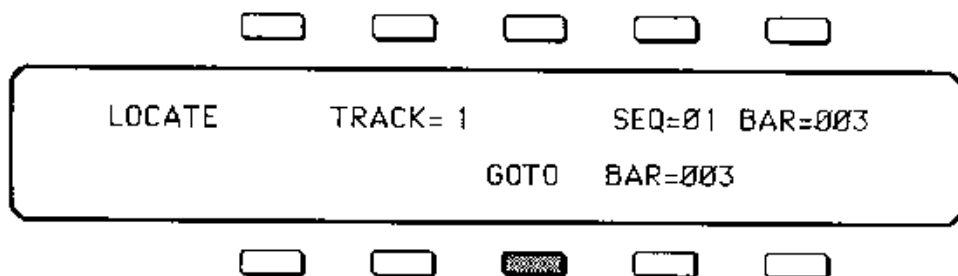
----›   Use **Data Entry Slider** and the **Up and Down Arrow** Buttons to adjust the **GOTO** Bar number to the Bar at which you want to start. You can choose any Bar within the current Sequence.

----> Press **GOTO** again. You are returned to the **LOCATE** Page, with the new Bar number showing in the upper-right corner of the Display.

> **Helpful Hint:** The **GOTO** Bar you last selected is remembered by the **ESQ** 1. This means that you can just press **GOTO** <u>twice</u> to quickly locate to the same Bar, when, for example you want to start from the same point in the middle of a Sequence for repeated takes of a Track.

9.) BACKUP

Each press of this button backs the Sequence Location up <u>One Bar</u> from the current Location.

10.) BEGIN

Pressing this button resets the Sequence to the beginning of Bar 1. It's a good idea to get in the habit of hitting **BEGIN** before recording any Track, since going into **Record** Mode does not automatically start the Sequence from the beginning.
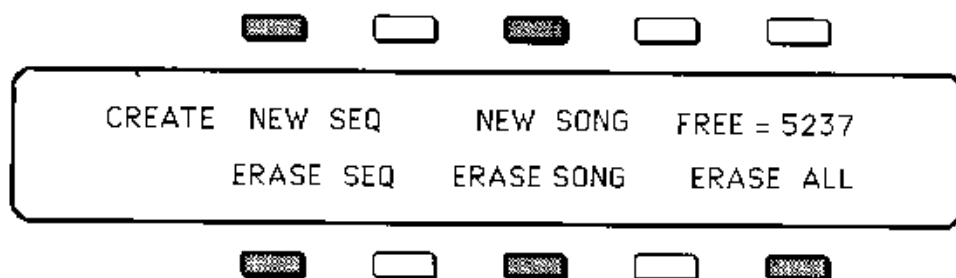
. [CREATE/ERASE]   CREATE/ERASE PAGE

For Creating new Sequences or Songs, Erasing existing Sequences or Songs, and Erasing all Sequencer Memory.

Until a Sequence or Song has been created, it is just an empty, undefined slot in the **ESQ 1's** Memory, and cannot be selected or played. An undefined Sequence will be shown on the **Sequence Select** Page as **XXX - 05**, instead of **SEQ - 05**, which is how a Sequence appears after it has been defined. The first step in recording a new Sequence is to **Create**, or define, a Sequence in one of the empty Sequence Locations.

When you press the **CREATE/ERASE** Button, the Page appears as shown below:

```
  �▌     ▭       ▌▌       ▭        ▭

 ┌──────────────────────────────────────┐
 │   CREATE  NEW SEQ      NEW SONG   FREE = 5237  │
 │                                      │
 │           ERASE SEQ     ERASE SONG    ERASE ALL │
 └──────────────────────────────────────┘

  ▌▌       ▭       ▌▌       ▭        ▌▌
```

Available Memory

First notice the upper-right segment of the Display -- [FREE=____]. This tells you the number of **Bytes** of Sequencer Memory available. A **Byte** is eight **Bits** of digital information. Each note you play uses a little over three Bytes, so when all the Internal Sequencer Memory (about 8000 Bytes) is available, you can record about 2400 notes. This can be expanded to 32000 Bytes, or about 10000 notes, by installing the optional **SQX-10 Sequencer Expander Cartridge**.

These numbers reflect notes played (Key Events) only, and do not take into account Controllers such as Pitch Bend, MOD Wheel, Pressure, etc. Controller values are recorded by a digital sequencer as a steady stream of numbers, and thus use up available memory much faster than Key Events. When you record using a lot of Controllers, you will expend the available memory rather quickly.

ACTIVE CONTROLS:

1. CREATE NEW SEQUENCE
A new Sequence can be Created in any of the thirty Sequence Memory Locations that doesn't contain a defined Sequence -- where **XXX** appears instead of **SEQ** on the **Sequence Select** Pages. It is important to note that at the time a Sequence is created, you must define the **Time Signature** of that Sequence. The Time Signature cannot be changed after the Sequence has been created.

To CREATE a New Sequence

----› Select **CREATE/ERASE** Page

----› Press **NEW SEQ**. The Display shows the following:

```
┌──┐  ┌──┐  ▓▓▓  ┌──┐  ▓▓▓
```

```
┌─────────────────────────────────────────────────────┐
│                                                       │
│    CREATE   NEW SEQUENCE 05          ✳ YES ✳          │
│             TIME SIGNATURE = 4 / 4   ✳ NO  ✳          │
│                                                       │
└─────────────────────────────────────────────────────┘
```

```
┌──┐  ┌──┐  ┌──┐  ▓▓▓  ▓▓▓
```

----› **Select a Memory Location.** Use the **Data Entry Slider** and the **Up and Down Arrow** Buttons to select which Sequence Memory Location you wish to create the new Sequence in. Only the numbers of empty, or undefined, Locations are available for selection.

----› **Adjust the Time Signature.** If you want the new Sequence to have a Time Signature other than 4/4, press the "Soft " button below the Time Signature and then use the **Data Entry Slider** and the **Up and Down Arrow** Buttons to adjust it to the one you want. If you want 4/4 Time you don't have to adjust anything -- the Page always appears with 4/4 Time selected.

----› Press ***YES*** to Create a Sequence, with the selected Time Signature, in the selected Sequence Memory Location. You will then be returned to the **Sequence Select** Page that the new Sequence is on, and the new Sequence will be selected. Or Press ***NO*** to cancel the procedure for any reason.

3. CREATE NEW SONG

The **ESQ 1's Song** Mode allows you to chain Sequences together in any order, with up to 99 Steps and up to 99 Repetitions of each Step per Song. There are ten **Song Memory Locations** which, unlike the 30 Sequence Locations, have Names instead of numbers. You name the Song when you create it.

When you create a new Song, it is automatically put in the first empty Song Memory Location on the **Song Select** Page. Since all ten Songs are selected from the same Page, and they are all named, there is no need to be able to select the exact location of a given Song. If there are no empty Song Locations, you must Erase a Song (see below) before you can create a new one.

To CREATE a New Song

----> Select **CREATE/ERASE** Page

----> Press **NEW SONG**. The Display shows the following:

```
┌──┐   ┌──┐   ┌──┐   ┌──┐   �t000▒

┌─────────────────────────────────────────┐
│                                           │
│   CREATE  NEW  SONG  SONG-1      ✳ YES ✳  │
│                                           │
│   MOVE  CURSOR-  LEFT    RIGHT   ✳ NO ✳   │
│                                           │
└─────────────────────────────────────────┘

┌──┐   ▒▒▒▒   ▒▒▒▒   ┌──┐   ▒▒▒▒
```

----> **Select a Name for the New Song.** In the middle of the upper row of the Display is the six-letter **Song Name**, with a Cursor beneath the first letter. Use the **Data Entry Slider** and the **Up and Down Arrow** Buttons to change the first letter to the one you want. Press the "Soft" Button labeled **RIGHT** to move the Cursor to the next letter, and change that letter the same way.

Do the same for each space, using the **Data Entry Slider** and the **Up and Down Arrow** Buttons to scroll the available characters and the **LEFT** and **RIGHT** Buttons to move the Cursor, until the Display shows the Song Name you want.

----> **Press *YES*** to Create the Song. You will then be placed on the **SONG EDIT** Page from which you can combine Sequences to form a Song (see **SONG EDIT** Page, p. 160) Or Press ***NO*** to cancel the procedure for any reason.

6. ERASE SEQUENCE

Erasing a Sequence returns that Sequence Memory Location to its undefined, or empty state. The Sequence you want to Erase must be selected before entering the **CREATE/ERASE** Page.

To ERASE a Sequence

----> Make sure the Sequence you want to Erase is selected.

----> Select **CREATE/ERASE** Page.

----> Press **ERASE SEQ**. The Display asks **"ERASE EXISTING SEQ 01"**.

----> Press ***YES*** to Erase the Sequence. You will be returned to the **Sequence Select Page.** Or Press ***NO*** to cancel the procedure for any reason.

8. ERASE SONG

Erasing a Song returns that Song Memory Location to its undefined, or empty state. The Song you want to Erase must be selected before entering the **CREATE/ERASE** Page.

To ERASE a Song

----› Make sure the Song you want to Erase is selected.

----› Select **CREATE/ERASE** Page.

----› Press **ERASE SONG**. The Display asks **"ERASE EXISTING SONG SONG-0"** (where **SONG-0** stands for whatever the name of the Song is).

----› Press *YES* to Erase the Song. You will be returned to the **Song Select Page.** Or Press *NO* to cancel the procedure for any reason.

10.) ERASE ALL

This procedure will erase all Sequences and Songs in the **ESQ 1**'s Memory. This is not something you want to do casually. Save any Sequencer data you value to audio Tape, or via MIDI to a **Mirage** or another **ESQ 1** before you even think about doing an **ERASE ALL.**

ERASE ALL will return every Sequence except **SEQ 01**, and every Song except **SONG 00** to its undefined state. (You can't totally Erase the last Sequence. There will still be one Sequence and one Song defined, though after an **ERASE ALL** they contain no Track or Song Data.)

To ERASE ALL Sequences and Songs

----› Save any Sequences and Songs you want to keep to Tape or via MIDI.

----› Select **CREATE/ERASE** Page.

----› Press **ERASE ALL**. The Display asks **"ERASE ALL SEQUENCES AND SONGS".**

----› Press *YES* to Erase All Sequences and Songs in Memory. You will be returned to the **Sequence Select Page.** Or Press *NO* to cancel the procedure for any reason.

SECTION 6 --Recording a Sequence

SEQUENCING ON THE ESQ 1

You may or may not own a roomful of other MIDI Instruments to sequence from the **ESQ 1** -- either way you will find that the **ESQ 1** Sequencer allows you to create poly-timbral recordings with amazing ease. In this section we will deal first with Recording various Tracks of a Sequence on the **ESQ 1** alone (no MIDI connections).

RECORDING THE FIRST TRACK

The length of the First Track defines the length of the Sequence. For this reason, there is a special procedure for recording the First Track of a new Sequence.

To Record the First Track of a Sequence:

----> **Create a New Sequence.** (See **CREATE/ERASE** Page, p. 124.)

----> **Select a First Track.** Go to the **TRACKS SELECT** Page. All the Track locations of a newly created Sequence will say "**UNUSED**":

```
    TRACKS        UNUSED UNUSED UNUSED UNUSED
    STOP  TMP= 100 UNUSED UNUSED UNUSED UNUSED
```
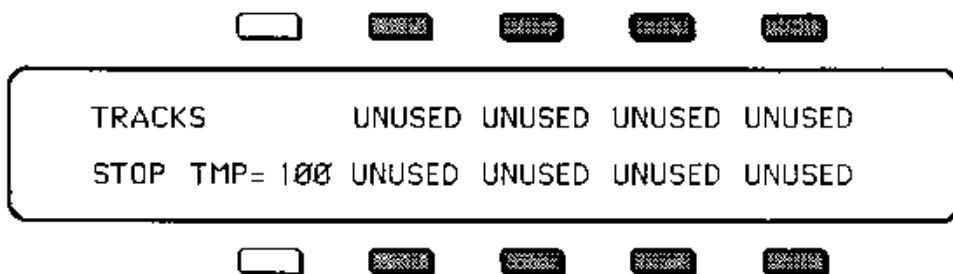
Pressing any of the eight active "Soft" Buttons will select that Track and put the current Program on it. The first Track does not have to be Track 1 -- any of the eight Tracks can be selected and recorded first, and will be considered the First Track.

----> **Select a Program.** While on the **Tracks SELECT** Page, press **INTERNAL**, **CART A** or **CART B**. Then press any of the **Bank Select** Buttons to locate the Program you want. While holding a **Bank Select** Button down, press the "Soft" Button that corresponds to the Program you want. Release the **Bank Select** Button. The Program you chose is now on the selected Track.

----> **Turn the CLICK Track ON.** Select the **CONTROL** Page and make sure that **CLICK= ON**.

----> **Press Record/Play.** While holding down the **Record** Button, Press the **Play** Button. The Metronome starts, and "**REC**" flashes in the lower left corner of the Display. Don't play anything yet -- the Sequencer is in a special Record "Standby" mode that only applies to recording the First Track. Nothing will be recorded until you begin to play.

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----> **Adjust the TEMPO**. Use the **Data Entry Slider** and the **Up** and **Down Arrow** Buttons to set the Tempo you want. Tempo does not have to be selected.

----> **Start Playing.** As soon as you strike any key, the Sequencer will begin recording the Track. The **TMP=**, Tempo readout on the Display will now change to show the Bar Number. The Bar in which you first began playing becomes Bar 001. You can also press the **Sequencer Foot Switch** to put the Sequencer into **Record** without playing anything.

----> **Press STOP to halt recording.** When you get to the end of what you want to record, press the **STOP** Button, or the Footswitch, to stop the Sequencer.

After recording the First Track, the Display shows the Following:

```
 ⬭      ⬭      ⬭      ⬭      ▨

 ╭──────────────────────────────────────────╮
 │                                            │
 │   KEEP  FIRST  TRACK  --  ØØ8 BARS   ✳ YES ✳  │
 │                                            │
 │                                 ✳ NO ✳     │
 │                                            │
 ╰──────────────────────────────────────────╯

 ⬭      ⬭      ⬭      ⬭      ▨
```
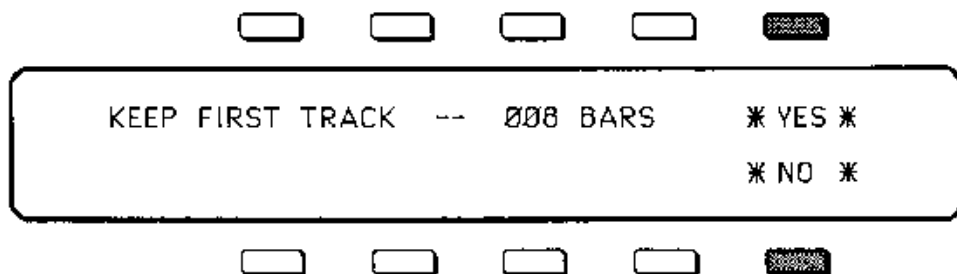
----> **Press *YES* to accept the First Track.** If the length and Performance of your First Track are acceptable, you can answer ***YES*** to enter it into Memory as the First Track. It's length will now define the length of the Sequence. After you answer ***YES***, the First Track is treated like any other, and Recording over the First Track proceeds as shown below, in **"Recording Other Tracks."** Or,

----> **Press *NO* to leave the First Track blank, and try again.** If the length and/or the performance of the Track you just recorded is way off, answering ***NO*** will return the Track to its unrecorded state. Press **Record/Play** and repeat the procedure, as many times as needed to get a First Track that you want to keep.

* * * * **Note:** Even after you press ***YES*** to accept a First Track, neither the length nor the performance of that Track is chiseled in stone. After answering ***YES***, you can, for instance, use the **Change Length** EDIT function to alter the Length of the Sequence, and then Record over the First Track, replacing it entirely. So don't worry that you have to get the First Track perfect before accepting it. You don't.

Using the Foot Switch to Define Sequence Length

You can use the Sequencer Foot Switch to simply define the length of the Sequence without Recording any Track Data on the First Track. With the Sequencer in the Record "Standby" mode (**REC** flashing), press the Foot Switch. This puts the Sequencer into **Record**, and the Bar Count begins. Near the end of the Bar you want to be the Last

Bar, press the Foot Switch again to Stop the Sequencer. The Display will ask **KEEP FIRST TRACK**, as above. If the length is right, answer *YES*. Now you can Record over the first Track as you would any other, as explained below.

RECORDING OTHER TRACKS

After you have answered *YES* to the question "**KEEP FIRST TRACK?**," all other Recording, including re-recording the First Track, will follow the same basic routine. The length of the Sequence is now defined (by the length of the First Track). The rest of the Tracks will automatically have the same length.

There are two methods of entering **Record** -- going straight into **Record** by pressing **Record/Play**, or using the **Overdub** Mode, which waits for you to play before Recording anything.

Recording From the Beginning of A Track

----> **Select Tracks SELECT** Page.

----> **Select another Track.** (Or leave the First Track selected if you want to Record over it.) All the Track locations except for the First Track will still say "**UNUSED**". To Record a different Track, press the "Soft" Button above or below another Track Location to select another Track. The name of the Program, and all the **Mix/MIDI** Page information, from the previous Track is copied onto to the new Track.

----> **Select a Program.** As shown above, from the **Tracks SELECT** Page, press **INTERNAL, CART A** or **CART B**. Then press any of the **Bank Select** Buttons to locate the Program you want. While holding a **Bank Select** Button down, press the "Soft" Button that corresponds to the Program you want. Release the **Bank Select** Button. The Program you chose is now on the selected Track.

----> **Check the CONTROL Parameters.** Select the **CONTROL** Page and see that the **Click, Countoff** and **Loop** switches are set according to your needs. For most recording, the recomended settings are:
LOOP= ON,   CLICK= ON,   COUNTOFF= CLICK.

----> **Select the LOCATE Page, and press BEGIN.** This resets the Sequence to the beginning. It is a good idea to get in the habit of doing this each time you Record a Track. (Pressing **Record/Play** doesn't reset the Sequencer to the beginning of the Sequence.)

----> **Press Record/Play to begin recording.** The **Click** will play for one measure (assuming COUNTOFF= CLICK) and then the Sequencer will enter **Record mode**. It will record whatever you play on the new Track until:
    1.) The end of the Sequence is reached, or
    2.) You press **STOP** (or hit the Foot Switch).

At the end of the Sequence, the **ESQ 1** will leave **Record** Mode and (assuming **LOOP= ON**) enter **Audition Play** Mode -- the lower-left corner of the display reads "**AUDP.**"

----> **Press Stop or the Foot Switch to Stop the Sequencer.** This puts you onto the **PLAY/KEEP** Page:

```
PLAY  ORIGINAL  TRACK        PLAY  NEW  TRACK

KEEP  ORIGINAL  TRACK        KEEP  NEW  TRACK
```
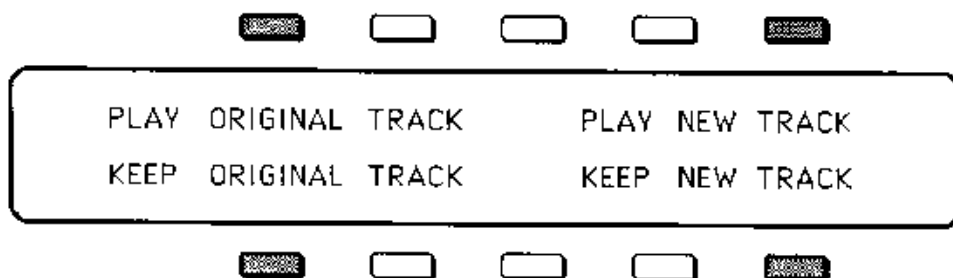
----> **Press PLAY ORIGINAL TRACK** to hear the Track as it was before you recorded the new Track. The first Time you Record a particular Track, this isn't much use, but it is invaluable when you begin to do second and third takes, since it allows you to compare the Tracks before deciding which to Keep.

----> **Press PLAY NEW TRACK** to hear what you just recorded.

----> **Press KEEP ORIGINAL TRACK** to leave the Track as it was in Memory, and "Burn" the one you just recorded. If the Track was empty before Recording, pressing this Button will leave it Empty.

----> **Press KEEP NEW TRACK** to save the New Track into Memory, replacing whatever was on the Track before.

OVERDUB Mode -- "Punching In"

The second method of entering **Record** is to "Punch in" using the **Overdub** Mode. Whenever the **ESQ 1** is in **Play**, pressing the **Record** Button puts it into **Overdub**. The message **ODUB** flashes in the lower-left corner. The moment you play a note, or press the **Sequencer Foot Switch**, the **ODUB** message changes to **REC**, and the Sequencer begins Recording on the selected Track. It will record from that point to the end of the Sequence, unless you press **Stop** first.

To "Punch In" on a Track:

----> **Make sure the Track you want to Punch In on is Selected.** (Or, for a new Track, select a Track, and a Program for it as shown above.)

----> **Press the Play Button.** The Sequence begins to play.

----> **Press the Record Button. ODUB** will flash on the Display. Now the ESQ 1 will wait for you to play before recording anything. You can (assuming that the **LOOP** is ON) let the Sequence play through as many times as you want before Punching in.

· ----› **Begin to Play.** As soon as you play a note, or press the **Sequencer Foot Switch**, Recording begins. Unless you then press **Stop** or the Foot Switch, new Track Data will be Recorded from the point where you Punched in to the end of the Sequence, where the Sequencer will leave **Record** and enter **Audition Play.** How much of the Track you record over depends on where you Punch in:

If this is the length of the Sequence,

Seq.
Start   Seq.
                                                                                                                                                   End

And you begin playing here,

Seq.   Punch   Seq.
Start   In   End

This much of the Sequence will be replaced:

Seq.   ——————————— OVERDUB ————————→ Seq.
Start   End

OR,

If you begin playing here,

Seq.   Punch   Seq.
Start   In   End

Only this much of the Sequence will be replaced:

Seq.   OVERDUB› Seq.
Start   End
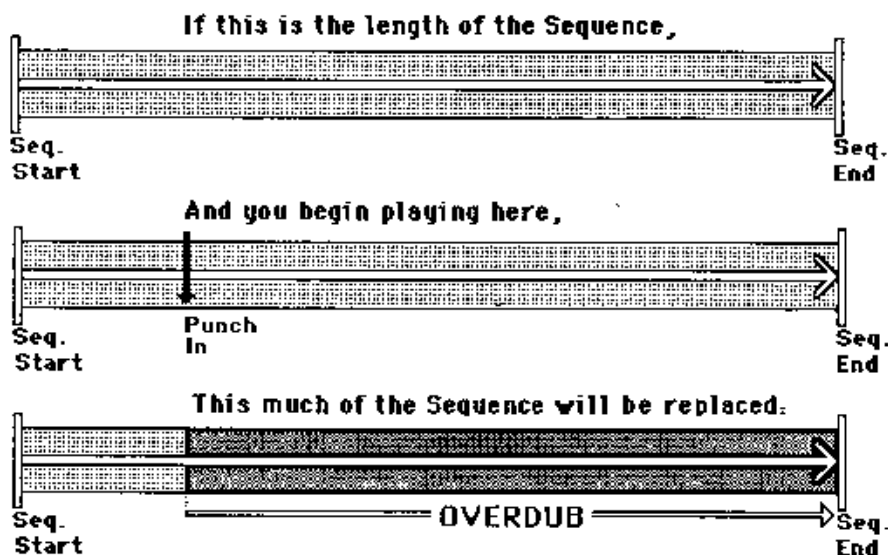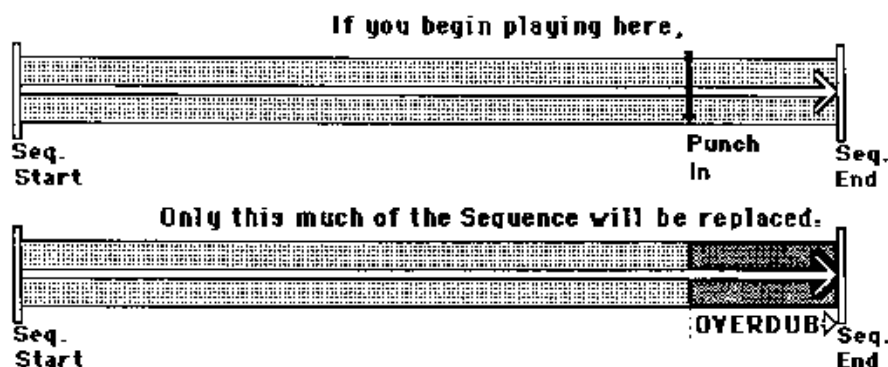
----› **Press Stop.** You will then get the **PLAY/KEEP** Page where you can audition the New and the Original Tracks before deciding which to keep.

The **Overdub** Mode is often a desirable way to enter **Record** even if you plan to record from the beginning of the Track -- just press the **Record** Button while playing a Sequence, wait for the beginning to come around again, and then play, to start Recording. This method lets you get a feel for the Sequence, while listening to it one time through (or more), before Recording. For many players this may work better than having just a one measure **Countoff** in which to get ready to Record.

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"Punching Out"

As mentioned previously, pressing the **Stop** Button, or the **Sequencer Foot Switch** while recording not only stops the Sequencer, but takes it out of **Record**. Pressing **Play** will also take you out of Record, putting you into **Audition Play**. So if, for example, you want to replace the first part of a Track but leave the rest intact, you can do so by simply pressing **Stop**, **Play** or the Sequencer Foot Switch at the point where you wish to Punch Out.

MIDI SEQUENCING ON THE ESQ 1

Basic MIDI Connections

When using the **ESQ 1** to sequence multiple MIDI devices, first connect the various Destination instruments to the **ESQ 1**, and to each other, as shown below. Connect the **MIDI Out** jack of the **ESQ 1** to the **MIDI In** jack of the first instrument. Then connect the **MIDI Thru** jack of the first instrument to the **MIDI In** jack of the second instrument. Connect the **MIDI Thru** jack of the second instrument to the **MIDI In** jack of the third instrument. And so on, for as many devices as you will be using.

ESQ 1
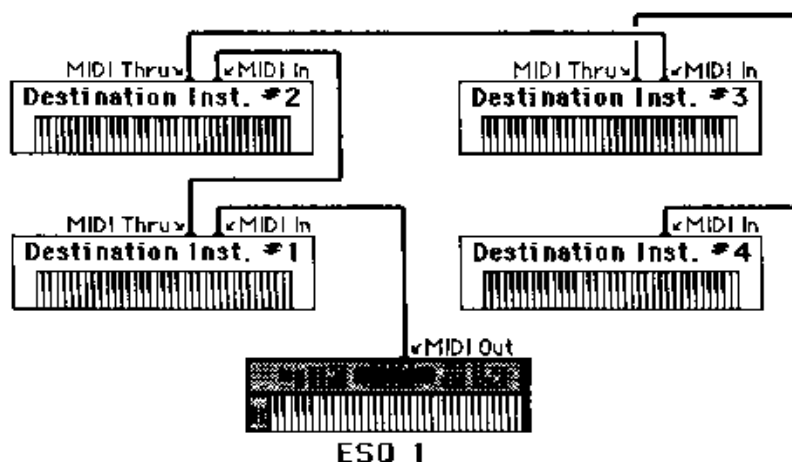
If one (or more) of the receiving devices has a single MIDI Jack which is switchable between **MIDI Out** and **MIDI Thru**, be sure to set that instrument for **MIDI Thru**. Or simply make it the last one in the chain.

With this arrangement, once you set up the proper MIDI Channels, etc. (see below), each device will receive and play only the data that is intended for it, and will "pass along" all other Data. Also, each can be played from its own keyboard (as well as from the **ESQ 1**'s) without affecting the others, because **MIDI Thru** jacks only pass along incoming MIDI data, and do not transmit what is played on the instrument. Of course, the above connections will work the same for a MIDI device which doesn't have a keyboard, such as a rack mount unit, a drum machine, etc.

This set up is ideal for controlling everything right from the **ESQ 1**. Simply by selecting the Track which is set to the same MIDI Channel as to a particular instrument, you can:

1) Play that instrument from the **ESQ 1** Keyboard;
2) Record a Track that will play back on that instrument when you Play the Sequence; and
3) Send the Destination device Program Changes and adjust its Volume (for those devices that receive MIDI Volume --not all do.)

In other words, once you have made the appropriate connections, and set up the MIDI Configuration of the Tracks and all Destination devices, you can use the **ESQ 1**'s Keyboard and its front panel to control and Record all the instruments in your rig.

Using a MIDI Thru Box

Coming out the **MIDI Thru** jack of some instruments, particularly those with a switchable **MIDI Out/Thru** jack, can cause a certain amount of delay in the MIDI signal, causing those devices further down the chain to lag behind. In most cases, the delay is negligible (a few milliseconds.) But it can vary from instrument to instrument, depending on the circuitry used, and could conceivably pose a problem. One solution is to figure out which device has the worst delay, and put that device last in the chain. The other alternative is to connect the **ESQ 1**'s MIDI Out to a **MIDI Thru Box**, or MIDI Splitter, which will feed all the receiving devices simultaneously. In this case you would make your MIDI connections as shown below:
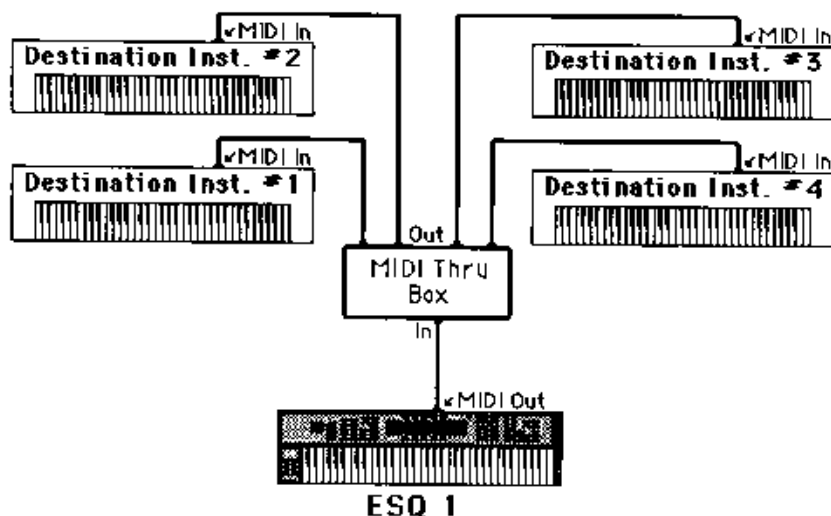
MIDI MODE AND CHANNEL -- Destination Instruments

The next step is to set up each Destination Instrument to receive only the MIDI information that is intended for it. When each of the receiving units is set to receive on a different MIDI Channel, you can control them all right from the **ESQ 1**.

For each Destination Instrument:

----> **Select a MIDI Channel.** The best idea is to assign each Destination Instrument its own MIDI Channel and always set it to that Channnel. If you know, for instance, that a certain synth is alway set to receive on MIDI Channel 4, you can quickly set up a Track to drive that synth by simply selecting an Unused Track, then assigining that Track **MIDI** Status and **MIDI Channel 4** on the **Mix/MIDI** Page.

When each Destination Instrument is always set to its own distinct MIDI Channel, it also means that different Sequences recorded at different times will always play the right instrument on the right Track.

----> **Set to OMNI OFF.** Each Destination synth must be in a mode where it receives only on its selected MIDI Channel. On some instruments this is referred to as **POLY** Mode; some call it **OMNI OFF**; some are always in this mode. Consult the owner's manual if there is any question about a particular instrument.

* * * * **Note:** Once you have assigned MIDI Channels to each instrument in your rig, **Write them down**, and keep the paper handy for quick reference. Or better yet, photocopy the **Track Sheet** at the back of this Manual and fill it out it for each Sequence (or group of related Sequences) you record.

TRACK CONFIGURATION

After you have made the MIDI connections, and set up your Destination Instruments as described above, you now configure the Tracks of a Sequence to send to those instruments. Let's suppose that you are sequencing several external instruments, as depicted in the illustration on p. 135.

----> **Create a New Sequence.** Select the **CREATE/ERASE** Page and Create a new Sequence, as explained on p. 124.

----> **Select a Track.** Go to the **Tracks Select** Page. All the Track Locations will read **UNUSED**. Press one of the "Soft" Buttons corresponding to a Track Location to select and define a Track. The name of the current Program will appear there.

----> **Assign the Track MIDI Status.** Select the **Mix/MIDI** Page. Press *MORE* until the **TRACK STATUS** Sub-page appears. The selected Track is underlined. Use the **Data Entry Slider** or the **Up and Down Arrow** Buttons to set the Track to **MIDI** Status. You will notice that when you play the keyboard now, it doesn't sound on the **ESQ 1**.

----> **Assign the Track a MIDI Channel.** Press *MORE* until the **TRACK MIDI CHAN** Sub-page appears. Your Track is still selected (underlined). Use the **Data Entry Slider** or the **Up and Down Arrow** Buttons to set the Track to the MIDI Channel of the Instrument you want to sequence from that Track. Playing the **ESQ 1** keyboard should now play the Receiving Instrument.

----> **Set the Program Number.** Still on the **Mix/MIDI** Page, press ***MORE*** until the **TRACK PROG NUM** Sub-page appears. Now you can use the **Data Entry Slider** or the **Up and Down Arrow** Buttons to change the Program, or Patch, that the Receiving Unit is playing. While playing the **ESQ 1** Keyboard, adjust the Program Number until the External Instrument is playing the sound you want.

From now on, whenever you select that Sequence, or when it plays as a Step in a Song, this Track will send out a Program Change, to this Prog. Number, on its selected MIDI Channel.

* * * * **Note:** You should always select the Program for external instruments from the **ESQ 1**, and not from the external instrument itself. This assures that the Track has the proper Program Number for that instrument in each Sequence.

Recording the First Track

Once everything is set up, you can proceed with Recording the first Track exactly as you would for an Track with **LOCAL** Status.

----> Select **CONTROL** Page, and make sure the **CLICK** is **ON**.
----> While holding down the **Record** Button, press **Play**. **REC** flashes on the Display.
----> Adjust the Tempo.
----> Start playing. The Bar in which you begin playing becomes Bar 1.
----> Press **Stop** or the **Sequencer Foot Switch** to halt recording. The Display will ask "**KEEP FIRST TRACK**'.
----> Answer ***YES*** to keep the first Track (and define the length of the Sequence) or ***NO*** to scrap it, and try again from scratch.

Other Tracks

Tracks that are sent out MIDI are treated the same as Internal Tracks in terms of Recording, Rerecording, Punching In, Editing, etc. For each successive Track you Record, the procedure will follow the same lines:
1) Define the **Mix/MIDI** configuration of the Track,
2) Record the Track, and
3) Either **KEEP** or reject the new Track from the **PLAY/KEEP** Page.

To Record the next Track, select one of the **UNUSED** Tracks. This can be done from the **Mix/MIDI** Page as well as from the **Tracks Select** Page. Remember that when you select an **UNUSED** Track, it "takes on" all the settings of the Track that was previously selected (or of the Straight Synth, if no Track was selected).

----> Select an **UNUSED** Track.
----> Select the **Mix/MIDI** Page.
----> On the **TRACK STATUS** Sub-Page, set the Track to **MIDI** (it should be already).

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----> On the **TRACK MIDI CHAN** Sub-Page, set the Track to send on the MIDI Channel of the the device you will be sequencing with this Track.

----> On the **TRACK PROG NUM** Sub-Page, adjust the Program, or Patch, of the Receiving Unit to the one you want.

Playing the **ESQ 1** Keyboard should now play the appropriate synth (or whatever) with the appropriate sound. You now Record a Track, with that instrument, just as you would an Internal Track, as described in **Recording Other Tracks**, p. 132.

----> Select **CONTROL** Page, and make sure the **CLICK** is **ON**, and **COUNTOFF= CLICK.**

----> While holding down the **Record** Button, press **Play**. After the one-Bar Countoff, Recording begins.

----> Start playing. At the end of the Sequence the **ESQ 1** will leave **Record** and enter **Audition Play.**

----> Press **Stop** or the **Sequencer Foot Switch** to halt recording. The Display will show the **PLAY/KEEP** Page.

----> Audition the New or the Original Track (which in this case is empty) before deciding which to keep.

----> Press **KEEP NEW TRACK** or **KEEP ORIGINAL TRACK**

You can Re-record the Track, Punch In or Punch Out, as described earlier, just as you would for Tracks that play Internally.

* * * * **Note:** Most often you will be recording Sequences which contain some MIDI Tracks and some LOCAL Tracks. When this is the case, be sure that you assign **LOCAL** Status (as opposed to **BOTH**) to the Tracks that you want to play only on the **ESQ 1**. This will avoid **1)** accidentally sending unintended MIDI Data to an external instrument, and **2)** sending out a lot of unnecessary information, which tends to slow things down.

Note also that when a Track is assigned **BOTH** Status, the Internal Program it will play <u>and</u> the Program on the external instrument must have the same Program Number. This may require rearranging some of the Program locations within the **ESQ 1** and/or your other instruments.

EDIT PAGE

Create/
Erase

Edit

Control

Tracks

Select

Mix/MIDI

Locate

Record

Stop/Cont

Play
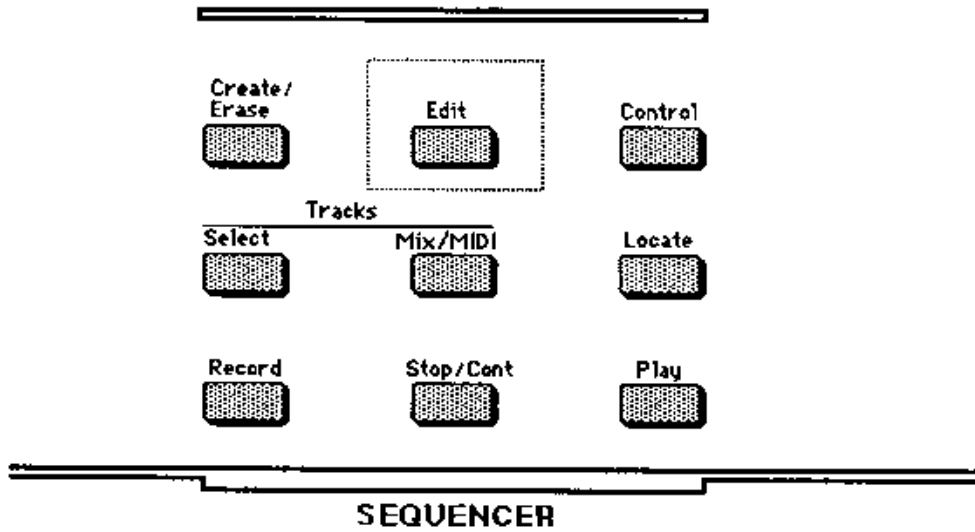
SEQUENCER

SECTION 7 -- Sequencer EDIT Functions

[EDIT] EDIT PAGE

For Editing Tracks, Sequences, Songs and Step Editing

The **EDIT** Page is actually many pages in one. Unlike most of the Programming Pages, which are self-contained, the **EDIT** Page is really just the starting point for all the EDIT functions. Though there are many different tasks that are performed from this Page, the Display always leads you logically to the one you want, with a series of <u>Menus</u> and <u>Dialogue Pages</u>.

You select the **EDIT** Page (by pressing the **EDIT** Button) to edit a **Song**, a **Sequence**, an individual **Track**, or to enter the **Step Edit** Mode.   When you press the **EDIT** Button, the Page appears as shown below:

```
   ▭      ▭      ▭      ▭      ▭

  ╭─────────────────────────────────────╮
  │ EDIT     SELECT TYPE OF EDITING      │
  │                                      │
  │      SONG    SEQ    TRACK   STEP  ✳ EXIT ✳ │
  ╰─────────────────────────────────────╯

   ▭      ▭      ▭      ▭      ▭
```

From the Menu on this Page you choose which you want to EDIT :

1) **SONG** -- The **ESQ 1's SONG** Mode allows you to chain any of the 30 Sequences together to create 10 different **Songs** of up to 99 Steps, with up to 99 Repetitions of each Step.

2) **SEQUENCE** -- There are three EDIT functions available when you choose **SEQ:**

----› **APPEND** -- To Append one Sequence to the end of another (or to itself, to double the length of a basic track, for instance).
----› **CHANGE LENGTH** -- To remove measures from the end of a Sequence, or add empty measures onto the end.
----› **COPY** -- To Copy one entire Sequence to another Location.

3) **TRACK** -- Five EDIT functions are available for editing an individual **TRACK:**

----› **TRANSPOSE** – This function allows you to transpose a Track up or down in pitch by a full octave in either direction.
----› **REMOVE CONTROLLERS** -- Removes any Controller data (such as Pitch Bend, MOD Wheel, Breath Controller, etc), and leaves only Key Events.
----› **QUANTIZE** -- Quantization, or Auto-correct, takes the notes played and moves them to the nearest 1/4, 1/8th, 1/16th, or 1/32nd note, or 1/4, 1/8th, 1/16th or 32nd-note Triplet.

---> **ERASE** -- Erases the track.

---> **MERGE** -- Takes all the Key and controller data from one Track and adds it in to another Track.   This is good for conserving Tracks, and for achieving "Sound-on-Sound" which the **ESQ 1** Sequencer does not otherwise do -- you can record two Tracks separately with the same sound, then MERGE them together.

4) **STEP** -- Step Editing.   This EDIT function allows you to make minute changes in Track Data, by recording, erasing, punching in or punching out while manually stepping through the Sequence one beat, or one clock pulse, at a time.

10) ***EXIT*** -- The **EXIT** Button gets you off the EDIT Page any time you change your mind, select the wrong function, or want to go back and make sure that the proper Track, Sequence or Song is Selected.

* * * * Note: **All EDIT functions affect only the currently selected Track, Sequence or Song.   Before selecting any EDIT function you must make sure that the Track, Sequence or Song you want to Edit is selected.   You cannot change the Track, Sequence or Song to be edited from the EDIT Page.**

EDITING A TRACK

When you select **TRACK** from the menu on the **EDIT** Page, the Display in turn gives you another menu, from which you select which **TRACK EDIT** function you want:

```
    ┌──┐   ▨▨▨   ▨▨▨   ▨▨▨   ┌──┐

 ┌─────────────────────────────────────────┐
 │   EDIT TRACK 1   TRANSPOSE   REM-CTRLS   │
 │                                          │
 │     QUANTIZE   ERASE  MERGE   COPY  ✳ EXIT ✳ │
 └─────────────────────────────────────────┘

    ▨▨▨   ▨▨▨   ▨▨▨   ▨▨▨   ▨▨▨
```
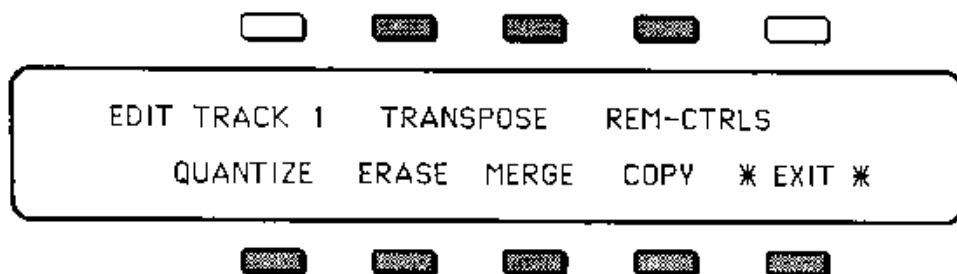
The upper-left segment of the Display tells you which Track you are editing -- remember you can't change Tracks from here. If you have the wrong Track, or you just aren't sure, press ***EXIT*** , then go to the **TRACKS SELECT** Page and make sure that the right Track is selected.

TRACK EDIT FUNCTIONS:

2 or 3)   TRANSPOSE

(Pressing either the #2 or #3 "Soft" Button will select Transpose.)

This function Transposes (raises or lowers the the pitch of) all the notes in a Track, by as much as one octave up or down.

To TRANSPOSE a Track:

----›   Make sure the Track you want to Transpose is selected.
----›   Select **EDIT** Page, and press **TRACK**.
----›   Press **TRANSPOSE** -- the Display shows the following:

```
┌───┐   ┌───┐   ┌───┐   ┌───┐   ▓▓▓▓▓
```

```
╭─────────────────────────────────────────────╮
│                                                 │
│   TRANSPOSE TRACK 1   BY  + Ø Ø   STEPS   ✳ YES ✳ │
│                            ‾‾‾                  │
│                                         ✳  NO ✳ │
│                                                 │
╰─────────────────────────────────────────────╯
```

```
┌───┐   ┌───┐   ┌───┐   ┌───┐   ▓▓▓▓▓
```
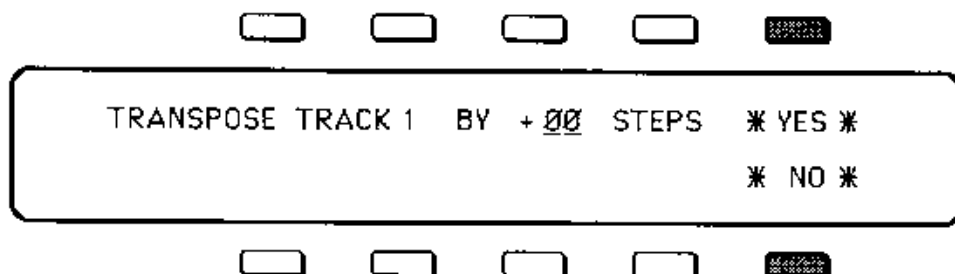
----›   Use the **Data Entry Slider** and the **Up and Down Arrow** Buttons to adjust by how many semitone Steps the selected Track will Transposed., up or down in pitch.

One **Step** is a half-tone (up or down by one key); four Steps, a major third; seven Steps, a fifth, and so on. Range is from **-12** (Down one Octave) To **+12** (Up one Octave).

----›   Press ***YES*** to Transpose the Track. You will then be returned to the **EDIT TRACK** Page. Or Press ***NO*** to cancel the procedure for any reason.

4)   REM CTRLS -- Remove Controllers

This EDIT function will leave all Key Events intact, but remove any Controller Data (Pitch Bend, MOD Wheel, Breath Controller, Pressure -- in short, anything that isn't a Key Event) from the Track.

Because a Digital Sequencer records every event as a separate number stored in Memory, Controllers tend to eat up an enormous amount of Memory, compared to Key Events. A MOD Wheel used extensively, for example, spews out a constant stream of numbers, which are dutifully recorded by the Sequencer. Sometimes you might want to trade off some vibrato for some extra Memory. Sometimes you might just want to remove an obnoxious Pitch Bend or other Controller. In either case, this can be a handy function.

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To REMOVE CONTROLLERS From a Track:

----> Make sure the Track you want to Remove Controllers from is selected.
----> Select **EDIT** Page, and press **TRACK.**
----> Press **REM CTRLS** -- the Display shows the following:

```
REMOVE CONTROLLERS FROM TRACK 1    ✳ YES ✳

                                   ✳ NO ✳
```

----> Press ***YES***   to Remove all Controller Data from the Track. You will then be returned to the **EDIT TRACK** Page. Or Press ***NO*** to cancel the procedure for any reason.

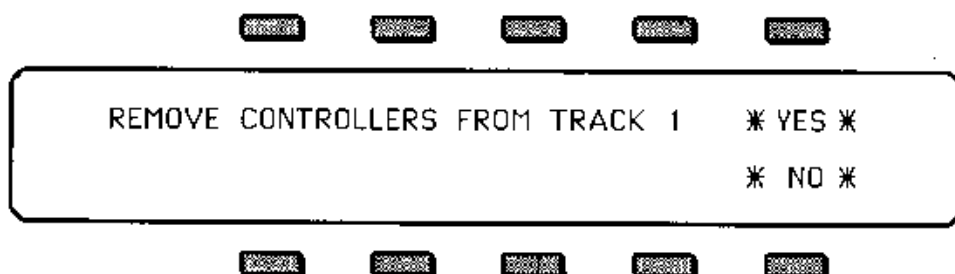## 6) QUANTIZE -- Auto-Correct

The **Quantize** or Auto-Correct function can take a less than perfect Track and put it right on the beat. The **ESQ 1** uses post-quantization -- that is, you first record a Track, then apply the Auto-Correct later as an Editing option. This has two advantages over quantizing a Track on the way in.

First, you are less likely to accidentally Quantize a Track to sixteenth-note triplets, or some other value that's not what you had in mind. Second, by putting up the **PLAY/KEEP** Page after each Quantize procedure, the **ESQ 1** gives you the chance to hear the effect of a given quantization before deciding whether to keep it.

To QUANTIZE a Track:

----> Make sure the Track you want to Quantize is selected.
----> Select **EDIT** Page, and press **TRACK.**
----> Press **QUANTIZE** -- the Display shows the following:

```
QUANTIZE TRACK 1  TO  1 / 4_   NOTES  ✳ YES ✳

                                      ✳ NO ✳
```
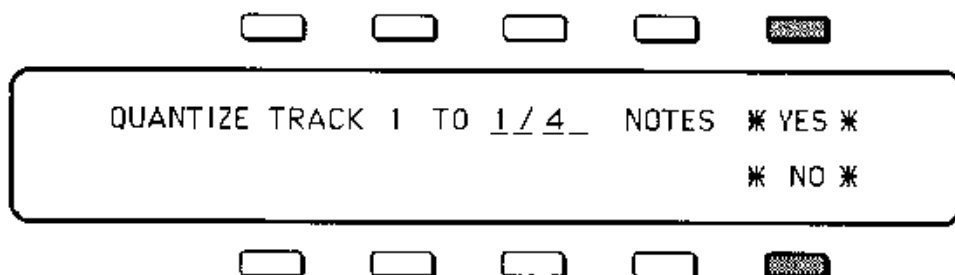
----> Use the **Data Entry Slider** and the **Up and Down Arrow** Buttons to select the Quantization value you want. For whatever value is selected, the beginning of each note played is moved to the nearest note of that value. The length of a note is not changed -- each entire event will be moved so that its beginning (or <u>Key Down</u>) falls on the nearest Quarter note, Eighth note, Sixteenth note, etc.. **Quantization** values that can be selected here are:

1/4 --	**Quarter Notes**
1/4T --	**Quarter Note Triplets**
1/8 --	**Eighth Notes**
1/8T --	**Eighth Note Triplets**
1/16 --	**Sixteenth Notes**
1/16T --	**Sixteenth Note Triplets**
1/32 --	**Thirty-second Notes**
1/32T --	**Thirty-second Note Triplets**

----> After selecting a Quantization value, press *YES* to Quantize the Track to that value. Press *NO* to return to the **EDIT TRACK** Page.

----> Pressing *YES* Quantizes the Track to the desired value, then puts you on the **PLAY/KEEP** Page:

```
   PLAY  ORIGINAL  TRACK        PLAY  NEW  TRACK

   KEEP  ORIGINAL  TRACK        KEEP  NEW  TRACK
```

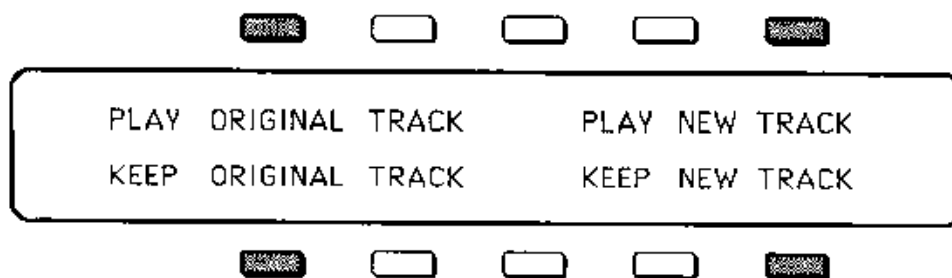You can now audition the Quantized Track, to see if the effect was what you wanted. Play the new (Quantized) Track, or the Original (Unquantized) Track, pressing **Stop/Cont** to halt the Sequencer between plays. The **Auto-Locate** Controls on the **LOCATE** Page can be used before either PLAY command, to start from somewhere other than the beginning of the Sequence.

----> Press **KEEP NEW TRACK** to accept the Quantized Track. This will replace the Original Track in the Sequence, and you will be returned to the **LOCATE** Page. Or,

----> Press **KEEP ORIGINAL TRACK** to return to the **LOCATE** Page, with the Track unchanged (no Quantization). In this case you can repeat the procedure, trying other Quantization values, until you find the one that works for a particular Track.

* * * * **Note:** When you Quantize a Track, each note recorded on the Track will be moved to the <u>nearest</u> beat of the selected value -- it will be moved ahead or back in time, depending on which beat it is closer to. Sometimes, especially when using small Quantization values such as 1/16th or 1/32nd Notes, a given note might get Quantized to the beat just before or just after the one you wanted it on. In this case you might try a different value, and if that doesn't work, record the Track again

6) ERASE

This Erases the selected Track entirely -- puts it back into its original **UNUSED** state. This is a good thing to do after you have Merged a Track into another, or if you accidentally selected (and thus defined) an **UNUSED** Track, or if you just really don't like a Track, and want it to go away.

If you want to Erase only the Track Data but leave the Program and MIDI Configuration of the Track intact, you should simply Record over the Track, as described earlier, but without playing anything.

To ERASE a Track:

----› Make sure the Track you want to Erase is selected.
----› Select **EDIT** Page, and press **TRACK.**
----› Press **ERASE** -- the Display shows the following:

```
    ⬚       ⬚       ⬚       ⬚       ▣

  ╭─────────────────────────────────────────────╮
  │                                             │
  │   ERASE AND UNDEFINE TRACK 1      ✳ YES ✳   │
  │                                  ✳  NO  ✳   │
  │                                             │
  ╰─────────────────────────────────────────────╯

    ⬚       ⬚       ⬚       ⬚       ▣
```
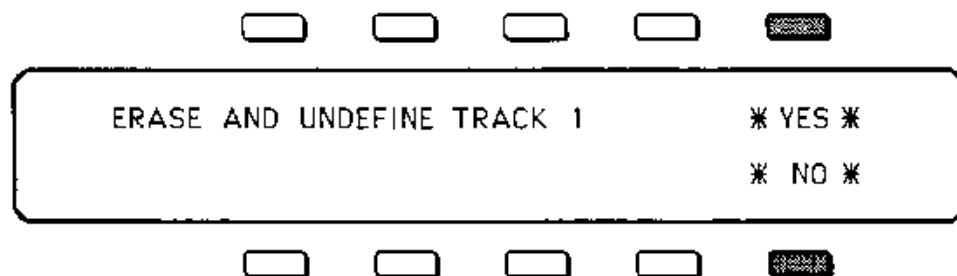
----› Press *YES* to Erase the Track. You will then be returned to the **EDIT TRACK** Page. Or Press *NO* to cancel the procedure for any reason.

* * * * **Note:** After you Erase a Track and then exit the **EDIT** Page, the **ESQ 1** will be in the Straight Synth mode -- no Track selected. The Track you just Erased will read **UNUSED** on the **Tracks Select** Page.

7) MERGE

This EDIT Function takes all the Key and Controller Data from one Track and <u>adds</u>, or Merges it together with another Track. This allows you to record several different Tracks, all with the same Program and MIDI Configuration, and then Merge them into one. The effect is a kind of Sound-on-Sound -- the ability to add to Track Data rather than replacing it.

This also allows you to Quantize the two Tracks to different Quantization values before Merging them together. When sequencing a drum part, for instance, you could record the Kick and Snare on one Track, and Quantize that Track to 1/4 or 1/8th Notes. Then record the Toms on another Track, and Quantize that Track to 1/8th-note Triplets, or whatever. Then merge the two Tracks together.

After Merging Tracks together, you should Erase the <u>Source</u> Track, to avoid confusion, and to conserve your Tracks and your available Memory.

To MERGE a Track Into Another Track:

----> Make sure the Track you want to Merge Into another (the <u>Source</u> Track) is selected.
----> Select **EDIT** Page, and press **TRACK.**
----> Press **MERGE** -- the Display shows the following:
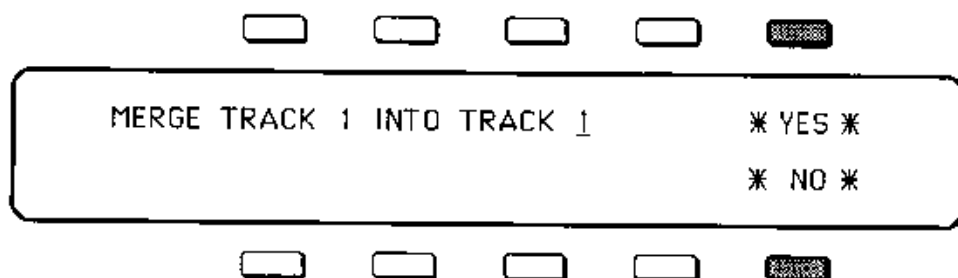
```
   ▭        ▭        ▭        ▭        ▰

╭──────────────────────────────────────────────╮
│                                              │
│   MERGE TRACK 1 INTO TRACK 1      ✳ YES ✳    │
│                                              │
│                                   ✳  NO ✳    │
╰──────────────────────────────────────────────╯

   ▭        ▭        ▭        ▭        ▰
```

----> Use the **Data Entry Slider** and the **Up and Down Arrow** Buttons to choose which Track the selected Track will be Merged with (the <u>Destination</u> Track). When the procedure has been done, all the Key and Controller Data from both Tracks will be on this Track.
Note: The Program, Mix Level, MIDI Channel, Status, and Program Number of the <u>Source</u> Track are <u>not</u> copied in this procedure -- the settings of the <u>Destination</u> Track remain in effect for the new, Merged, Track.
----> Press **✳YES✳** to Merge the <u>Source</u> Track with the <u>Destination</u> Track. You will then be returned to the **EDIT TRACK** Page. Or Press **✳NO✳** to cancel the procedure for any reason.

5) COPY

This is one of the most useful Track EDIT functions. It simply makes a Copy of a Track onto another Track.   You can, for instance, easily double a Track with another Sound, by Copying it to another Track Location, then assigning the new Track a new Program, MIDI Channel, etc.   Or Copy a Track to another Track Location, then Transpose the new Track up an octave (see **Transpose**, below), for doubling an octave up. Along with the recorded Track Data, the Source Track's Internal Program, MIDI Channel, Status, Program Number and Mix Level will be copied to the Destination Track.

You can't Copy a Track onto a Track Location that has been recorded already. The Destination Track must be blank -- free from recorded Track Data.

To COPY a Track to Another Track:

----› Make sure the Track you want to make a Copy of (the Source Track) is selected.
----› Select **EDIT** Page, and press **TRACK.**
----› Press **COPY** -- the Display shows the following:

```
┌──┐    ┌──┐    ┌──┐    ┌──┐    ▓▓▓
┌──────────────────────────────────────────────┐
│                                                │
│    COPY TRACK 1 TO TRACK 1          ✳ YES ✳   │
│                                                │
│                                     ✳ NO ✳    │
│                                                │
└──────────────────────────────────────────────┘
┌──┐    ┌──┐    ┌──┐    ┌──┐    ▓▓▓
```

----› Use the **Data Entry Slider** and the **Up and Down Arrow** Buttons to choose which Track the selected Track will be Copied into (the Destination Track). This must be a Track that hasn't yet been recorded.

----› Press *YES* to Copy the Source Track onto the Destination Track. You will then be returned to the **EDIT TRACK** Page. Or Press *NO* to cancel the procedure for any reason.
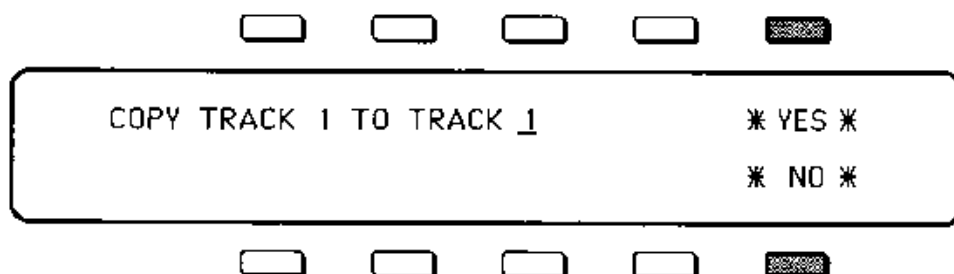
STEP -- TRACK STEP EDITING

The **Step** Editing function of the **ESQ 1** is a way of getting into a Track to make minute changes. It is important to understand that the **STEP EDIT** Mode is an extension of **TRACK** EDIT, and of the Recording process itself. Whatever you do here affects ONLY the selected Track. Pressing **STEP** from the **EDIT** Page puts you on the **STEP EDIT** Page, which looks like this:

```
 Selected      Step                    Bar       Beat      Clock
  Track        Size                   Number    Number    Number
   ___         ___            ___       ___       ___
  |   |       |   |          |   |     |   |     |   |

 +------------------------------------------------------------+
 |                                                            |
 |   EDIT TRACK 1     STEP= 1/8   TIME= 001 .01 .00           |
 |                                                            |
 |   PUNCH= IN      OUT      STEP    CLOCK    *EXIT*          |
 |                                                            |
 +------------------------------------------------------------+
     [====]   [====]    [====]    [====]    [====]

    Punch     Punch    Advance   Advance    Exit to
     In        Out     One Step  One Clock  EDIT Page
```
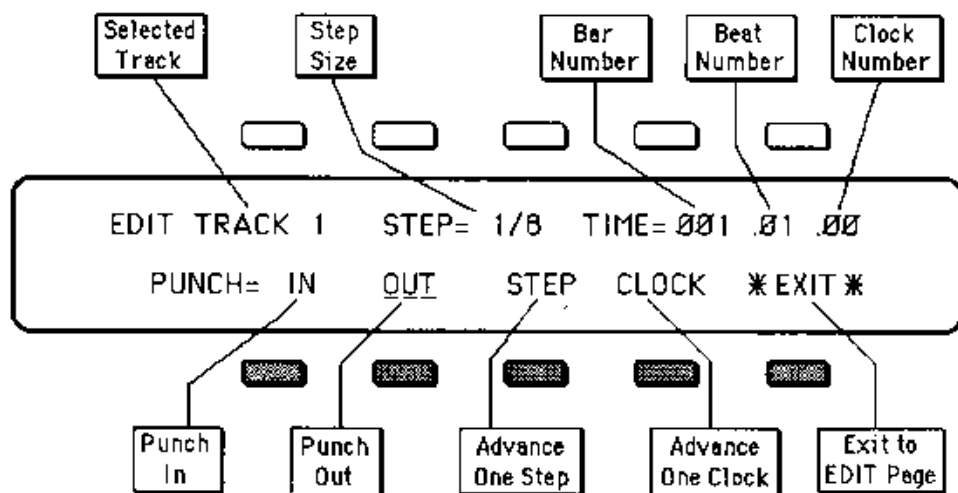
(Inactive Buttons appear in White)

Step Editing is really just a method of Recording or Playing back a Sequence in which <u>you are the Clock</u>. In normal Sequencer operation, The **ESQ 1**'s internal Clock controls the playback rate of a Sequence. The **STEP EDIT** Page is specially set up so that you can **Punch In** (enter **Record**) or **Punch Out** (leave **Record** and enter **Play**) while "Stepping through" the Sequence one **Step**, or one **Clock** pulse at a time.

On the **STEP EDIT** Page, shown above, the top row of the Display contains the **Step Size**, which you can adjust using the **Data Entry Slider** and the **Up and Down Arrow** Buttons, and a three-part **Time** Readout which tells you exactly where you are in the Sequence.

On the Bottom row of the Display are the Buttons for **Punching In** and **Punching Out** of **Record**, and two Buttons which allow you to advance the Sequence by one **Step**, or by one **Clock** pulse at a Time.

This Function allows you to **Punch In** at any point within the Sequence, and play the keyboard (to Record new Track Data) or not play (to simply erase Track Data) while advancing the Clock manually, by pressing **STEP** or **CLOCK**.

READOUTS AND ACTIVE CONTROLS:

STEP= -- STEP SIZE

This is the amount by which the Sequence will be advanced when the **STEP** Button is pressed (see #8 below). On this Page, **Step Size** is continuously controlled by the **Data Entry Faders** and the **Up and Down Arrow** Buttons, and <u>does not have to be selected</u>.

The available **Step** values are the same as the **Quantize** values on the **Quantize** EDIT function. The chart below shows the possible **Step Sizes**, along with how many **Clock** pulses each corresponds to.

1/4 --	Quarter Note ---------------------------	24 Clocks
1/4T --	Quarter Note Triplet -----------------	16 Clocks
1/8 --	Eighth Note ----------------------------	12 Clocks
1/8T --	Eighth Note Triplet ------------------	8 Clocks
1/16 --	Sixteenth Note -----------------------	6 Clocks
1/16T --	Sixteenth Note Triplet ------------	4 Clocks
1/32 --	Thirty-second Note ------------------	3 Clocks
1/32T --	Thirty-second Note Triplet ---------	2 Clocks

When, for example, **Step Size=1/8**, each time you press the "Soft" Button below **STEP**, the Sequence will be advanced by one eighth note, or twelve "ticks" of the **ESQ** 1's Clock. When **Step Size=1/4**, each time you press **STEP**, the Sequence will be advanced by one quarter note, or twenty-four "ticks" of Clock. And so on.

TIME=

The readout in the Upper left corner tells you exactly where you are in the Sequence. The three numbers displayed after **TIME=** represent the **Bar**, the **Beat**, and the **Clock** number of your exact location within the Sequence.

----> **Bar Number** tells you which bar of the Sequence you are in.
----> **Beat Number** tells you which Beat of that Bar you are in. The value of a Beat is defined by the Time Signature of the Sequence. In 4/4 or 3/4 Time, for example, one Beat is a Quarter note. In 6/8 Time, one beat would be an Eighth note.
----> **Clock Number** tells you which Clock pulse, within that Beat, you are on. One **Clock** is a very small amount of time defined as 1/24 of a Quarter note. In normal Sequencer operation, when you change the Tempo of a Sequence, what you are really doing is varying the Clock Frequency. In the **Step Edit** Mode, the Clock is stopped, and this readout tells you exactly which Clock pulse within the Beat it is stopped at.

So if the Display reads: **TIME= 003   .02   .12**, that means that you are in **Bar Number 3** of the Sequence, **Beat Number 2** of that Bar, and **Clock Number 12** of that Beat.

If the Display reads: **TIME= 007   .01   .09**, that means that you are in **Bar Number 7** of the Sequence, **Beat Number 1** of that Bar, and **Clock Number 9** of that Beat.

The Illustration below shows the relationship of Bars, Beat and Clocks, for a Four Bar Sequence in 4/4 Time.
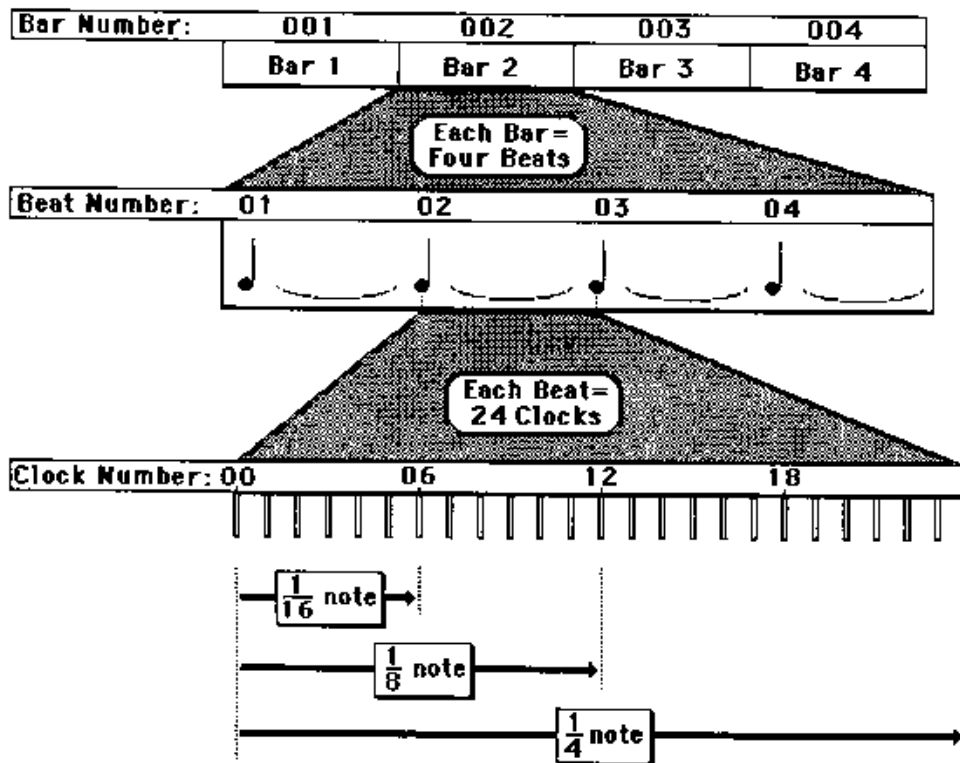
6. IN -- Punch In

Pressing this Button puts the **ESQ 1** into **Record**, causing the word **IN** to be underlined. Remember that all recording will be done on the selected Track. The right Track must be selected before you enter the **EDIT** Page.

Punching In will have no effect until you press either the **STEP** or **CLOCK** (see below) Button to advance the Sequencer. Anything you play (or don't play) will then be recorded as long as you continue to advance the Sequencer, pressing **STEP** or **CLOCK**, or until you press **OUT** to Punch Out. Either **IN** or **OUT** is always underlined.

7. OUT -- Punch Out

When **OUT** is underlined the **ESQ 1** is in **Play** Mode. In this state you can step through the Sequence by pressing the **STEP** or **CLOCK** Button to find the exact place where you want to Punch In.

8. **STEP -- Advance One Step**

Pressing **STEP** moves the Sequence ahead by one Step, as defined by the **Step Size**, above. If **STEP=1/16**, pressing **STEP** once will advance you exactly one Sixteenth Note, or 6 Clocks, beyond where you were. If **STEP=1/8**, pressing **STEP** once will advance you exactly one Eighth Note, or 12 Clocks, beyond where you were. And So on.

9. **CLOCK -- Advance One Clock**

Pressing **CLOCK** moves the Sequence ahead by one Clock PULSE. There are 24 Clocks per Quarter note, so this is a very slow way to step through a Sequence. Often it is a good idea to press the **STEP** Button to get into the area where you want to edit, then slowly press **CLOCK** to find the exact note.

10. **EXIT**

If you haven't Recorded anything, pressing **EXIT** simply returns you to the **EDIT** Page. If you have **Punched In**, while you were on this Page, pressing **EXIT** gets the **PLAY/KEEP** Page, where you can hear the fruits of you **Step Editing** labors before deciding whether to keep them, or to leave the Track as it was.

Using the Step Edit Mode

The basic procedure for **Step Editing** is as follows:

----› Make sure the Track you want to Edit is selected.

----› Select **EDIT** Page, and press **STEP**

----› The Page appears, as shown at the beginning of this Section, with the **TIME=** Readout showing the location where you were before entering the **EDIT** Page. The Page always comes up in the **Punch Out** state, so you don't have to worry about accidentally recording anything. A note might sound, and keep playing, when you press **STEP**. That means there is a <u>Key Down</u> on that beat. The note will remain until you advance the Sequencer (by pressing **STEP** or **CLOCK**) to the point where the <u>Key Up</u> for that note was recorded.

----› Advance the Sequencer by one Step or one Clock Pulse at a time (by pressing **STEP** or **CLOCK**) to get to the place where you want to Punch In. When you are close, start pressing **CLOCK**, one press at a time, until you reach the exact point where you want to record.

----› Press **IN** to **Punch In**.

----› Play the note on the Keyboard that you want to start on that beat. Now press **STEP** or **CLOCK** to advance to the point where you want to release the note. When you release the key, a <u>Key Up</u> will be recorded at exactly the time showing on the Display.

----› Press **OUT** to **Punch Out**. This puts you back in **Play**, where you can Step through to listen to more of the Sequence, or press **EXIT**. You cannot Punch back In once you have punched out. You can only do one edit per trip to this page.

----› Pressing **EXIT** puts you on the **PLAY/KEEP** Page. Audition the edited Track by pressing **PLAY NEW TRACK**. If the effect was not what you had in mind, press **KEEP ORIGINAL TRACK**. If it worked, press **KEEP NEW TRACK**.

It might take you a while to get good at **Step Editing**. But because each attempt is followed by the **PLAY KEEP** Page, you can afford to experiment without the risk of trashing a good Track. Here are a few more hints:

----> Any note that sounds the instant you press **CLOCK** was recorded exactly on that Clock Pulse (the one indentified on the Display). This is not necessarilly true when you press **STEP**. If **STEP**=1/4 notes, for example, when you press **STEP**, all the notes that were recorded between the new location and the location 24 Clocks back will sound. So the only way to really zero in on a single Event is to step through by single Clocks.

----> To Erase just one note:
   1) First get to a location a little before the note, pressing **STEP** or **CLOCK**, depending on how far into the Sequence it is.
   2) Then press **CLOCK** slowly, one press at a time, until the offending note sounds (Don't step past the note yet -- let it sustain.)
   3) Press **IN** to **Punch In**.
   4) Press **CLOCK** once. This records over the <u>Key Down</u> of the note.
   5) Now press **OUT** to **Punch Out**. The Note is gone. (Since you Erased the <u>Key Down</u> and then Punched out, the <u>Key Up</u> was erased automatically.)

----> If you want to perform a **STEP** Edit somewhere in the middle of a Sequence, use the **Auto-Locate** Controls to Locate to the Bar you want before going to the **EDIT** Page. The **STEP EDIT** Page will then appear showing the Location you selected. This is especially useful with long Sequences, since it is considerably faster than Stepping through sixteen Bars to get to the point where you want to begin editing.

EDITING A SEQUENCE

When you select **SEQUENCE** from the Menu on the **EDIT** Page, the Display shows another menu, from which you select which **SEQUENCE EDIT** function you want:

```
  ▭      ▭      ▭      ▭      ▭

┌─────────────────────────────────────────────────┐
│  EDIT  SEQUENCE  Ø1    ØØ4 BARS   4/4            │
│                                                  │
│     APPEND    CHANGE LENGTH    COPY   ✳ EXIT ✳   │
└─────────────────────────────────────────────────┘

  ▬      ▬      ▬      ▬      ▬
```

The upper portion of the Display tells you which Sequence is selected, how many Bars long that Sequence is, and its Time Signature. As with all **EDIT** Pages, the **EXIT** Button is there in the lower-right corner, so you can bail out at any time. Pressing **EXIT** will return you to the **EDIT** Page.

The EDIT functions here will affect the entire Sequence -- all eight Tracks (or however many Tracks have been Recorded.)

As with the **TRACK EDIT** Pages, you can't change the selected Sequence from here. You must make sure that the right Sequence is selected before entering the **EDIT** Page.

SEQUENCE EDIT FUNCTIONS:

6) APPEND

Use this function to take a Sequence and "tack it on" to the end of the selected Sequence. This allows you to record a Sequence in parts, as several different Sequences, and then use the **APPEND** function to put them together into one long Sequence.

Also, you can Append a Sequence to itself, doubling its length. Say you need a sixteen Bar repeating pattern. To save yourself aggravation, you can record a four Bar Sequence, then Append it to itself twice.

The Sequence to be Appended must have the same Time Signature as the selected Sequence. Also, the Programs and all Mix/MIDI configurations of the selected Sequence will still apply to the new Sequence, so it is best to use this function to Append Sequences that are set up the same as the selected Sequence.

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To APPEND a Sequence to the Selected Sequence:

----› Select **EDIT** Page, and press **SEQ**.
----› Press **APPEND** -- the Display shows the following:

```
  ⬜    ⬜    ⬜    ⬜    ▨
┌─────────────────────────────────────────┐
│                                          │
│   APPEND SEQ-Ø1 TO SEQ-Ø1      ⋇ YES ⋇   │
│                                          │
│                                ⋇  NO ⋇   │
│                                          │
└─────────────────────────────────────────┘
  ⬜    ⬜    ⬜    ⬜    ▨
```
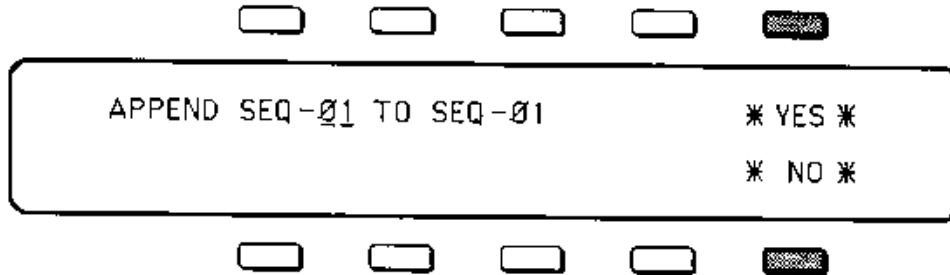
----› Use the **Data Entry Slider** and the **Up and Down Arrow** Buttons to choose which Sequence will be Appended to the end of the selected Sequence.
----› Press *YES* to Append the Source Sequence to the selected Sequence. You will then be returned to the **EDIT SEQUENCE** Page. Or Press *NO* to cancel the procedure for any reason.

7 or 8) CHANGE LENGTH

⋇ Though the length of the First Track determines the Length of the Sequence, you can, at any time, use the **CHANGE LENGTH** EDIT function to remove Bars from the end of the Sequence, or to add empty Bars at the end.

This is especially helpful when, for example, you record a first Track which is perfect in every way except that it runs to 5 Bars instead of four. With this EDIT function you can easily chop off the extra Bar.

To CHANGE THE LENGTH of the Selected Sequence:

----› Make sure the Sequence whose Length you want to Change is selected.
----› Select **EDIT** Page, and press **SEQ.**
----› Press **CHANGE LENGTH** -- the Display shows the following:

```
  ⬜    ⬜  . ⬜    ⬜    ▨
┌─────────────────────────────────────────────────┐
│                                                  │
│  CHANGE LENGTH FROM ØØ4 BARS TO ØØ4 BARS ⋇ YES ⋇ │
│                                                  │
│                                          ⋇ NO ⋇  │
│                                                  │
└─────────────────────────────────────────────────┘
  ⬜    ⬜    ⬜    ⬜    ▨
```

-----> Use the **Data Entry Slider** and the **Up and Down Arrow** Buttons to determine the new Length of the selected Sequence. You can adjust this from 001 to 999 Bars (though there are practical limitations) If the new Length you select is <u>shorter</u> than the original, the Bars will be removed from the end of the Sequence. If the new Length you select is <u>longer</u> than the original, empty Bars (no Track Data) will be added at the end of the Sequence

-----> Press *YES* to Change the Length of the selected Sequence. You will then be returned to the **EDIT SEQUENCE** Page, which will now reflect the new Length of the Sequence. Or Press *NO* to cancel the procedure for any reason.

9) COPY

This EDIT function copies the selected Sequence, with all of its Track, Program and MIDI information and Tempo, to another Sequence Location, leaving the Source Sequence intact.

The **COPY** function can save you time and trouble in many ways. If you have a good basic track, you can Copy the Sequence to another Location, and record different data on the remaining Tracks, for easy Song construction. Or, if you are planning to do some radical re-recording or Editing of a Sequence, Copy it to another Location, and edit the copy. That way your original Sequence is still there if your experiments aren't completely sucessful.

You can't Copy a Sequence into a Location that already has one. The <u>Destination</u> Sequence Location must be blank.

To COPY a Sequence to Another Location:

-----> Make sure the <u>Sequence you want to make a Copy of</u> (the <u>Source</u> Sequence) is selected.

-----> Select **EDIT** Page, and press **SEQ.**

-----> Press **COPY** -- the Display shows the following:

```
 ┌──┐   ┌──┐   ┌──┐   ┌──┐   ▓▓▓▓
┌─────────────────────────────────────┐
│                                      │
│   COPY SEQ-Ø1 TO SEQ-Ø1    ✳ YES ✳  │
│                                      │
│                            ✳ NO ✳   │
│                                      │
└─────────────────────────────────────┘
 ┌──┐   ┌──┐   ┌──┐   ┌──┐   ▓▓▓▓
```

-----> Use the **Data Entry Slider** and the **Up and Down Arrow** Buttons to choose which Sequence Location the selected Sequence will be Copied into. This must be a Location where a Sequence that hasn't yet been created. The **ESQ 1** will not let you Copy over an existing Sequence.

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----> Press *YES* to Copy the <u>Source</u> Sequence into the <u>Destination</u> Sequence Location. You will then be returned to the **EDIT SEQUENCE** Page. Or Press *NO* to cancel the procedure for any reason.

Making a Sequence Template
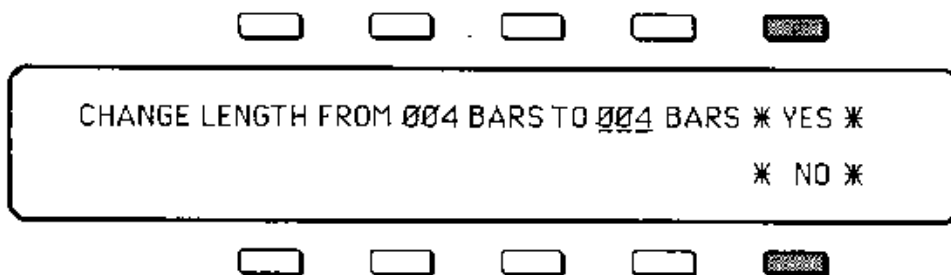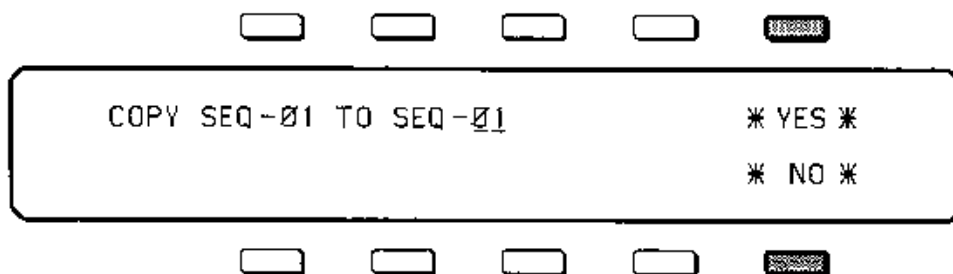
One highly recommended application of the Copy function is the use of a Sequence **Template**. If you plan to record a number of Sequences with the same basic Track configuration, you can set up a "Template" Sequence with no recorded Track Data.

Create a new Sequence, and set up its various Tracks the way you want them to be for the group of Sequences you are about to record. For each Track, assign a Status, Program, MIDI Channel, etc. Set the Tempo of the Sequence to the Tempo you'll want. But don't Record anything on any of the Tracks.

Now Copy the Template to an empty Sequence Location, and start Recording on the copied Sequence. For each new Sequence, Copy the Template to another Location and Record there. This way you avoid having to set up the Tracks of each Sequence individually.

* * * * **Note:** As you will see in the next section, a Song is a series of Sequences which the **ESQ 1** has been programmed to play in a particular order. If, when a Sequence is selected, you press **SONG** on the **EDIT** Page, this may have the effect of changing which Sequence is the current Sequence -- from the Sequence that was selected, to the one that is the next Step in the Song. If you do this the Display will ask **"SELECT SEQUENCE IN NEXT SONG STEP?"** If you pressed **SONG** by accident, and wish to avoid confusion over what is really the current Sequence, answer *NO*. You will be returned to the **EDIT** Page, with nothing changed. If you meant to edit a Song, answer *YES*. But bear in mind that when you return to Sequence Mode, a different Sequence might be selected than when you left.

SONG MODE

The **ESQ 1**'s **Song** Mode allows you to chain Sequences together in any order to create up to ten Songs.

Each Song can be given a name of up to six characters. You name a Song when you Create it (see **CREATE** Page, p. 125), much as you name a Program when Writing it to Memory.

Songs are constructed in **Steps**. Each Step of a Song consists of:

1) A Sequence that will be played during that Step;
2) The number of times the Sequence will be Repeated during the Step; and
3) The Transpose value, which allows you to Transpose the entire Sequence up or down by as much as an octave for the duration of the Step.

Either a Song or a Sequence is selected at any time -- never both. When a Song is selected, the **ESQ 1** is in **Song Mode**. Pressing **Play** will cause the selected Song to play. You cannot Record in Song Mode -- a Song is really just a series of instructions to the Sequencer, telling it to play certain Sequences in a certain order.

Each time a new Sequence starts playing as a Step in a Song, each Track of the new Sequence sends out a Program Number and MIDI Volume instructions on its selected Midi Channel (unless the Track is assigned LOCAL Status). This allows you to change the Patch that a remote instrument is playing for each Song Step, if you wish.

Any Sequence can be connected to any other in a Song -- they don't have to have the same Tempo or Time Signature. The **ESQ 1** will simply play the Sequences in the order you program them in.

When a Song is selected, you can make changes to a Sequence within the Song, but, unless the Song is stopped, those changes will be forgotten as soon as the next Step begins to play. For example, while playing a Song, you might change the Tempo of the Sequence that's currently playing, or change the Program that's playing on a Track. Those changes will only remain as long as that Step is playing. The next time the same Step comes around, the Sequence will be as it was originally.

If you make these changes while the Sequencer is stopped, or you Stop the Sequencer before the Song Step is over, the **ESQ 1** will ask you whether you want to save those changes when you next press **Play** or select a new Sequence or Song (see **SAVE CHANGES TO OLD SEQUENCE**, p. 100.)

* * * * **All changes made to a Sequence must be made with the Sequence selected, or when the Sequence is the Current Step in a Song and the Song is stopped.** If you find yourself trying to make changes to a Sequence, and the **ESQ 1** keeps changing them back, or otherwise reacting strangely, make sure you are not in Song Mode.

SONG EDIT PAGE

For Chaining Sequences together to make Songs.

```
  ┌──────┐    ┌────────┐ ┌─────────┐  ┌─────────┐  ┌──────────┐
  │ Song │    │  Step  │ │Transpose│  │Sequence │  │Number of │
  │ name │    │ Number │ │  Value  │  │ Number  │  │ Repeats  │
  └──────┘    └────────┘ └─────────┘  └─────────┘  └──────────┘

       ┌───────┐   ┌───────┐  ▓▓▓▓▓    ▓▓▓▓▓      ▓▓▓▓▓
       └───────┘   └───────┘

  ╭──────────────────────────────────────────────────────────╮
  │                                                            │
  │   EDIT  SONG-Ø  STEP=Ø1  TR=+ØØ  SEQ=Ø1  REP=Ø1           │
  │                                                            │
  │   SONG   INSERT   DELETE   PREV    NEXT   ✳EXIT✳           │
  │                                                            │
  ╰──────────────────────────────────────────────────────────╯

           ▓▓▓▓▓    ▓▓▓▓▓     ▓▓▓▓▓    ▓▓▓▓▓      ▓▓▓▓▓

       ┌───────┐ ┌───────┐ ┌─────────┐ ┌───────┐ ┌──────────┐
       │Insert │ │Delete │ │  Go to  │ │Go To  │ │ Exit to  │
       │ Step  │ │ Step  │ │Previous │ │ Next  │ │EDIT Page │
       └───────┘ └───────┘ │  Step   │ │ Step  │ └──────────┘
                           └─────────┘ └───────┘
```
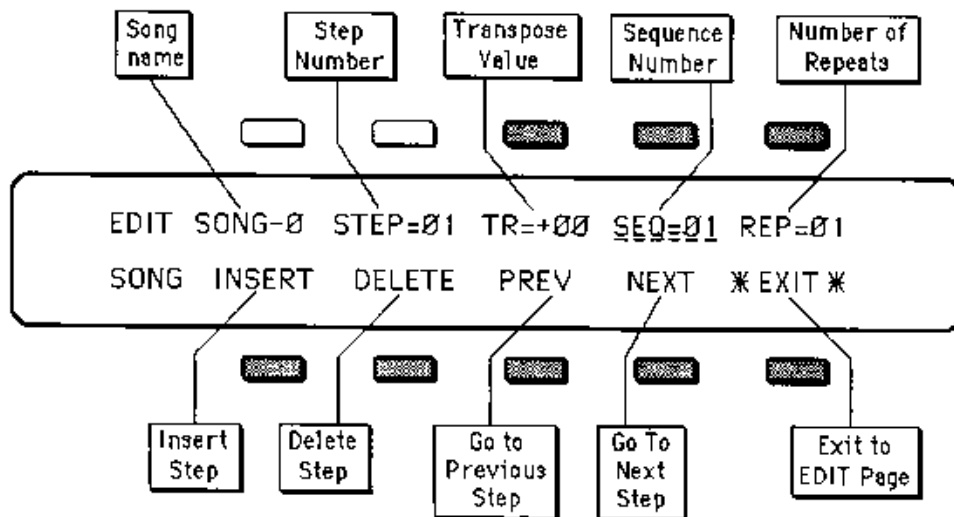
(Inactive Buttons appear in White)

The **SONG EDIT** Page appears when you 1) Create a new Song, or 2) select **SONG** from the menu on the **EDIT** Page.

READOUTS AND ACTIVE CONTROLS:

1. SONG NAME

The **Name** of the selected Song appears in this Location.

2. STEP

This tells you which **Step** of the Song you are on. Up to **99** Steps can be programmed into a Song. The Step Number which appears here is always the one you are currently Editing. You move from one step to another by pressing the **PREV** and **NEXT** Buttons (see below).

3. TR -- TRANSPOSE

This control will Transpose (raise or lower the pitch of) the selected Sequence for the duration of the Step. If **TR**= anything other than Zero for a given Step, when the Song reaches that Step every Track in the Sequence will be Transposed up or down by the selected amount. Each increment represents a semitone (halfstep). The range is from one Octave up (**+12**) to one Octave down (**-12**).

By using the same Sequence for several Steps, and transposing some of the Steps, you can save time and Sequence Memory. Remember, though that if you have Drums, or similar sounds, on a Track, they will be Transposed too.

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4. SEQ

Here you select which Sequence you want to be played during the current Step. For each Step of the Song, press **SEQ** (it gets <u>underlined</u>) and use the **Data Entry Slider** and the **Up and Down Arrow** Buttons to select the Number of the Sequence you want for that Step. (While editing a Song, whenever you press **NEXT** or **PREV**, to change Steps, **SEQ** is automatically selected for the new Step.)

5. REP -- REPEATS

Here you select the number of times that the Sequence is to **Repeat** during the selected Step. If, for example, on a given Step, **SEQ=05**, and **REP=04**, that Step would repeat Sequence # **5** four times when the Song is played.

For each Step of the Song, after you select a Sequence, press **REP** (it gets <u>underlined</u>) and use the **Up and Down Arrow** Buttons to select the number of the Repeats for that Step. Up to **99** repetitions can be programmed for each Step.

6. INSERT

Pressing **INSERT** simply inserts a new Step into a Song. The Inserted Step always reads **SEQ=01**, **REP=01**. After inserting a Step you then adjust the **SEQ** and **REP**s as described above. The new Step is inserted <u>in front of</u> the one you were previously on, and all later Steps are moved back by one.

For example; if you are on **Step 3** of a Song, and you press **INSERT**, a <u>new</u> **Step 3** (defined as **SEQ=01**, **REP=01**) will show on the Display. The old **Step 3** is now **Step 4**. The old **Step 4** is now **Step 5**. And so on.

7. DELETE

Pressing **DELETE** <u>removes</u> the currently selected Step from the Song.

For example; if you are on **Step 5** of a Song, and you press **DELETE**, the old **Step 5** will disappear and all later Steps will move up by one. The old **Step 6** is now **Step 5**. The old **Step 7** is now **Step 6**. And so on.

8. PREV

Pressing **PREV** "backs up" one Step within a Song.

9. NEXT

Pressing **NEXT** advances the Song forward to the next Step. You can't advance more than one Step beyond the last defined Step. If Steps **1** through **4** have been defined (by selecting a Sequence for those Steps), when you press **NEXT** to advance to Step **5**, it will read <u>SEQ=XX</u>, **REP=XX**. You cannot go to Step 6 until you have defined Step **5**. Moving the **Data Entry Slider** or the **Up and Down Arrow** Buttons replaces the **XX**'s with numbers, and Step **5** is now defined.

MAKING A SONG

Lets suppose that you have recorded a number of Sequences, and that you now want to Create a Song that consists of the following:

      Step 1 -- Sequence 04 for **2 times through,**
      Step 2 -- Sequence 05 for **1 time through,**
      Step 3 -- Sequence 06 for **1 time through,**
      Step 4 -- Sequence 08 for **2 times through,**
      Step 5 -- Sequence 08, Transposed up a Fifth, for **2 times through,**
      Step 6 -- Sequence 10 for **4 times through,**

The Procedure is as follows:

1) Create a New Song

----› Select **CREATE/ERASE** Page, and press **NEW SONG**.
----› **Name** the new Song, as described on p.126.
----› Press ***YES***. You will automatically be placed on the **SONG EDIT** Page. (The **SONG EDIT** Page is also reached from the **EDIT** Page by pressing **SONG**.) The Page comes up as follows: **STEP=01**, **TR=+00**, <u>**SEQ=01**</u>, **REP=01**.

2) Edit Step 1

----› **SEQ** is already selected (<u>underlined</u>). Move the **Data Entry Slider** or the **Up and Down Arrow** Buttons until the Display reads **SEQ=04**.
----› Press **REP**. Adjust to **REP=02**.

3) Edit the Remaining Steps

Step 2:
----› Press **NEXT**. The Display reads: **STEP=02, TR=+00,** <u>**SEQ=XX**</u>, **REP=XX**. **SEQ** is already selected.
----› Move the **Data Entry Slider** or the **Up and Down Arrow** Buttons until **SEQ=05**.
----› Press **REP**. Adjust to **REP=01**.
Step 3:
----› Press **NEXT**. The Display reads: **STEP=03, TR=+00,** <u>**SEQ=XX**</u>, **REP=XX**.
----› Move the **Data Entry Slider** or the **Up and Down Arrow** Buttons until **SEQ=06**.
----› Press **REP**. Adjust to **REP=01**.
Step 4:
----› Press **NEXT**. The Display reads: **STEP=04, TR=+00,** <u>**SEQ=XX**</u>, **REP=XX**.
----› Move the **Data Entry Slider** or the **Up and Down Arrow** Buttons until **SEQ=08**.
----› Press **REP**. Adjust to **REP=02**.

Step 5:

----› Press **NEXT**. The Display reads: **STEP=05, TR=+00, SEQ=XX, REP=XX**.

----› Move the **Data Entry Slider** or the **Up and Down Arrow** Buttons until **SEQ=08**.

----› Press **REP**. Adjust to **REP=02**.

----› Press **TR=**. Adjust to **TR=+07**. This will Transpose **Sequence 06** up a Fifth (seven semitones) during this Step.

Step 6:

----› Press **NEXT**. The Display reads: **STEP=06, TR=+00, SEQ=XX, REP=XX**.

----› Move the **Data Entry Slider** or the **Up and Down Arrow** Buttons until **SEQ=10**.

----› Press **REP**. Adjust to **REP=04**.

4) Check your Song

----› Press **PREV** to back up, one Step at a time, until you reach **Step 1**. Now use the **NEXT** and **PREV** Buttons to move around the various Steps and check to see that they are right. If one of the values is wrong, or if you just decide you want something different, simply select it, and change it.

5) Press *EXIT* to exit to the EDIT Page.

* * * *Note: Remember that a Song is just a series of pointers telling the ESQ 1 which Sequences to play, and in which order. A Song contains no Track Data. It doesn't have to be saved -- it just stays like it is until you change it, or Erase it. You can't do any harm to a Sequence or any of its Tracks by anything you do in Song Edit Mode. When playing back a Song, any changes you make to a Sequence will only be saved if you instruct the ESQ 1 to save them, as described earlier.

[LOCATE]   SONG LOCATE PAGE

Provides information about location within a Song; Allows access to any Step within a Song; Shows Tempo and Time Signature.
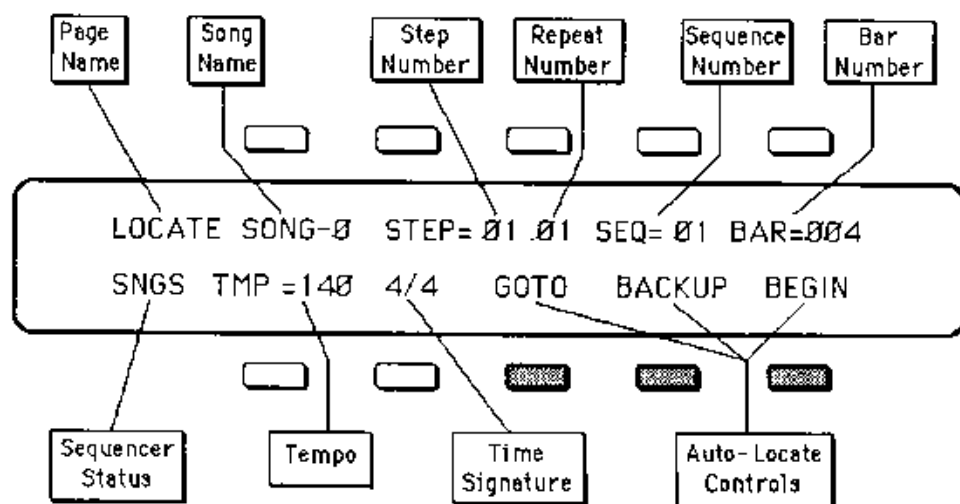
(Inactive Buttons appear in White)

When a **Song** is selected, the **LOCATE** Page looks a little different than in Sequence Mode. In Song Mode the Page is reconfigured to show you where you are within a Song. The **Auto-Locate** Controls now locate to Song Steps rather than Bars.

The **Status** of the Sequencer, whether it is in **Song Play (SNGP)** or **Song Stop (SNGS)** is always shown in the lower left-hand corner of the Display on this Page.

The **TEMPO** Control is still active, but any changes you make to a Sequence during a Step of a Song will be immediately forgotten as soon as the next Step comes around, unless you Stop the Song during the Sequence you changed.

READOUTS AND ACTIVE CONTROLS:

1.   SONG NAME
The name of the current song is displayed here.

2.   STEP=
This Segment of the Display shows the **Step** that the Song is on, and which **Repeat** of that Step it is on. For example, if **STEP= 02 .03**, it is on the third repeat of Step **2**.

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4. SEQ=

Tells you which Sequence is currently playing; or, if the Sequencer is in **Song Stop** Mode, which Sequence will play from if you press **Stop/Cont**.

5. BAR=

Tells you which Bar of the Sequence is playing; or, if the Sequencer is in **Song Stop** Mode, which Bar it will play from if you press **Stop/Cont**.

6. TMP=

The **Tempo** of the Sequence that is currently playing is displayed here.

7. TIME SIGNATURE

The **Time Signature** of the currently playing Sequence is displayed here. Sequences with different Time Signatures <u>can</u> be put together into Songs.

AUTO-LOCATE CONTROLS:

8. GOTO

GOTO allows you to start Playing the Song from any Step within the Song. To reach a particular Step:

----> Press **GOTO**. The Display shows:

```
LOCATE SONG-Ø  STEP= Ø1 .Ø1  SEQ= Ø1  BAR=ØØ4

                GOTO   STEP= Ø1
```
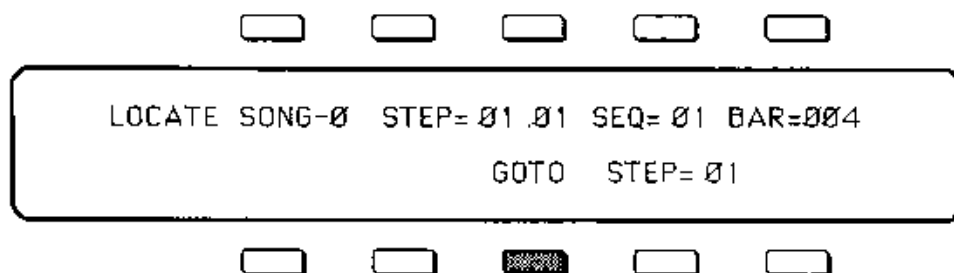
----> Use **Data Entry Slider** and the **Up and Down Arrow** Buttons to adjust the **GOTO** Step number to the Step at which you want to start. You can choose any Step within the current Song.

----> Press **GOTO** again. You are returned to the **SONG LOCATE** Page, with the new Step number showing on the Display.

9. BACKUP

Each press of this button backs the Song Location up One Step .

10. BEGIN

Pressing this button resets the Song to the beginning of Step 1.

SECTION 8 -- Sequencer Applications

USING THE ESQ 1 WITH A DRUM MACHINE

When you use the **ESQ 1** in conjunction with a Drum machine or other rhythm Sequencer, there are basically three ways you can go:

1) Sync the Drum Machine's clock to the **ESQ 1**;
2) Sync the **ESQ 1**'s clock to the Drum Machine; or
3) Sequence the Drum Machine from the **ESQ 1**, just as you would a Synthesizer.

To Sync a Drum Machine to the ESQ 1

----> **Connect the MIDI Out of the ESQ 1 to the MIDI In of the Drum Machine.** If you have other instruments connected to the **ESQ 1** via MIDI, you can simply include the Drum Machine in the MIDI Thru chain depicted on p. 135. (If the Drum Machine has no MIDI Thru jack, put it last in the Chain.)
----> **Set the Drum Machine to MIDI Sync.**
----> **Set the Drum Machine to receive on an unused MIDI Channel, OMNI Off; or disable Channel information.** You don't want the Drum Machine playing **ESQ 1** Sequence Data intended for other instruments. MIDI Clocks, Start, Stop and Continue are **Real Time** commands, and are sent and received regardless of MIDI Channel or Mode.
----> The Drum Machine should now Sync to the **ESQ 1**'s clock. Pressing **Play** or **Stop/Cont** will Start, Stop and Continue the Drum Machine, assuming it receives those commands (most do.)

To Sync the ESQ 1 to a Drum Machine

----> **Connect the MIDI Out of the Drum Machine to the MIDI In of the ESQ 1.**
----> **Set the ESQ 1 to MIDI Sync.** On the **CONTROL** Page, select **SYNC= MIDI CLOCK**.
----> **Set the Drum Machine to send on a MIDI Channel that is not being used by the ESQ 1 (Straight Synth or any Track.)** Again, MIDI Clocks, Start, Stop and Continue are **Real Time** commands, and are sent and received regardless of MIDI Channel or Mode.
----> The **ESQ 1** should now Sync to the Drum Machine's clock. Starting, Stopping or Continuing the Drum Machine will Start, Stop and Continue the **ESQ 1**.

To Sequence a Drum Machine from a Track of the ESQ 1

----> **Connect the MIDI Out of the ESQ 1 to the MIDI In of the Drum Machine.**
----> **Set the Drum Machine to Tape Sync or External Clock,** or any setting other than Internal or MIDI Clock. This way it will not play it's own patterns, but will act only as a sound-producing device, sequenced from a Track of the **ESQ 1**.

----> Set the Drum Machine to **OMNI Off, and select a MIDI Channel.**

----> **From the Mix/MIDI Page, assign a Track on the ESQ 1 MIDI Status, and set it to the same MIDI Channel you assigned the Drum Machine.**

----> You should now be able to play the Drum Machine from the **ESQ 1**'s Keyboard. You can then record a Track on the **ESQ 1**, from the **ESQ 1**'s Keyboard, which will play on the Drum Machine -- just as if you were sequencing an external synthesizer. The advantage of this approach is that some Drum Machines respond to Velocity when played from MIDI, but not when played from their own front panels. Thus you may get more dynamic range out of your Drum Machine if you use this approach. The disadvantage is that you use up **ESQ 1** Sequencer Memory to sequence the Drum Machine.

SONG POSITION POINTERS

The **ESQ 1** sends and receives **Song Position Pointers** via MIDI. Song Position Pointers are MIDI commands that tell a Sequencer or Drum Machine where to Locate within a Song or Sequence.

The **ESQ 1** receives Song Position Pointers over MIDI only when **SYNC= MIDI CLOCK** on the **CONTROL** Page. When it receives a Song Position Pointer, it will Locate to the appropriate place in the selected Song or Sequence.

The **ESQ 1** sends a Song Position Pointer over MIDI whenever you use the **Auto-Locate** Controls. Any receiving unit which recognizes Song Position Pointers will Locate to the same spot. (Not all devices recognize Song Position Pointers. Consult the Manual of any other sequencing device you are using, to see if it does.)

MIDI SONG SELECTS

MIDI Song Selects allow a sequencer such as the **ESQ 1** to instruct a remote sequencer or drum machine to select a new song whenever you select a Sequence or Song on the **ESQ 1**. The **ESQ 1** will always send Song Selects. Whether or not it receives them depends on the setting of the **MIDI ENABLES** on the **MIDI** Page (p.24)

The **ESQ-1** transmits and receives **MIDI Song Selects** in Sequence Mode as well as Song Mode. (depending again on the setting on the ENABLE control). This allows you to select **ESQ-1** Sequences as well as Songs from a remote sequencer, computer or drum machine, and vice versa. They are set up as follows:

MIDI Song selects # 00-09 will select **ESQ-1 Songs # 1-10.**
MIDI Song selects # 20-49 will select **ESQ-1 Sequences # 1-30.**

Conversly, selecting **Songs # 1-10** will cause the **ESQ 1** to send **MIDI Song selects # 00-09.** Selecting **Sequences # 1-30** will cause the **ESQ 1** to send out **MIDI Song selects # 20-49.**

TAPE SYNC

Whenever the **ESQ 1** is running off its internal clock (**SYNC=INTERNAL**), and the Sequencer is running, it sends a Clock Signal to the **Tape Out** jack on the Rear Panel. By recording this signal on one Track of a multi-track tape recorder, you can then sync the **ESQ 1** to the recorded Clock Signal on the tape. This enables you to combine sequenced and recorded Data, to increase the capabilities of a small (or large) multitrack set-up.

Recording a Sync Track

----> **Connect the Tape Out Jack of the ESQ 1 to the input of one Track of your Tape Recorder.** Generally, it's best to use an outside Track -- Track 1 or 4 on a 4-Track deck, Track 1 or 8 on a 8-Track deck, etc. Also, if possible, you should not have any noise reduction on the Channel of the deck where you record a sync Track.

----> **Adjust the Record Level.** Press **Play** on the **ESQ 1** (make sure **SYNC= INTERNAL**) to start the Song or Sequence playing. Adjust the level to around **-10** to **-6** dB. You may have to experiment to find the level that works best for you.

----> **Start the Tape Deck recording.**

----> **Press Play on the ESQ 1 to play the Song or Sequence.** Let the Song or Sequence run its full length. Remember, what you are recording is a Clock Signal that will cause the **ESQ 1** to play at a certain Tempo when you later sync it to the recorded track.

----> **At the end the Song or Sequence, stop the Tape deck, and press Stop to stop the Sequencer.**

Syncing the ESQ 1 to a Recorded Sync Track

----> **Connect the Tape In Jack of the ESQ 1 to the output of the Track of your Tape Recorder which contains the Sync Track.**

----> **Rewind the Tape Deck to the beginning of the recorded Sync Track.**

----> **Set the ESQ 1 to Tape Sync (SYNC= TAPE SYNC on the CONTROL Page.)**

----> **Press Play on the ESQ 1.** It will now wait for the recorded Clock Signal before starting to play the Song or Sequence.

----> **Start the Tape deck.** When the Sync Track begins, the **ESQ 1** will begin to play.

* * * * **Note:** The Sync Track you record to tape sends only Clock, or Tempo, information to the **ESQ 1** -- it doesn't communicate where you are in a Song or Sequence. If you rewind the tape to a different place and start it playing again, the **ESQ 1** will start from wherever it last stopped -- things will definitely get out of sync. To keep everything playing together, you must start the Tape from the beginning each time. Always press **Play** on the **ESQ 1** first, to start it from the beginning of the Song or Sequence.

THE ESQ 1 AS A SYSTEM CONTROLLER

One of the by-products of the **ESQ 1** Sequencer is the fact that it makes a versatile MIDI controller, allowing you, among other things, to change Programs on every instrument in your rig with the push of a button. Each Sequence you create and store in the **ESQ 1**'s Sequencer Memory contains up to eight sets of Program and Volume information, each of which will be sent out on the designated MIDI Channel when you select that Sequence.

If you have the **ESQ 1** connected to other instruments via MIDI, try this:

----> Create a new Sequence.
----> Select the **Tracks Select** Page, and select an UNUSED Track.
----> Go to the **Mix/MIDI** Page, and set up the Track to send to one of your external instruments, as described in **MIDI SEQUENCING**, on p. 137.
----> Select another UNUSED Track, and do the same, setting this Track up to drive another instrument. And so on, until you have one Track playing each external instrument. Create a couple of **LOCAL** Tracks with different Programs too. Selecting them will let you play the **ESQ 1** only. Selecting any of the **MIDI** Tracks will let you play only the receiving instrument.

You see that from the **Tracks Select** Page, you can change what plays from the **ESQ 1** keyboard simply by selecting different Tracks. Remember too that a Track with **BOTH** Status will play on the **ESQ 1** and an external instrument.

Now Create another Sequence. (The **ESQ 1** will ask you "SAVE CHANGES TO OLD SEQUENCE?" Answer Yes.) For the Tracks of the new Sequence, go through the same procedure as before, but assigning different Program Numbers to the external instruments. (Remember always to change Programs from the **ESQ 1**'s **Mix/MIDI** Page.)

Again, you can play a different external instrument, or the **ESQ 1**, or the **ESQ 1** and an external Instrument, depending on which Track is selected. If you press a selected Track's button again, so there's no Track selected, you hear the "Straight Synth" Program and transmit on the Base MIDI Channel, giving you a ninth possibility.

Now go to the right **Sequence Select** Page and reselect the first Sequence. (Again, the **ESQ 1** will ask you "SAVE CHANGES TO OLD SEQUENCE?" Answer Yes.) Notice when you select the New Sequence that all the external instruments connected to the **ESQ 1** change to the proper Program for that Sequence -- each Track sent out a Program Change on its MIDI Channel when the Sequence was selected. Now select the second Sequence again. Each external instrument again changes back to the proper Program.

Notice that you haven't recorded anything on either of these Sequences. They exist merely as Templates, which serve two useful purposes when using the **ESQ 1** as a System Controller:

1) Every time you select a new Sequence, each Track can send a Program Change to an external instrument. You can change the sound that every synth in your rig is playing with one press of a button.

2) When you select any Track of a Sequence, the **ESQ 1** Keyboard plays whatever Program is on that Track, or sends on the Track's MIDI Channel, or both. Select a different Track and you have a different configuration. From the **Tracks Select** Page you select up to nine different internal Programs and/or MIDI channels to send on (counting the Straight Synth.)

Of course you <u>can</u> record data on any of these Sequences if you want. Whether you do or not, they will work as Templates. You can play external instruments from the **ESQ 1** or from their own Keyboards. You can have a Track send a Program Change to a MIDI Digital Delay or Reverb unit; or have it send Load instructions to a **Mirage** while you play the Straight Synth Program on the **ESQ 1**, just by selecting a new Sequence. No doubt you will come up with some applications of your own, based on your equipment and your needs.

SECTION 9 -- Storage of Sequencer Data

[STORAGE] STORAGE PAGE

For Saving and Loading Programs and Sequencer Data to Cartridge, to Audio Tape, or Over MIDI.

The **STORAGE** Page is used to send and load Program and Sequence Data to various media for saving and storage. Transferring Program Data is covered in the **Synthesizer** half of this Manual. Here we are concerned with transferring Sequencer Data.

The **STORAGE** Page handles two basic types of Sequencer Data transfer:

1) **TAPE** -- The entire Sequencer Memory (all Sequences and Songs), or a single Sequence, can be saved to Audio Tape; the entire Sequencer Memory or a single Sequence can be Loaded from Tape.

2) **MIDI** -- The entire Sequencer Memory or a single Sequence can be sent via MIDI to another **ESQ 1**. The entire Sequencer Memory can be sent to, or Loaded from a **Mirage** Digital Sampling Keyboard or **Mirage** Digital Multisamper.

When you press **STORAGE**, the Page appears like this:

```
   ▭      ▨      ▨      ▨      ▭

┌─────────────────────────────────────────────┐
│                                             │
│   STORAGE   TAPE-  SAVE   LOAD   VERIFY      │
│                                             │
│             MIDI-  SEND   LOAD      CARTRIDGE │
│                                             │
└─────────────────────────────────────────────┘

   ▭      ▨      ▨      ▭      ▨
```
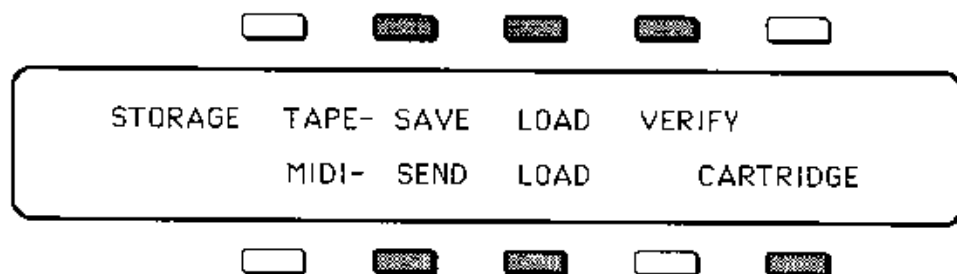
From here you choose which type of Data Transfer you want.

TAPE STORAGE

The entire Sequencer Memory, or just one Sequence, can be saved to audio Tape, and later loaded back into the **ESQ 1's** Sequencer Memory from Tape.

As mentioned earlier, because of its high Data transfer rate, the **ESQ 1** will work best with a good Tape deck, as opposed to an extremely cheap portable model. See p. 80 of the Synthesizer Section for more details.

Tape Connections

To Save Sequencer Data to Tape, connect the **Tape Out** Jack on the Rear Panel of the **ESQ 1** to the **Input** of your tape recorder. To Load, or Verify Data that has been · Saved, connect the **Output** of the tape recorder to the **Tape In** jack of the **ESQ 1**.

SAVING All Sequencer Memory to Audio Tape

This procedure will Save the entire Sequencer Memory (all Sequences and Songs including all Track Data, etc.) to Tape. It is a good idea to keep track of what Programs were where in Memory, what Cartridge was inserted, and what external devices were used when the Sequences we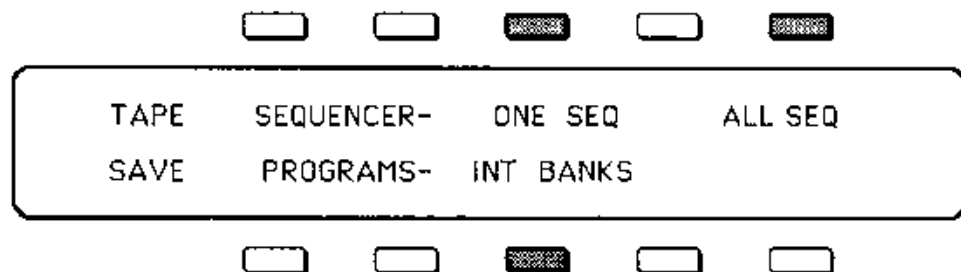re recorded. The Track Sheet at the back of this Manual will help to keep all this straight. Feel free to photocopy this sheet, and fill one out for each Sequence, or group of similar Sequences, you save.

One good idea is to move all the Programs used in your Sequence(s) into the Internal Banks and save the Internal Program Data on the Tape right after the Sequence Data. That way you can load them both in together (one at a time, of course) when you want them.

* * * * **Note:** Before saving Data to Tape, it is a good idea to go through the procedure once <u>without Starting the Tape Deck</u>, just to get your Record levels properly adjusted.

----> Connect the **ESQ 1's Tape Out** Jack to the **Input** of one channel of your tape recorder (or to both channels, as described earlier).
----> Put your Tape Deck in **Record/Pause**.
----> Select the **STORAGE** Page.
----> Press **TAPE SAVE**. The Display shows the following:

```
      ┌────┐   ┌────┐   ▆▆▆▆    ┌────┐   ▆▆▆▆
 ┌──────────────────────────────────────────────────┐
 │                                                    │
 │    TAPE     SEQUENCER-    ONE  SEQ     ALL SEQ     │
 │                                                    │
 │    SAVE     PROGRAMS-   INT  BANKS                 │
 │                                                    │
 └──────────────────────────────────────────────────┘
      ┌────┐   ┌────┐   ▆▆▆▆    ┌────┐   ┌────┐
```

----> Start the Tape Deck Recording.
----> Press **ALL SEQ**. This starts the DataTransfer. The Display will read ***SAVING DATA TO TAPE***.

The **ESQ 1** will put out an eight second "Leader" tone, followed by the Sequence Data, which can take up to two minutes, depending on how much Data is in Memory. During the Leader tone, adjust the Recorder's Input level so that the VU meter(s) read between -3 and 0 dB.
----> When the Data has been transferred, the Display reads ***TAPE PROCEDURE COMPLETE***, and the **STORAGE** Page returns.
----> Stop the Tape Deck, and Verify the Transfer, as described below.

As mentioned earlier, recording a spoken "Slate" on the tape, immediately before each block of Data you save, will help you locate it later.

SAVING One Sequence to Audio Tape

This procedure will Save the <u>selected</u> Sequence to Tape. If you want to combine Sequences that were recorded at different times, and stored in different places, into the same Sequencer Memory, this is a handy function.

----> Make sure the Sequence you want to save is selected.
----> Connect the **ESQ 1's Tape Out** Jack to the **Input** of your tape recorder.
----> Put your Tape Deck in **Record/Pause**.
----> Select the **STORAGE** Page.
----> Press **TAPE SAVE**. The Display shows the following:

```
   ⊂⃞⃟⊃    ⊂⃞⃟⊃    ▨▨▨    ⊂⃞⃟⊃    ▨▨▨

   ┌─────────────────────────────────────────┐
   │   TAPE    SEQUENCER-   ONE SEQ    ALL SEQ │
   │                                          │
   │   SAVE    PROGRAMS-   INT BANKS          │
   └─────────────────────────────────────────┘

   ⊂⃞⃟⊃    ⊂⃞⃟⊃    ▨▨▨    ⊂⃞⃟⊃    ⊂⃞⃟⊃
```

----> Start the Tape Deck Recording.
----> Press **ONE SEQ**. This starts the Data transfer. The Display will read ***SAVING DATA TO TAPE***. The **ESQ 1** will put out an eight second "Leader" tone, followed by the Sequence Data. During the Leader tone, adjust the Recorder's Input level so that the VU meter(s) read between **-3** and **0** dB.
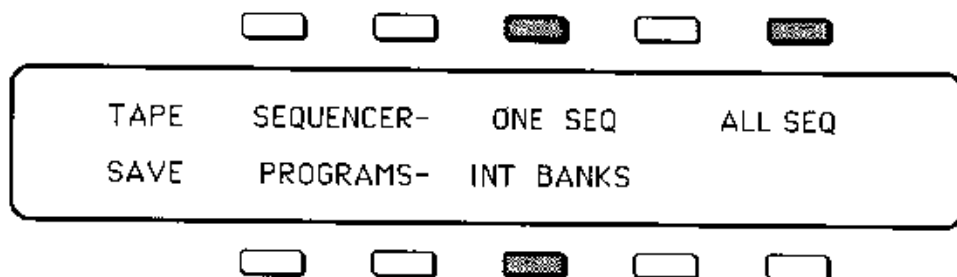----> When the Data has been transferred, the Display reads ***TAPE PROCEDURE COMPLETE***, and the **STORAGE** Page returns.
----> Stop the Tape Deck, and Verify the Transfer, as described below.

VERIFYING Sequencer Data Saved to Audio Tape

After you have saved Data to Tape, you should **Verify** the Data on the tape, to make sure that the transfer was successful. This will save you from finding out later, when you try to Load the data back into the **ESQ 1**, that a dropout or other problem has garbled your data (very annoying).

To VERIFY Sequencer Data Saved to Audio Tape

----> Connect the **Output** of the channel of your tape recorder that contains the Program Data to the **ESQ 1's Tape In** Jack.
----> Select the **STORAGE** Page.
----> Rewind the Tape Deck to the beginning of the Data to be Verified.

----› Press **TAPE VERIFY.** The Display shows the following:
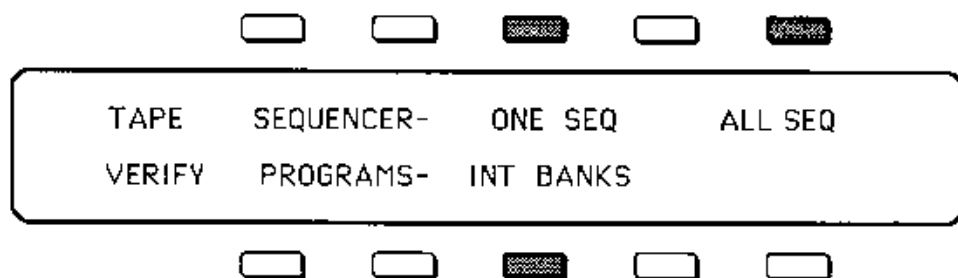
```
┌────┐  ┌────┐  ▣▣▣▣  ┌────┐  ▣▣▣▣
```
┌───┐
│   │
│   TAPE   SEQUENCER-   ONE SEQ   ALL SEQ   │
│   │
│   VERIFY   PROGRAMS-   INT BANKS   │
│   │
└───┘
```
┌────┐  ┌────┐  ▣▣▣▣  ┌────┐  ┌────┐
```

----› Start the Tape Deck Playing. Listen to the Output, or watch the VU meters, and wait for the Leader Tone which precedes the Data to begin.

----› <u>After</u> the Leader Tone begins, press **ALL SEQ** or **ONE SEQ**, depending on which you just saved. This starts the **ESQ 1** checking the Data on the Tape. The Display will read ***READING DATA FROM TAPE***.

----› If the Data on the Tape is correct, the Display will say ***TAPE PROCEDURE COMPLETE***, and then return you to the **STORAGE** Page.

----› If the Verify is unsuccessful, you will get one of the following messages:

    1) ***TAPE NOT STARTED ON LEADER TONE*** -- The Leader Tone must be actually playing <u>when</u> you press **ALL DATA** or **ONE SEQ** to begin Verifying. A too-high or too-low playback level can also cause this message. Try the Procedure again, making sure that the leader has started, and perhaps adjusting the playback level of the deck.

    2) ***VERIFY FAILED -- INVALID TAPE DATA*** -- This can result from a number of things -- the Data was recorded at too high, or too low, a level; a serious dropout or other Tape problem has garbled the Data; or a bad connection has resulted in a loss of Data. In any case, when you get this message, Save the Data again, to another section of the Tape, or use another Tape.

    3) ***INCORRECT TYPE OF DATA ON TAPE*** -- This message would result if you pressed **ONE SEQ** or **ALL DATA,** and then played Program Data, or some other non-Sequencer Data, into the **ESQ 1.**

----› If after a Verify, the Display reads ***DATA ERROR FROM TAPE WAS FIXED***, it means the **ESQ 1** found <u>one bit</u> of wrong information on the Tape, but was able to correct it. This might indicate an aging Tape, or a slight dropout, and it is a good idea to save the information to another Tape, or to another location on the same tape.

* * * * **Note:** Whenever you get an error message while transferring Data by Tape or via MIDI, the message will remain on the Display until you press one of the front panel buttons. Press any button (except a Soft Button) to continue.

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LOADING All Sequencer Memory from Audio Tape

----> Connect the **Output** of the channel of your tape recorder that contains the Sequence Data to the **ESQ 1's Tape In** Jack.

----> Select the **STORAGE** Page.

----> The Tape Deck should be in Stop or Pause, at the beginning of the Data to be Loaded.

----> Press **TAPE LOAD**. The Display shows the following:

```
  ▭        ▭        �▬        ▭        ▬▬
┌─────────────────────────────────────────────────────────┐
│                                                          │
│    TAPE      SEQUENCER-    ONE SEQ      ALL SEQ           │
│                                                          │
│    LOAD      PROGRAMS-   INT BANKS                        │
│                                                          │
└─────────────────────────────────────────────────────────┘
  ▭        ▭        ▬▬▬        ▭        ▭
```

----> Start the Tape Deck Playing. Listen to the Output, or watch the VU meters, and wait for the Leader Tone which precedes the Data to begin.

----> After the Leader Tone begins, press **ALL SEQ**. This starts the **ESQ 1** Loading the Data on the Tape. The Display will read ***READING DATA FROM TAPE***.

----> If the Load is successful, the Display will say ***TAPE PROCEDURE COMPLETE***, and then return you to the **STORAGE** Page. The Sequencer Memory from the Tape is now in the **ESQ 1**, replacing whatever Songs and Sequences were in the Memory.

----> If the Load is unsuccessful, one of these messages will appear:
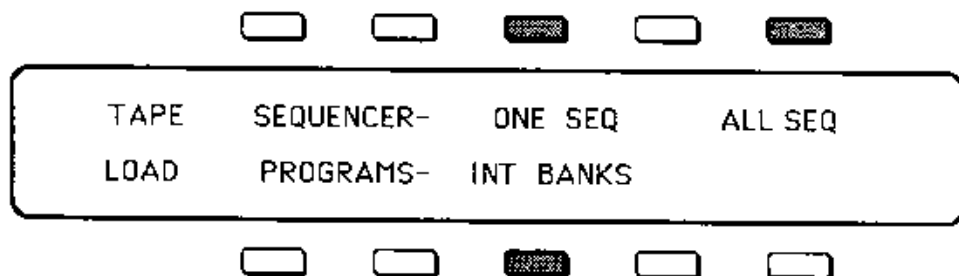
1) ***TAPE NOT STARTED ON LEADER TONE*** -- The Leader Tone must be actually playing when you press **ALL DATA** to begin Loading. Try the Procedure again.

2) ***INCORRECT TYPE OF DATA ON TAPE*** -- The Data was not Sequence Data.

3) ***INSUFFICIENT MEMORY TO LOAD SEQUENCE*** -- This message will appear if you try to Load more Data than the **ESQ 1** has Sequencer Memory for. For example, if you Saved the Data from an **ESQ 1** which had a **Sequencer Expander Cartridge** in it, and then tried to Load it into an **ESQ 1** that didn't a Sequencer Expander Cartridge, the Data might exceed the available Memory of the second unit.

4) ***FATAL ERRORS DETECTED -- SEQUENCER MEMORY IS CLEARED*** If the **ESQ 1** encounters more than one serious Data error after it has already begun replacing the Sequencer Memory with the Data off the Tape, you will get this message. It means that the Load failed but it was too late to save the Internal Sequencer Memory.

----›The Display might read *DATA ERROR FROM TAPE WAS FIXED*. Again, this means that the **ESQ 1** found <u>one bit</u> of wrong information on the Tape, but was able to correct it. Save the information to another Tape location.

LOADING One Sequence from Audio Tape

----› Connect the **Output** of the channel of your tape recorder that contains the Sequence Data to the **ESQ 1**'s **Tape In** Jack.
----› Select the **STORAGE** Page.
----› The Tape Deck should be in Stop or Pause, at the beginning of the Data to be Loaded.
----› Press **TAPE LOAD**. The Display shows the following:

```
┌───┐   ┌───┐   ┌━━━┐   ┌───┐   ┌━━━┐

┌─────────────────────────────────────────────┐
│                                              │
│   TAPE     SEQUENCER-   ONE SEQ    ALL SEQ    │
│                                              │
│   LOAD     PROGRAMS-    INT BANKS             │
│                                              │
└─────────────────────────────────────────────┘

└───┘   └───┘   └━━━┘   └───┘   └───┘
```

----› Start the Tape Deck Playing. Listen to the Output, or watch the VU meters, and wait for the Leader Tone which precedes the Data to begin.
----› <u>After</u> the Leader Tone begins, press **ONE SEQ**. This starts the **ESQ 1** Loading the Data on the Tape. The Display will read *READING DATA FROM TAPE*.
----› If the Load is successful, the Display will say *TAPE   PROCEDURE COMPLETE*, and then return you to the **STORAGE** Page.

----› When you Load One Sequence from Tape, that Sequence is placed in the **highest-numbered** empty Sequence Memory Location. So if **SEQ #30** is not defined, the new Sequence will be put there when you Load it into the **ESQ 1**. If location #30 already contains a Sequence, the new Sequence will be put in Location #29. If locations #29 and 30 contain Sequences, the new Sequence will be put in Location #28. And so on. If there are no empty Sequence Locations when you try to Load One Sequence, the Display will read *NO SEQUENCE LOCATIONS AVAILABLE*. Erase a Sequence and try again.

----› If the Load is unsuccessful, any of the Error messages listed on the previous page under **Loading All Sequencer Memory from Audio Tape** may appear, except for #4. The **ESQ 1** will <u>not</u> erase the entire Sequencer Memory while trying unsuccessfully to Load one Sequence. If the **ESQ 1** cannot Load the Sequence because of bad Data on the tape, the Display will read *SEQUENCE LOAD FAILED -- TAPE ERROR*. This does not damage the Sequences and Songs that were already in the **ESQ 1**'s Memory -- they should still be intact.

MIDI TRANSFER OF SEQUENCER DATA

The **ESQ 1** can send All Sequencer Data, or a single Sequence, over MIDI to another **ESQ 1**. It can also send All Sequencer Data, along with the 40 Internal Programs, to a **MIrage** Digital Sampling Keyboard or **Mirage** Digital Multisamper. The Data can then be stored on formatted **Mirage** diskettes, just like **Mirage** sound Data. The **ESQ 1** can also Load All Sequencer Data, by itself or with the 40 Internal Bank Programs, from a **Mirage**.

MIDI Connections

In the case of Sending or receiving Sequencer Data via MIDI, both the **MIDI Out** jack <u>and</u> the **MIDI In** jack of the Sending Unit must be connected to the **MIDI In** and the **MIDI Out** jacks of the receiving Unit. To receive Sequence Data from an **ESQ 1**, a **MIrage** must be booted with a **MASOS** (Mirage Advanced Sampling Operation System) Diskette.

SENDING All Sequencer Memory via MIDI to a Mirage

Whenever you send Sequence Data to a **Mirage**, the 40 Programs in the **ESQ 1**'s Internal Memory are automatically sent to the Mirage along with the Sequence Data. When you later Load the Sequence Data back into the **ESQ 1**, you will be given the choice of Loading only the Sequencer Data, or the Sequencer Data plus the 40 Internal Programs.

When you send Sequencer Data to a **Mirage**, the MIDI Channel and MIDI Mode of each Machine doesn't matter. This procedure "tricks" the **Mirage** into thinking that it is receiving Sound Data. The Data goes into <u>both halves</u> of the **Mirage** Memory -- Upper and Lower. Both Upper and Lower must be saved to diskette to preserve the Data.

----> Boot the **Mirage** with a **MASOS** Diskette.
----> Connect the **MIDI Out** of the **ESQ 1** to the **MIDI In** jack of the **Mirage**.
       Connect the **MIDI In** of the **ESQ 1** to the **MIDI Out** jack of the **Mirage**.
----> On the **ESQ 1**, select the **STORAGE** Page, and press **MIDI SEND**. The following Page appears:

```
   ┌──┐   ▓▓▓▓   ┌──┐    ┌──┐   ▓▓▓▓

 ┌──────────────────────────────────────┐
 │                                        │
 │   MIDI SEND   CURRENT PROGRAM   SEQ TO MIRAGE   │
 │                                        │
 │               INT  PROGS BANKS   SEQ TO ESQ-1   │
 │                                        │
 └──────────────────────────────────────┘

   ┌──┐   ▓▓▓▓   ┌──┐    ┌──┐   ▓▓▓▓
```

----> Press **SEQ TO MIRAGE**. The Display will read *MIDI DATA BEING TRANSFERRED* PLEASE WAIT...
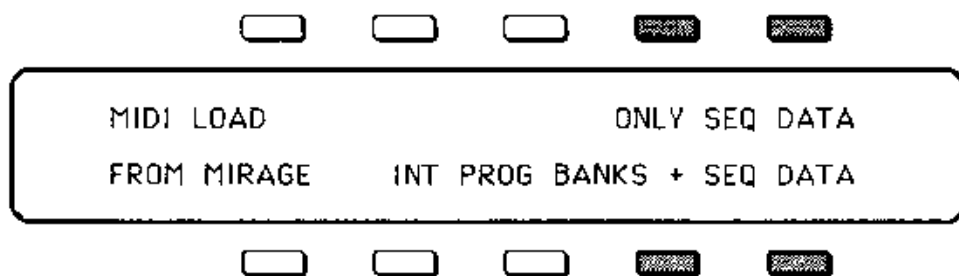
----> If the transfer is successful, the Display will say ***MIDI PROCEDURE COMPLETE***, and then return to the **STORAGE** Page. The Sequencer Data is now in the Upper <u>and</u> Lower Memory of the **Mirage**, and can be saved as a Sound to a formatted diskette. Remember you must save <u>both</u> Banks of **Mirage** Memory.

----> If the Display says ***TARGET SYSTEM NOT RESPONDING***, check your MIDI connections, make sure the **Mirage** is booted with **MASOS**, and try again.

LOADING All Sequencer Memory via MIDI from a Mirage

* * * * **Note:** To load Sequencer Data from a **Mirage**, the **ESQ 1** must have System Exclusive messages enabled (**ENABLE=KEYS+CT+PC+SS+SX** on the **MIDI** Page.)

As mentioned earlier, when you Load Sequencer Data from the **Mirage**, you have the option of also Loading the 40 Internal Programs that were saved to the **Mirage** along with that Data. This will <u>replace</u> the Internal Programs that were there before.

----> Boot the **Mirage** with a **MASOS** diskette.

----> Load the Sequence Data into the **Mirage** from a diskette where it has been stored. Both Upper and Lower Memory must be loaded.

----> Connect the **MIDI In** of the **ESQ 1** to the **MIDI Out** jack of the **Mirage**. Connect the **MIDI Out** of the **ESQ 1** to the **MIDI In** jack of the **Mirage**.

----> On the **ESQ 1**, Set the Enables on the **MIDI** Page to **ENABLE= KEYS+CT+ PC+SS+SX**.

----> On the **ESQ 1**, select the **STORAGE** Page, and press **MIDI LOAD**. The following Page appears:

```
   ┌───┐   ┌───┐   ┌───┐   ▓▓▓▓   ▓▓▓▓
 ┌─────────────────────────────────────────┐
 │                                          │
 │   MIDI LOAD              ONLY SEQ DATA    │
 │                                          │
 │   FROM MIRAGE    INT PROG BANKS + SEQ DATA│
 │                                          │
 └─────────────────────────────────────────┘
   ┌───┐   ┌───┐   ┌───┐   ▓▓▓▓   ▓▓▓▓
```

----> Press **ONLY SEQ DATA** to Load only the Sequencer Data; or press **INT PROG BANKS + SEQ DATA** to Load both the Sequencer Data and the Programs. The Display will read ***MIDI DATA BEING TRANSFERRED* PLEASE WAIT...**

----> If the transfer is successful, the Display will say ***MIDI PROCEDURE COMPLETE***, and then return to the **STORAGE** Page. The Sequencer Data is now in the **ESQ 1**'s Sequencer Memory; and if you selected **INT PROG BANKS + SEQ DATA**, the 40 Internal Programs have also been replaced.

----> If the Display says ***TARGET SYSTEM NOT RESPONDING***, check 1) your MIDI connections, 2) that the **Mirage** is booted with **MASOS**, and 3) the MIDI Enables on the **ESQ 1**, and try again.

----﹥ A number of other error messages are also possible:
1) *INSUFFICIENT MEMORY TO LOAD SEQUENCE* -- As explained earlier, this message will appear if you try to Load more Data than the **ESQ 1** has Sequencer Memory for.
2) *ONLY SEQUENCE DATA CAN BE LOADED* -- If you try to load **Mirage** sound Data into the **ESQ 1**'s Sequencer Memory, you will get this message.
3) *FATAL ERRORS DETECTED -- SEQUENCER MEMORY IS CLEARED* The MIDI connections being disconnected during the transfer can result in this message. Try the Load again.

* * * * **Note:** Whenever you are using a **Mirage** to store Sequence Data, it is a good idea move all **ESQ 1** Programs used in those Sequences to Internal Memory locations. That way when you Load the Sequences back into the **ESQ 1** from the **Mirage**, you can Load the Internal Banks with them, and the right Programs will always play with each Sequence.
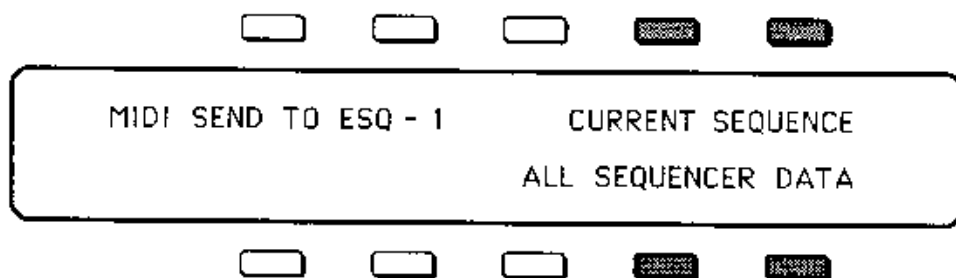
SENDING All Sequencer Memory via MIDI to another ESQ 1

When you send all Sequencer Data to another **ESQ 1**, both units must be assigned the same MIDI Channel, but the MIDI Mode of each Machine doesn't matter. The Receiving Unit must have System Exclusive messages Enabled (Set the Enables on the **MIDI** Page to **ENABLE= KEYS+CT+PC+SS+SX**.)

----﹥ Connect the **MIDI Out** of the Sending **ESQ 1** to the **MIDI In** jack of the Receiving **ESQ 1**
Connect the **MIDI In** of the Sending **ESQ 1** to the **MIDI Out** jack of the Receiving **ESQ 1**
----﹥ On the Receiving **ESQ 1**, Set the Enables on the **MIDI** Page to **ENABLE= KEYS+CT+PC+SS+SX**.
----﹥ On the Sending **ESQ 1**, select the **STORAGE** Page, and press **MIDI SEND**. The following Page appears:

```
 ┌────┐  ▓▓▓▓  ┌────┐  ┌────┐  ▓▓▓▓

 ┌──────────────────────────────────────────┐
 │                                            │
 │  MIDI SEND   CURRENT PROGRAM   SEQ TO MIRAGE │
 │                                            │
 │              INT PROGS BANKS   SEQ TO ESQ-1  │
 │                                            │
 └──────────────────────────────────────────┘

 ┌────┐  ▓▓▓▓  ┌────┐  ┌────┐  ▓▓▓▓
```

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----> Press **SEQ TO ESQ 1**. The Display shows the following:

```
┌──┐   ┌──┐   ┌──┐   ▨▨▨   ▨▨▨
┌──────────────────────────────────────────┐
│                                            │
│   MIDI SEND TO ESQ - 1      CURRENT SEQUENCE │
│                                            │
│                          ALL SEQUENCER DATA │
│                                            │
└──────────────────────────────────────────┘
   ┌──┐   ┌──┐   ┌──┐   ▨▨▨   ▨▨▨
```
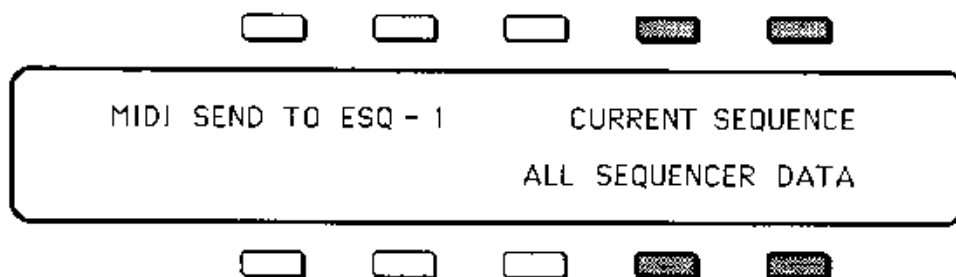
----> Press **ALL SEQUENCER DATA**. The Display will read ***MIDI DATA BEING TRANSFERRED*   PLEASE WAIT...**

----> If the transfer is successful, the Display will say ***MIDI   PROCEDURE COMPLETE***, and then return to the **STORAGE** Page. The Sequencer Data is now in the Sequencer Memory of the Receiving **ESQ 1**, replacing whatever was there previously.

----> If the Display says ***TARGET SYSTEM NOT RESPONDING***, check your MIDI connections, and the MIDI Enables on the **MIDI** Page of the Receiving Unit, and try again.

SENDING One Sequence via MIDI to another ESQ 1

Again, both units must be assigned the same MIDI Channel, but the MIDI Mode of each Machine doesn't matter. The Receiving Unit must have System Exclusive messages Enabled (Set the Enables on the **MIDI** Page to **ENABLE= KEYS+CT+PC+SS+SX**.)

----> Make sure the Sequence you want to Send is Selected.

----> Connect the **MIDI Out** of the Sending **ESQ 1** to the **MIDI In** jack of the Receiving **ESQ 1**
Connect the **MIDI In** of the Sending **ESQ 1** to the **MIDI Out** jack of the Receiving **ESQ 1**

----> On the Receiving **ESQ 1**, Set the Enables on the **MIDI** Page to **ENABLE= KEYS+CT+PC+SS+SX**.

----> On the Sending **ESQ 1**, select the **STORAGE** Page, and press **MIDI SEND**. Press **SEQ TO ESQ 1**. The Display shows the following:

```
┌──┐   ┌──┐   ┌──┐   ▨▨▨   ▨▨▨
┌──────────────────────────────────────────┐
│                                            │
│   MIDI SEND TO ESQ - 1      CURRENT SEQUENCE │
│                                            │
│                          ALL SEQUENCER DATA │
│                                            │
└──────────────────────────────────────────┘
   ┌──┐   ┌──┐   ┌──┐   ▨▨▨   ▨▨▨
```

----> Press **CURRENT SEQUENCE**. The Display will read ***MIDI DATA BEING TRANSFERRED*   PLEASE WAIT...**

----> If the transfer is successful, the Display will say ***MIDI   PROCEDURE COMPLETE***, and then return to the **STORAGE** Page. The Sequence is now in the **highest-numbered** empty, Sequence Memory Location of the Receiving **ESQ 1**.

----> If there were no empty Sequence Locations on the Receiving Unit, the Display of the Sending Unit will read ***NO SEQUENCE LOCATIONS AVAILABLE***. Erase a Sequence and try again.

----> If the Display says ***TARGET SYSTEM NOT RESPONDING***, check your MIDI connections, and the MIDI Enables on the **MIDI** Page of the Receiving **ESQ 1**, and try again.

----> If the Receiving Unit doesn't have enough free Memory for the Sequence, the Display of the Sending Unit will read ***INSUFFICIENT MEMORY TO LOAD SEQUENCE***. Erase some Sequences on the receiving **ESQ 1** and try again.