# E!

*for the*

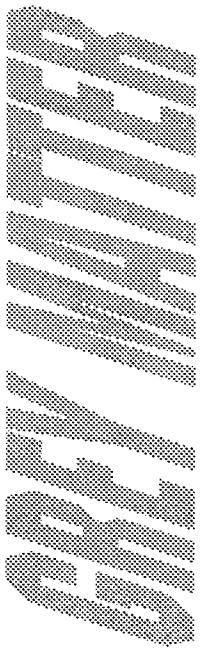
YAMAHA

# DX7II

*series*

GREY MATTER

GRey MAtteR REspOnsE inc
made in the USA

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*E! for the DX7II series (including all software and this user's manual)*
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*portions of E! for the DX7II series*
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*ENGINE version 1.0, Player version 1.0, Voyeur version 1.0,*
*and SE!quencer version 1.12*
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# Getting started

*This is it. E! for the DX7II series. It's the next generation of innovative ideas and powerful capabilities in the evolution of the legendary Yamaha DX series. From polytimbral FM voices to an on-board 16 track SE!quencer, your E!quipped DX7II/DX7s is the premiere performance instrument that also doubles as an entire MIDI studio.*

*Along with new ideas and capabilities come new things to learn. In order to take full advantage of everything E! has to offer, Grey Matter suggest that you read this manual thoroughly - beginning with the overview of E! on the next four pages and continuing on with complete descriptions of the Octal mode, ENGINE, and SE!quencer. Once you've taken the time to get to know E!, you'll be ready to explore with the most amazing performance instrument you've ever experienced- your E!quipped DX7II/DX7s.*

### • Performance mode doesn't seem to work

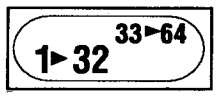



In order for a Performance mode to be active, you must exit the Edit mode (just press a VOICE mode button) and then press the PERFORMANCE button (the LED light should be on.) You'll now be able to play in your chosen Performance mode until you select a previously stored Performance number, or until you re-enter the Edit mode.

### • Performance sounds different than it originally did

It's important to make sure that all of the DX or MIDI voices used in a Performance are not accidentally erased or moved to another memory location. Also, check your MIDI instruments to see if you have changed their MIDI Receive channel since you stored the Performance.

### • What if I don't have a second Foot Switch to use as my ENGINE Foot Switch?




In every Performance mode, the ENGINE button will do everything the ENGINE Foot Switch does: from Player and SE!quencer start/stop, to Track switching in the Normal 1 & 2 modes.

### • MIDI acts strangely with E!quipped DX

When using an E!quipped DX as the control center of a MIDI setup, it is important to understand the potential problems that can be caused by ***MIDI data loops.*** A MIDI data loop can occur when one piece of MIDI gear transmits a message to another piece of gear, which in turn re-transmits the same message back to the first machine. On a stock DX, you may never notice this situation, but on an E!quipped DX, you could have ENGINE set up to complete the loop by taking an incoming message and transmitting it AGAIN to the other piece of gear. When this situation occurs, a single message or group of messages is re-transmitted continuously until one of the machines is overloaded. To avoid this situation, you should ***take great care to insure that messages you send thru ENGINE to other MIDI gear are not returned to the DX's MIDI IN port.***





Although E! gives your DX7II/DX7s many new features, you may have noticed that there aren't any new buttons or switches on the DX's control panel. That's because E!'s functions are so well integrated into the DX that you can access them right along with all the original DX functions. After working with E! for just a while you'll be using these new features just like any other DX parameter. Here's a brief overview of some of these features, starting with E!'s new polytimbral Voice mode - the Octal mode:

## The Octal mode

One of E!'s most exciting additions to the DX7II series is the Octal mode where you can play up to 8 internal DX Voices at the same time. Any internal DX Voice, from any one of E!'s memory banks, can be played in the Octal mode. When you combine these voices with E!'s amazing ENGINE and SE!quencer, you've got an entire MIDI studio right in your DX!

## ENGINE

ENGINE is the heart of the entire E! system - it's sort of a "clearing house" for all of your DX and MIDI data. As a 16 track event processor, ENGINE lets you control all data that is coming in and going out of the DX. With its 8 Performance modes, like Chords and Player, you can play 16 track arpeggios, ostinato patterns, and multi-timbral chords - all triggered by hitting one key. And, best of all, every ENGINE parameter is fully programmable! Just store each set-up into one of E!'s 128 Performances - for every Performance E! will send out a 16 track Patch Map to your MIDI gear, call up your DX Voices from Octal mode, and even load a Song from SE!quencer. It's really incredible!

# SE!quencer

And then there's SE!quencer, the most powerful MIDI recorder of it's kind. In many ways, it's just like a 16 track tape recorder - you can record, playback, even edit - for both the DX and any MIDI channel. If this is your first time working with a sequencer you will find E!'s SE!quencer to be quite simple to understand and easy to use. If you are already familiar with other sequencers, you will find SE!quencer to be a full-featured MIDI data recorder with advanced capabilities like step editing, quantization, and tempo record. Now you can record and play 16 track Patterns and Songs wherever you are with your DX - at home, in the studio, even on stage.

Before you explore these amazing features in detail, be sure to look over the next two pages for some basic information on selecting and loading Voices with E!'s 4 memory banks, and on E!'s MIDI implementation.







# Trouble shooting

*here are some suggestions in case you run into any complications*

### • The DX is not making any sound

(1) Go through the DX's MIDI menus (under button 31) and check the Local Control parameter. You want that to be ON so that notes will be voiced by the DX.

(2) Make sure that the Velocity Level parameter of the Track Assign menu isn't turned all the way down (a "normal" value is usually 05)

(3) If you are in the Octal mode, make sure that:
[A] you have a sufficient amount of Polyphony assigned to each DX Voice you are using;
[B] the DX Volumes are all at an audible level; or
[C] the DX Voices A thru H are all playing a valid patch (you could possibly have a DX Voice playing a non-existent sound, or garbage data)

### • Patterns made in SE!quencer sound strange

As a part of E!'s overall initialization, the Global Initialize Utility for SE!quencer will prepare SE!quencer's memory banks for the recording of Patterns and Songs. If you find that some Patterns are "not quite right", it could be that the Global Initialize was not originally done.

### • SE!quencer Song is playing wrong Patterns

In order for a Song to be played back correctly, ALL of the Patterns that were used to make it must still be in SE!quencer's memory and they must still be at their original Pattern number location.

# DX7IIFD: storing data to disk

*E! introduces three new disk storage formats to the DX7IIFD. They are accessed in the same way as the original formats by pressing button 16 while in the Edit mode.*

• MDR 2
This new MIDI Data Recorder format is exactly the same as the original MDR, with the exception that the file size has been increased to 128K bytes. *Please note that the **ENTIRE** E! memory (SE!quencer, ENGINE, 12 tone microtunings, and stored Performances) will be erased if you choose the MDR IN option.*

• ERAM
The ERAM format will allow you to store the entire state of E!'s internal memory onto one disk - this includes all Voices, Performances, 12 tone microtunings, ENGINE, and SE!quencer data.

• SE!
Storing Songs and Patterns to disk is discussed in the SE!quencer Appendix.

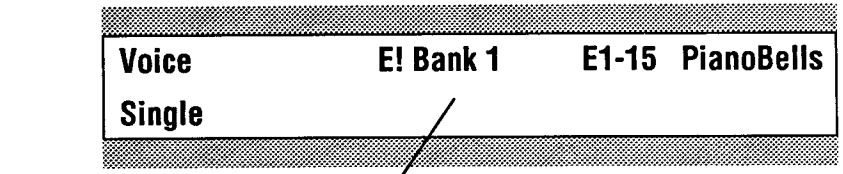




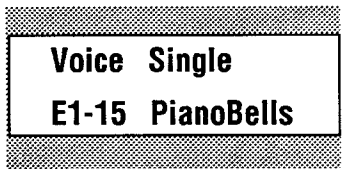
# Selecting Voices

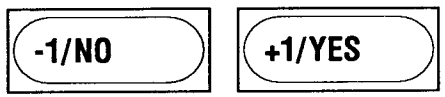
Selecting a patch from one of E!'s 4 memory banks is easy. Just use the data entry buttons (+/-) to choose which bank you want to be in. Then simply select the patch number that you want (from 1 to 64) and that's it. The total number of patches the E! can store internally is 256.

## DX7II screen




## DX7s screen




*use the data entry buttons to select the E! memory bank*




*select from patches 1-64 for each memory bank*

## Loading Voices

Loading patches from a cartridge or via MIDI is also easy. First, select one of E!'s 4 memory banks and then select a patch from that bank (it's O.K. if there are no patches stored in this bank yet - doing this simply makes the bank "active".)

Now, assuming that Internal Memory Protect is OFF, all you have to do is enter the Edit mode and load the patches as you normally would (see your Yamaha DX7II/ DX7s owner's manual for more information.) To load into another memory bank, just select that bank, choose a patch to make it active, and load your voices.

## E! and the DX's MIDI implementation

| Channel | >Trns ch | Rcv ch | >A | >B | >Omni |
|---|---|---|---|---|---|
| Messages | off | | off | off | off |

With ENGINE, the DX is able to process all 16 MIDI channels simultaneously - something that was obviously not possible before E! was installed. You can filter channels on or off, merge data, even change patch numbers directly from the DX.

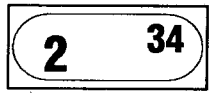
In order to do all this, ENGINE overrides the DX's MIDI implementation - that is, ***only if you have turned the DX's MIDI Receive/Transmit channels and OMNI mode OFF will ENGINE process the data correctly.***

*See the Trouble shooting chapter at the end of this manual for information regarding the proper set-up of your MIDI system with ENGINE.*

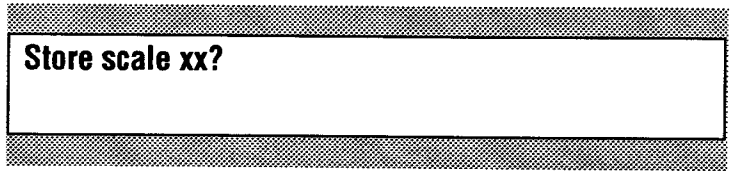


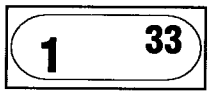


## Storing Twelve tone scales




*press button 2 to save a 12 tone scale*




*thru*




*press buttons 1 thru 32 to select the location of the scale*




*press YES 2 times and the scale will be stored to memory*

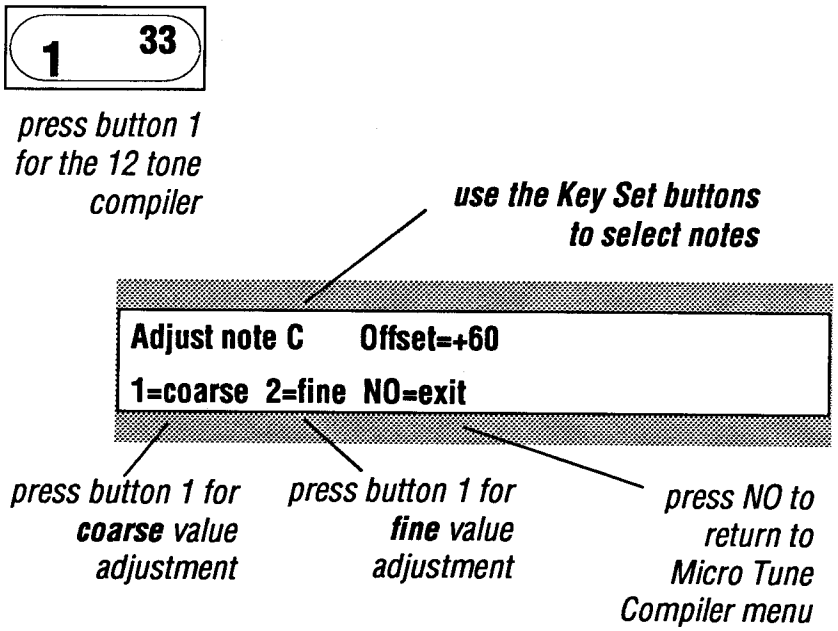
## Playing Twelve tone scales

| Micro tuning | >Table select |
|---|---|
| | 12 tone 09 |

By using the Micro Tuning Table Select menu you can play any one of the 10 Preset tunings, the 2 User-defined tunings, and the 32 User-defined Twelve Tone scales.

Please note that these microtuning scales are for DX Voices only, and that ENGINE's Micro Tuning Enable parameter must be turned on for any alternate tunings to be heard for each DX Voice.

# Twelve tone compiler




This is E!'s exclusive Twelve Tone Compiler, which makes global scale adjustment fast and simple. The Compiler lets you set a specific offset value for each of the twelve notes per octave.

Use the Key set buttons to select a note to offset. The data entry slider will adjust the offset value, which is in terms of Yamaha's Tuning Units. ***When you choose to offset a note, E!'s Twelve Tone Compiler will automatically offset that same note for every octave.***

This compiler makes it easy to construct a "blues scale", or a Lydian scale with a slightly raised sharp 4th, or a scale with Just intonation.





# The official E! sticker

The distinctive, handsome, and downright striking E! sticker has been included for you to place directly on the DX's front panel. Making sure that there is no oil or dirt on the metal, simply remove the sticker's paper backing and gently place it between the Yamaha DX logo and the algorithm charts.

# ENGINE

*Musicians, start your ENGINE! Your E!quipped DX7II/DX7s has, among many other things, a 16-track DX/MIDI-event-processor that we call ENGINE. Now you can control the DX and your entire MIDI setup right from the DX's keyboard. Even if you don't have an extensive MIDI setup, you can use ENGINE with the Octal mode, which lets you play up to 8 internal DX Voices at the same time. From its 16-track patch mapping and Velocity Processing to the amazing Performance modes, ENGINE will process your DX and all your MIDI gear together, treating them as different parts of the same instrument. Just follow the diagrams and read about the incredible possibilities of ENGINE:*





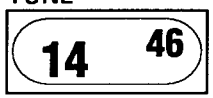
## How to enter the 12 tone compiler

***press***

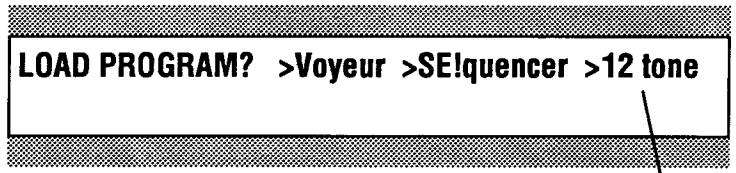



UTILITY

TUNE




***press button 14 until screen reads***




*select **12 tone** and press YES*




*"Help" screens show possible choices*

***On the DX7s:** press the STORE button to view all of the "Help" screens for the Micro Tune compiler*

# Expanded Micro Tuning

*Along with expanded memory for Voices and Performances, E! has an expanded memory for up to 32 separate 12 tone microtunings. In addition to extra storage, there is E!'s exclusive 12 tone Scale Compiler, which lets you create a global scale much faster than by individually adjusting notes. Just follow the diagrams on the next few pages:*

*If you are unfamiliar with your DX's Micro Tuning system, Yamaha has published two supplemental booklets to the DX7II/DX7s owner's manual. They are titled Exploring the Preset Microtunings and The Mathematics & History of Microtunings. Please contact your Yamaha dealer for more information.*



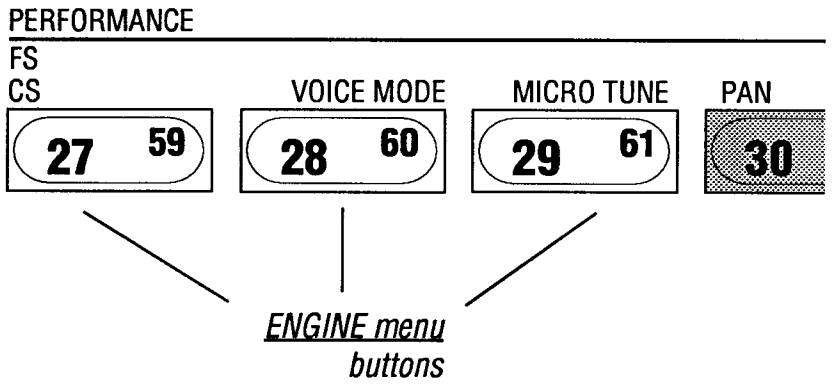


## How to enter ENGINE

*press*

EDIT

*then press an ENGINE menu button*



# Using ENGINE on the DX7s

Due to the smaller LCD screen on the DX7s, viewing every parameter of each ENGINE menu at the same time is not possible. In order to view every parameter, simply press the (right) Cursor button, which will "move" the ENGINE menu on the screen, as in the example:

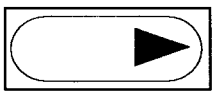
## DX7II screen

| TR | >Dest | >Transpose | >Patch | >Curve | >Level |
|---|---|---|---|---|---|
| 09 | DX D | +12 | ---- | NORM | 02 |

## DX7s screen

| TR | >Dest |
|---|---|
| 09 | DX D |

*press*



| >Transpose | >Patch |
|---|---|
| +12 | ---- |

*press again*



| >Curve | >Level |
|---|---|
| NORM | 02 |





**X** = *System Exclusive* *[button 25]*
**S** = *Active Sensing* *[button 26]*
**T** = *Timing data (MIDI clock, etc.)* *[button 27]*
**B** = *Pitch Bend* *[button 28]*
**P** = *Patch changes* *[button 29]*
**A** = *After Touch* *[button 30]*
**C** = *Controllers* *[button 31]*
**K** = *Keys* *[button 32]*

**XstbPaCk**

*Voyeur **has not yet received** After Touch data*

**XstbPACk**

*Voyeur **has received** After Touch data*

**XstbP Ck**

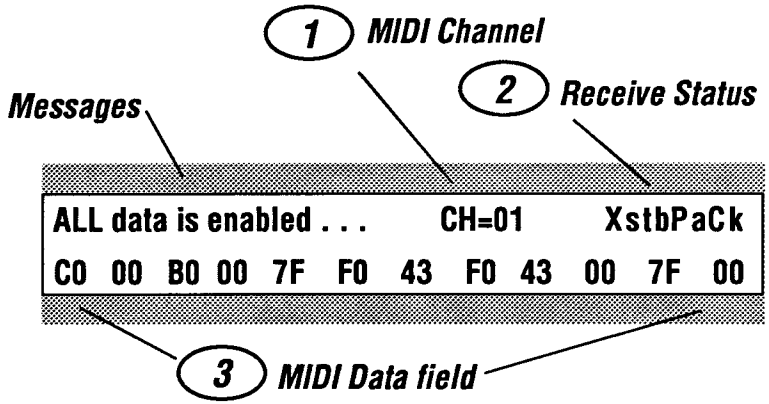
*After Touch has been **disabled** (turned OFF)*




***MIDI Data*** This is the actual MIDI data stream that is passing through the DX7II. Button 18 will freeze the screen so you can examine the data closely. Please refer to the MIDI 1.0 Detailed Specification Document, or to any other MIDI tutorial on how to interpret this data.




*press NO to exit Voyeur*



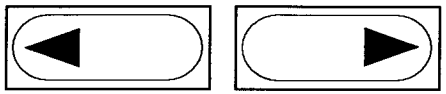

**1** ***MIDI Channel*** This displays which MIDI channel Voyeur is receiving. To change channels, just select buttons 1-16 (button 1 = MIDI channel 1, button 2 = MIDI channel 2, etc.) Button 17 will allow Voyeur to receive in OMNI mode.

**2** ***Receive Status*** Each letter in this display corresponds to a different type of MIDI data that Voyeur receives. When Voyeur has not yet received certain data, their letters will be lower-case (example: x, s, t, etc.) When Voyeur has received certain data, their letters will be upper-case (example: X, S, T, etc.) Buttons 25-32 will allow you to filter out each type of data (press the button to turn data ON/OFF) - an empty space on the screen means that type of data has been turned OFF.

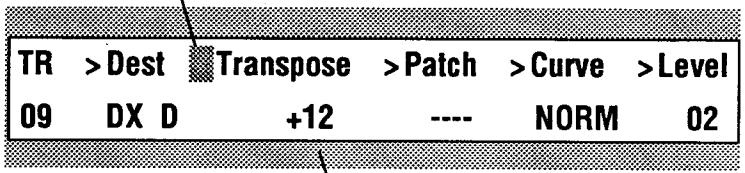


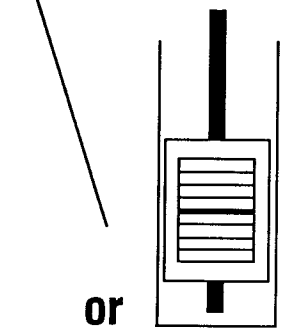


# Adjusting ENGINE parameters

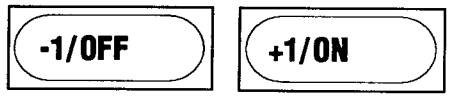


*to select a parameter, move the Cursor by pressing the Cursor buttons*



or




*use the data entry slider or the +/- buttons to adjust the value*

# ENGINE: an overview

ENGINE is a 16-track event processor for all DX Voices and any MIDI channel. What exactly does that mean, you may be wondering? Well, for one thing, ENGINE allows you to control your entire setup (the DX and MIDI) from one location - namely, the DX keyboard. In this way, you can take up to 16 separate MIDI instruments, plus up to 8 internal DX Voices, and play them all from the DX. However, with ENGINE, "play" doesn't mean a simple merge where depressing a key will send the same information to all MIDI channels. ENGINE is much more than that, because each of its 16 Tracks can play a separate part to a separate instrument - all at the same time!

| TR | >Dest | >Transpose | >Patch | >Curve | >Level |
|---|---|---|---|---|---|
| 09 | DX D | +12 | ---- | NORM | 02 |

Any instrument, DX or MIDI, can play on any Track. Selecting an instrument for each Track is done in the main ENGINE menu, the Track Assign menu. It is here that you can cycle thru all 16 Tracks and choose the instrument (we call it a "Destination") that will play on each Track. You can even assign a separate transpose value and velocity response to each Track - ENGINE will send this information to any internal DX Voice or any MIDI channel, wherever you tell it to.





# How to enter Voyeur

*press*

EDIT

UTILITY

TUNE

14 46

*press button 14 until screen reads*

LOAD PROGRAM? >Voyeur >SEIquencer >12 tone

*select Voyeur and press YES*

+1/ON

# Voyeur the MIDI monitor

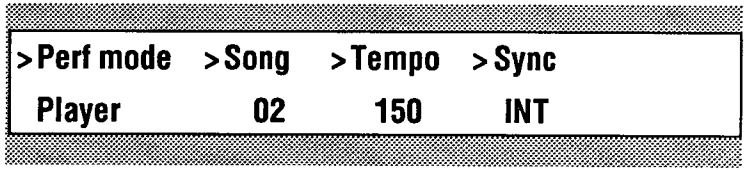
*Voyeur is a MIDI monitor program that displays all incoming MIDI data right on the DX7II screen. Voyeur allows you to selectively filter certain types of MIDI data on each individual channel, or on all channels using the OMNI mode. This program is particularly helpful if you are working with many instruments in a large MIDI system or if you just want to see how MIDI works. Voyeur has been included in E! for those who are already familiar with the more technical aspects of MIDI; if you are interested in learning about MIDI, Grey Matter recommend that you read the MIDI 1.0 Detailed Specification document or any other MIDI tutorial.*








Even if your E!quipped DX is the only MIDI instrument you have, you can use ENGINE's amazing capabilities in any DX Voice mode - including the Octal mode, where you can play up to 8 internal DX Voices at a time. That's right, you can play 8 different internal Voices simultaneously, with each Voice assigned to a separate Track. With ENGINE and the Octal mode, an E!quipped DX7II/DX7s really is a self-contained MIDI studio.

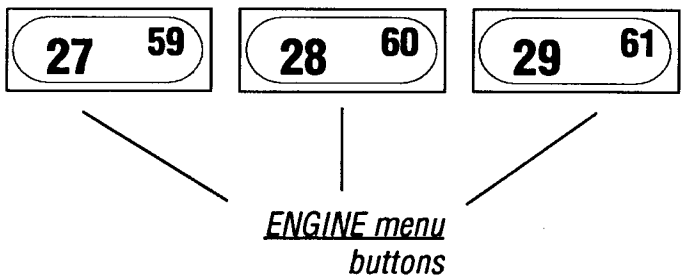



And then there are the 8 Performance modes to realize the full potential of ENGINE. Not only are there are different styles of "splits", like the Floating Split, which has a split point that dynamically follows your right hand up and down the keyboard, but there are also incredible new auto-accompaniment modes like Chords and Player, which let you play 16 track arpeggios, ostinato patterns, and complex rhythms - all done by hitting one key! ENGINE's Performance modes really put the "live" back into live performance.

And finally, every ENGINE parameter is fully programmable - just set everything up the way you want and store it all into one of the 128 programmable Performances. Now that you have a general idea about the many capabilities of ENGINE, go ahead and read each discussion for more complete information.

# ENGINE menus

*The ENGINE menus can be divided into three groups: the Controller menus, the Performance/Voice mode menus, and the DX Voice menus. To make it easier for you to organize these menus, each group has been assigned its own ENGINE menu button. Just press these buttons repeatedly to cycle thru the ENGINE menus and follow the diagrams:*








## On the DX7IID and DX7s

Songs and Patterns can be transmitted to a computer or another E!quipped DX7II/DX7s over MIDI by using the special **Transmit SE!** menu under the MIDI 2 menus (button 32.) When you transmit SE!quencer data, you will be sending the entire state of SE!quencer - all 10 Songs and 32 Patterns, with a total of 22,000 events per grouping. Please note that downloading SE!quencer data over MIDI is a slow process - expect it to take at least 1 minute.

# Transferring data into SE!quencer

### *Step 1: Prepare the external sequencer to play*

In order for SE!quencer to accurately record your Tracks, you should make sure that the following conditions are true:

[A] The sequencer's MIDI Clock out should be "ON" - this allows SE!quencer to accurately record timing data.
[B] All other types of timing data should be "OFF" - this includes Song position pointer, MIDI time code, etc.
[C] Set the tempo control to "SLOW" While normally not needed, this step insures that the DX can accurately process all incoming data.

### *Step 2: Prepare SE!quencer to Record*

[A] Choose a Pattern number to record and initialize it to the exact number of bars needed to record the Pattern.
[B] Set SYNC mode to "EXT" - this tells SE!quencer to "follow" the other sequencer.
[C] Set the ENGINE MIDI IN mode to "NORMAL" - this tells the DX to record data coming into the correct channel.
[D] Set the proper MIDI IN channel (button 31) - this tells the DX which channel to look at for incoming data. Also turn OMNI "OFF".

### *Step 3: Record the Pattern*

Each time you record, send one Track from the other sequencer to the MIDI channel that the DX is set to receive on. After 16 passes (you record each Track separately), the Pattern will be playable directly on SE!quencer.

# Storing Songs and Patterns to disk

## On the DX7IIFD

If you are an owner of a DX7IIFD, you can use the disk drive to increase SE!quencer's internal memory limit to 220,000 events - that's 22,000 events per Song!!! You can store up to 10 Songs per disk, each Song using up to 32 separate Patterns; by using just a few disks you'll be able to store ***hours*** of SE!quencer Songs.

To store a Song and its component Patterns to the internal disk drive, you must exit the SE!quencer program and go to the DISK menus under button 16. If your disk has been formatted already, press button 16 until the screen says **Disk SE!**

| Disk SE! | >Dir | >Save | >Load | >Del | >Rename |
|---|---|---|---|---|---|
| File 3 | | x . . . . . | | | [yes] |

(1) Under the Directory, choose from File 1 to File 10 - these File numbers correspond to Song numbers (File 1=Song 1, File 2=Song 2, etc.)

(2) Name EVERY File that is holding a Song "x" - any other name than "x" will make it impossible to retrieve the Song.

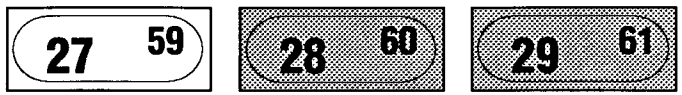
(3) Press YES and your Song and the Patterns used to make it will be stored under the corresponding File number. Now, when you select that SE!quencer Song number in the Performance mode, E! will call up its File number from the disk and load it into memory.

***WARNING:*** *loading a Song from disk will erase ALL other SE!quencer data currently in the system (all Songs and Patterns)*





# Controller menus

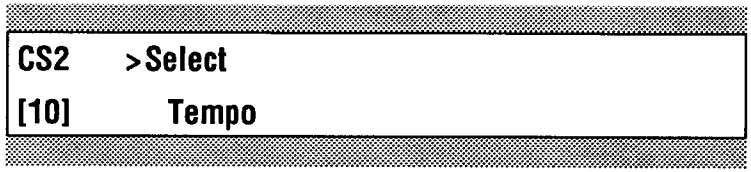



*press button 27 to cycle thru the Controller menus*

| Sustain foot switch | >A | >B |
|---|---|---|
| (64) | on | on |

This menu remains exactly as it was before E! Please refer to your Yamaha DX7II/DX7s owner's manual for more information.

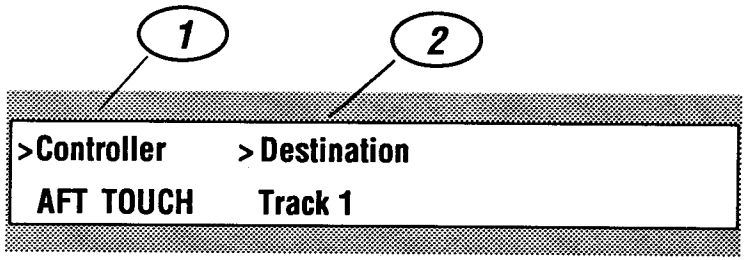
## ENGINE menu 1




This menu remains exactly as it was before E!, with the exception that CS1 and CS2 can be set to be a Tempo control for Player and SE!quencer.

For information regarding the other possible CS1/CS2 Select modes, please refer to your Yamaha DX7II/DX7s owner's manual.

## ENGINE menu 2




This is the Controller Map menu, where you can remap each of the DX's controllers to any of ENGINE's 16 Tracks. For example, you can set it up so that triggering AfterTouch on the DX keyboard will affect only voices currently being played by Track 1, while the Pitch Bend may affect only voices being played by Track 2. (Note: these settings are active only in the "live" Performance mode.)





# MIDI In/Out sync

- MIDI In sync

To sync SE!quencer to an external MIDI instrument that transmits a MIDI clock (such as a drum machine or another sequencer), set the Sync parameter on the ENGINE Performance mode menu to "EXT." *SE!quencer will then depend on an external instrument for timing and start/stop commands.*

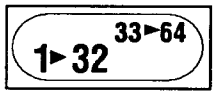
- MIDI Out sync

In order for SE!quencer to sync to an external MIDI instrument that accepts MIDI clock data, you must set the Sync parameter on the ENGINE Performance mode menu to "INT" and the ENGINE Clock Out parameter must also be turned ON. Now when you start to record or play in SE!quencer, E! will transmit MIDI clock data for timing and to start/stop your external instrument(s).

# Memory limits in SE!quencer

Information that is recorded into SE!quencer is stored in terms of events. An event is everything from a key on/key off command, to velocity, after touch, and pitch bend data. The maximum number of events that SE!quencer can store in internal memory is 22,000 (storing to disk is discussed on the next page.) Although this is quite a substantial amount, there may come a time when you simply run out (the LCD screen will alert you to this by displaying "Problem . . . RAM full!")

One piece of advice on conserving memory is to limit the use of controllers when recording - controller data is notorious for using up events in large quantities (you can also use the Strip Controllers Utility to strip away any controller data per Track.) However, don't abandon the use of controllers just to save memory; that would be boring.




*the ENGINE button*

• Playing a Song stored in a Performance

If you select a Performance with a SE!quencer Song stored in it, E! will send out a 16 Track Patch Map to set up both your DX Voices and MIDI voices (according to the ENGINE settings that you stored) and then call up the Song from SE!quencer. There are two ways to start/stop the Song: either press the ENGINE button, or press the Foot Switch(2) if it is set to ENGINE mode.

You can also play along with the Song - all notes played on the DX keyboard live will be voiced by the Track 1 Destination.

## The "click track"

SE!quencer's "click track" is used to provide timing when you record a Pattern. A different timing can be set for each Pattern when you initialize it - SE!quencer automatically records a special "click track" that is independent of the other 16 Tracks. However, the sound of the "click track" is taken from the Track 16 Destination. When you record a Pattern, the "click" will sound ONLY if you have an active Destination set for Track 16, and if the Destination itself can sound (i.e. check volume levels, polyphony settings, etc.)




When you play back a Song or Pattern in the SE!quencer program, you can mute the "click track" by pressing the PERFORMANCE button (pressing the PERFORMANCE button again will bring the "click track" back.) The LED light will still flash as a tempo indicator. The lead-in can be removed from a Pattern any time after you record a Track - once the lead-in is removed it cannot recalled unless you re-initialize the Pattern.

When you play a Song in the Performance mode, the "click track" will not sound, but the LED light will flash as a tempo indicator.











There are 17 controllers to choose from: AfterTouch, MIDI controller, Modulation Wheel, Breath control, Foot control, Portamento (time), Data entry, FC1 and 2, CS1 and 2, Sustain, Portamento (on/off), Key Hold, Soft, FS2, and Pitch Bend.







You can remap each controller to any of ENGINE's 16 Tracks (see the Track Assign menu for more information.)

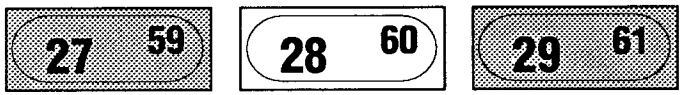
## ENGINE menu 3

| Foot switch | >Select | >A | >B |
|---|---|---|---|
| (64-67) | ENGINE | --- | --- |

This menu remains exactly as it was before E!, with the exception that one more mode, the ENGINE mode, has been added to the Foot Switch Select. When it is set to ENGINE, the Foot Switch (2) will act as a Stop switch for both Player and SE!quencer, and as a Track select switch in the Normal1 and Normal2 Performance modes (all of which are discussed later in the manual.)

For information regarding the other possible Foot Switch Select modes, please refer to your Yamaha DX7II/DX7s owner's manual.

# Performance/Voice mode menus




*press button 28 to cycle thru the Performance/ Voicemode menus*

## ENGINE menu 1

| >Perf mode | >Song | >Tempo | >Sync |
|---|---|---|---|
| Player | 04 | 120 | INT |

With this menu you will select the current ENGINE Performance mode. Please refer to the Performance modes chapter for a complete explanation.





# Storing Songs into Performances

You can store the location of any one of the 10 SE!quencer Songs into any one of the 128 Performances. This means that every time you select a Performance with a Song in it, E! will automatically call up the Song along with the rest of the ENGINE settings.

To store a SE!quencer Song as part of a Performance, just go to the ENGINE Performance mode menu and select the SE!quencer mode. Then select which of the 10 Songs you want and set the Tempo and Sync. Now follow the procedure that is described in the Storing Performances chapter of ENGINE.

| >Perf mode | >Song | >Tempo | >Sync |
|---|---|---|---|
| SE!quencer | 07 | 190 | INT |

# Live performance with SE!quencer

There are two methods of playing SE!quencer Songs and Patterns in a live performance situation: within the SE!quencer program, or in the 128 programmable Performances (Songs only.)

- Playing within the SE!quencer program

As you know, you can play any one of the 32 Patterns or 10 Songs while in the Play mode of the SE!quencer program. This allows for almost limitless combinations of Patterns or Songs for any length of time (see the Play mode chapter for more information.) If the Foot Switch (2) is set to ENGINE mode, pressing it will start/stop the Pattern or Song. Also, you can play along with SE!quencer - all notes played live on the DX keyboard will be voiced by the Track 1 Destination.

# SE!quencer appendix

## Adjusting ENGINE menus

Adjusting the ENGINE menus - such as Track Assign, Voice Mode, DX Volumes, and all others discussed in the ENGINE chapters - can be done at any time without having to exit the SE!quencer program. Simply press the EDIT button and the main ENGINE menu, Track Assign, will appear. From here you can go to any ENGINE menu and change the settings. To return to SE!quencer, just press the EDIT button again and you're back where you left off.

Please note that you will not be able to change the Performance Mode menu or store/activate Performances when you adjust ENGINE settings while still in SE!quencer.

EDIT

*press EDIT to adjust the ENGINE menus*

| TR | >Dest | >Transpose | >Patch | >Curve | >Level |
|---|---|---|---|---|---|
| 09 | MIDI 06 | +12 | 51 | POS 1 | 06 |

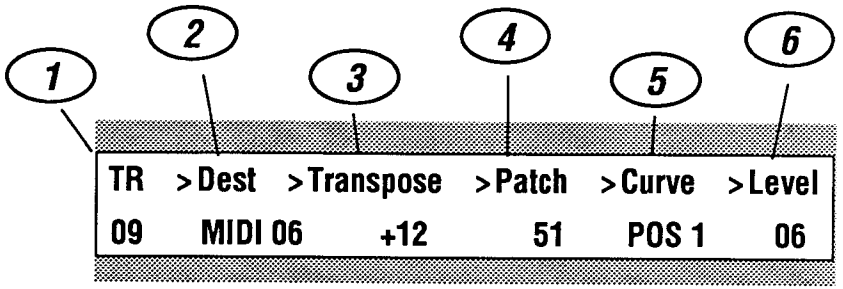
EDIT

*press EDIT again toreturn to SE!quencer*





### ENGINE menu 2




*read as* *"Track 9 is being played by MIDI channel 6, patch 51. It is being transposed 12 notes up. The Velocity Curve is Positive1 and the Velocity Level is 6."*

This is ENGINE's main menu, the Track Assign menu, where you direct the ENGINE data for each Track to any internal DX Voice or any MIDI channel. You can also use this menu to change patches on any MIDI channel, transpose these patches, and enhance their dynamic levels with E!'s exclusive Velocity Processing.

Although very simple, it is important to fully understand the functions of this menu - you will find it to be an integral part of most every feature of your E!quipped DX7II/DX7s.

1

| TR | >D |
|---|---|
| 09 | D |

There are 16 Tracks which direct ENGINE data to any Destination. Each Track can process up to 16 notes at a time.

***always use the Key Set buttons to adjust the Track number***

2




The Destination of a Track is where all data from that Track will be sent. In ALL Performance modes, each Track must have a Destination in order to hear any sound.

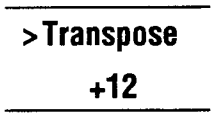
EXAMPLE 1: If you are in the Normal1 play mode, Track 1 will be the active keyboard Track - so, the Destination of Track 1 should be the DX Voice or MIDI channel that you want to play.

EXAMPLE 2: If you are in the SE!quencer mode, each Track that you record must also have a DX Voice or a MIDI channel Destination. If you want to change the sound of a recorded Track, just change its Destination. You can even have the same Destination play multiple Tracks.

Possible Destinations are:

- Any internal DX Voice (in the Single, Dual, and Split modes the screen will simply read "DX"; in the Octal mode, you will choose between DX Voices A thru H)
- Any of the 16 MIDI channels.
- A track can also be turned OFF.

3



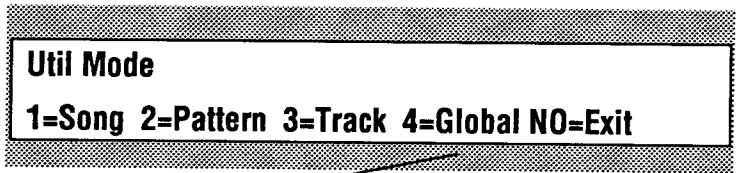

Use this parameter to transpose any DX or MIDI patch. The value on the screen refers to notes (+12 means 12 notes, or 1 octave, up.) The range, both up and down, is 2 octaves.





*Now that you've read all about SE!quencer's four modes - Record, Play, Edit, and the Utilities - you should read the SE!quencer appendix for more information on special topics like storing Patterns and Songs to disk, playing along with SE!quencer live, and MIDI sync with other sequencers and drum machines.*

# Global Utilities




*press button 4 to select the Global Utilities*

There is only one Global Utility - the Global Initialize, which will erase ALL Patterns and Songs currently in SE!quencer. SE!quencer will warn you before actually erasing the data.

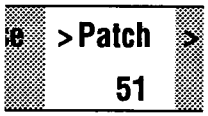



*press button 1 to erase ALL SE!quencer data (press NO to exit)*





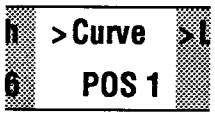
4




*the MIDI patch number range is 0 to 127*

If your Destination is one of the 16 MIDI channels, you can use this parameter to change the patch number without even moving from the DX keyboard. And once you have stored all of your ENGINE settings into a Performance, E! will transmit a 16-track patch map to set up your MIDI devices.

5




*use the POS1 and POS2 curves to extend the MIDI velocity output range to 127*

The Velocity Curve determines the overall character of velocity response for any internal DX or MIDI patch. There are four Curves to choose from:

- NORM - this is the DX's original velocity curve.
- POS1 - this curve is biased so that the output velocity will be *higher* than what is really played.
- POS2 - this curve makes it easy to produce *very low* or *very high* velocities. Playing with anything up to medium velocity will output a low velocity, while playing with anything over medium velocity will output a high velocity.
- NEG - this curve will output the *opposite* velocity of what is really played (playing soft will sound loud, while playing hard will sound soft.)

6




*the "normal" Velocity Level is 05*

The Velocity Level acts as a volume/brightness control for any internal DX or MIDI patch. Not only are you able to scale down patches that may be "too loud", you can also "overdrive" them to a level that isn't humanly possible to play, making sounds brighter than you've ever heard them before.

## Track 1: the "live play" Track

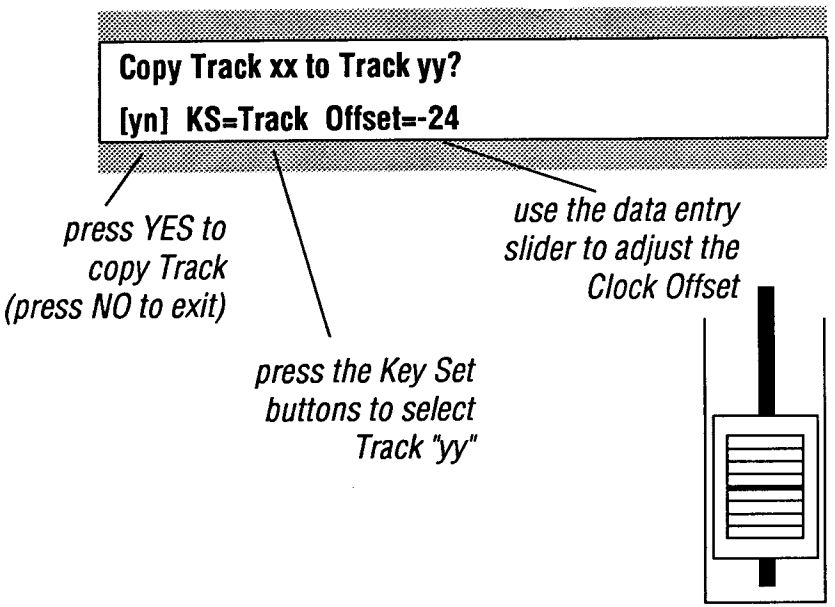
*Track 1 is ENGINE's "live play" Track. In most Performance modes, keys that you play LIVE on the DX keyboard will be played "thru" Track 1.*

*EXAMPLE 1: In the Normal mode, if Track 1 is set with a Destination of MIDI 05, notes played on the keyboard will be output to MIDI channel 5.*

*EXAMPLE 2: While playing a pre-recorded Song in SE!quencer, you can play Track 1 live on the DX keyboard - just choose whatever Destination you like and all notes played live on the keyboard will be sent there.*





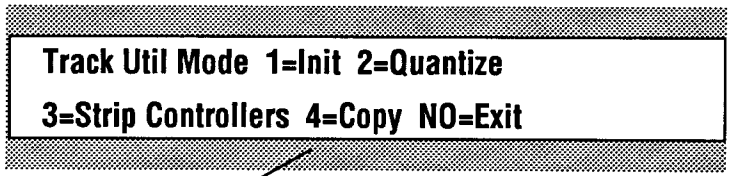



When you offset the new Track, you are really moving it to a slightly different time in the Pattern - before or after the original Track. In this way, you can use the Track Copy Utility to create special effects like a "pre-echo", or a subtle delay, or even a canon that is exactly in time with the Pattern.

The Clock Offest range is from 64 Clocks before the original Track (-64), to 63 clocks after the original Track (+63). Each clock is equal to 1/24 of a quarter note (24 clocks=1/4 note, 12 clocks=1/8 note, 6 clocks=1/16 note, 3 clocks=1/32 note)

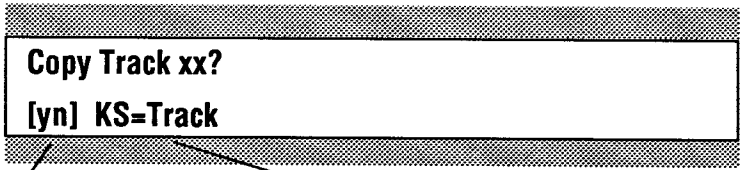
An Offset value of 00 will put the new Track at the same time as the original Track.

# Track Copy




*press button 4 to select the Track Copy Utility*

The Track Copy Utility will let you copy any Track of the Pattern that you have just been recording or playing back. You can even offset the new track so that it precedes or follows the original track.



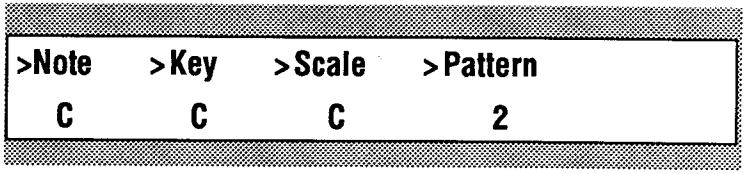

*press YES to continue (press NO to exit)*

*press the Key Set buttons to select Track "xx"*



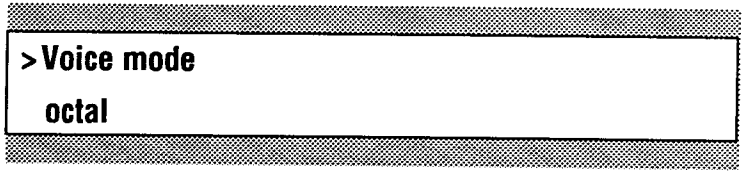


## ENGINE menu 3




This is ENGINE's Tonal Processor, which is used to program tonal patterns in Chords and Player. Please see the Performance modes chapter for a full explanation.

## ENGINE menu 4




With E!, there are four DX Voice modes: Single, Dual, and Split (all of which are exactly the same as the original DX7II Voice modes), or Octal mode, which lets you play up to 8 DX voices at once.

*The Voice modes are discussed on the following two pages:*

## Single mode

| >Voice mode | Voice A | Voice B |
|---|---|---|
| single | E2- 15 | ---- |

*See the next page about selecting Voices.*

## Dual mode

| >Voice mode | Voice A | Voice B |
|---|---|---|
| dual | E2-15 | E3-07 |

In the Dual mode, you can layer any two DX voices together. This means that when you play any note, both Voice A and Voice B will play together. This also means that the polyphony of the DX is reduced to 8 notes in this mode.

If your DX is set to the Dual mode, the Dual Detune screen will appear as you cycle through the menus. This parameter will shift the pitch of both Voices in equal increments of 1/32 steps (0= original pitch, 8=1/4 step detune.) Voice A is shifted up, and Voice B is shifted down.

| >Dual detune |
|---|
| 2 |

*See the next page about selecting Voice A and Voice B.*





## Quantize Track

| Track Util Mode 1=Init 2=Quantize |
|---|
| 3=Strip Controllers 4=Copy NO=Exit |

*press button 2 to select the Quantize Track Utility*

Quantize Track is fully explained in the Record Pattern chapter.

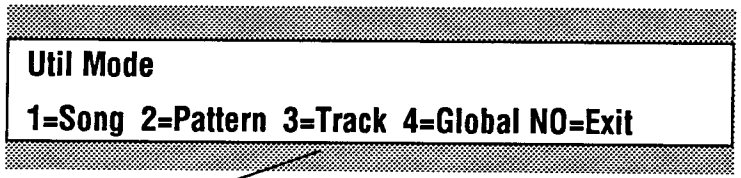
## Strip Controllers

| Track Util Mode 1=Init 2=Quantize |
|---|
| 3=Strip Controllers 4=Copy NO=Exit |

*press button 3 to select the Strip Controllers Utility*

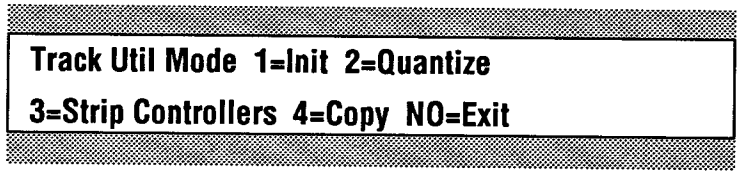
The Strip Controllers Utility is fully explained in the Record Pattern chapter.

# Track Utilities



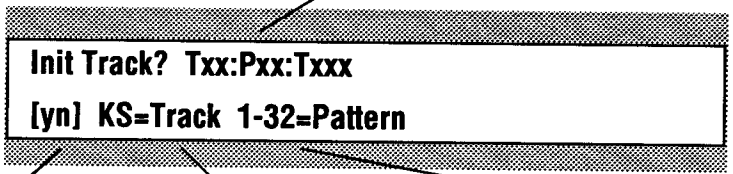

*press button 3 to select the Track Utilities*

## Track Inititialize




*press button 1 to select Track Initialize*

*"TPT": the Pattern status display*




*press YES to erase Track (press NO to exit)*

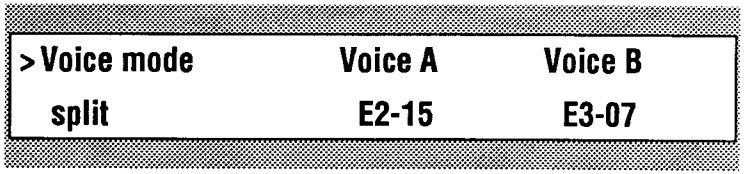
*press the Key Set buttons to select Track*

*press buttons 1-32 to select Pattern*



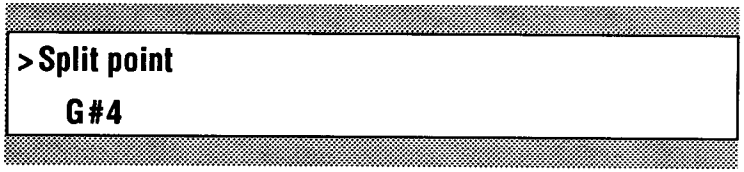


## Split mode



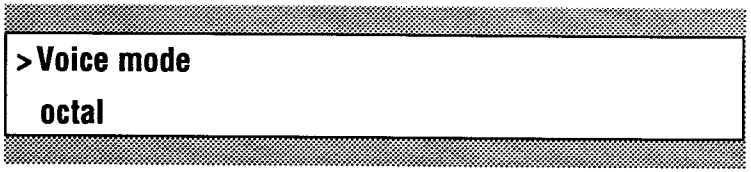

In the Split mode, you can choose a point on the DX keyboard where Voice A and Voice B are split (one part of the keyboard plays Voice A and another part plays Voice B.) Again, playing in the Split mode reduces the polyphony of both Voices to 8 notes each.

If the DX is set to Split mode, the Split Point screen will appear as you cycle thru the menus - this is where you set which note will mark the split between the DX Voices. You can set this point by moving the data entry slider, or by simply pressing the actual note down on the keyboard.




*See the next page about selecting Voice A and Voice B.*

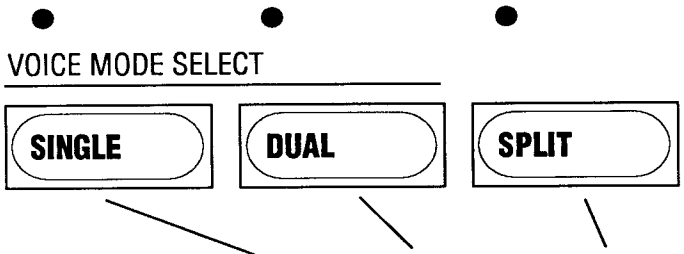
## Octal mode




In the Octal mode, you can play up to 8 DX Voices simultaneously. Please see the Octal mode chapter for a full explanation.

## How to select voices

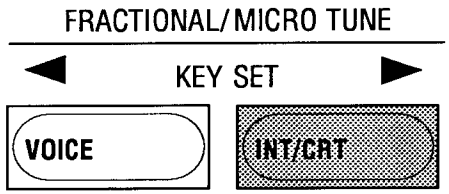
### On the DX7II




*Press the Voice mode select button that corresponds to the chosen ENGINE Voice mode. Use the "A/B" button to choose Voice A and Voice B.*

*If the Voice mode is set to Octal, press any one of these buttons to make it active. Use the "A/B" button to cycle thru Voices A to H.*

### On the DX7s

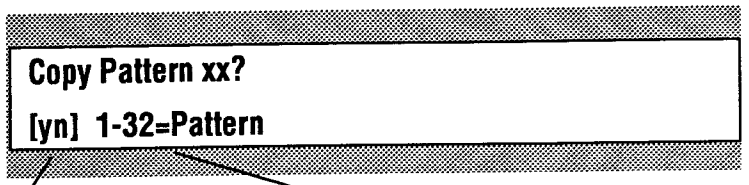



*Press the Voice button to activate the chosen ENGINE Voice mode.*

*Press this button repeatedly to choose Voices A and B in the Dual and Split modes, and to choose Voices A thru H in the Octal mode.*

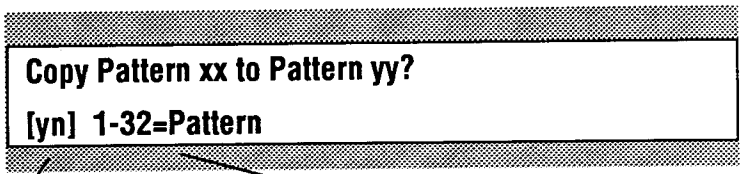







*press YES to continue (press NO to exit)*

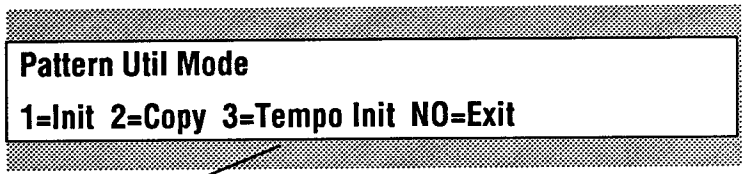
*press buttons 1-32 to select Pattern "xx"*




*press YES to copy Pattern (press NO to exit)*

*press buttons 1-32 to select Pattern "yy"*

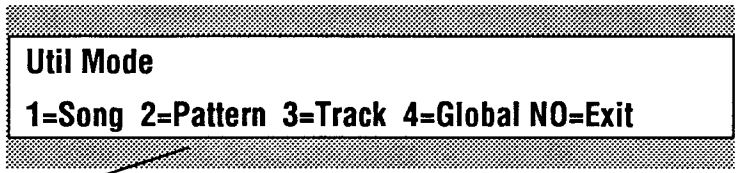
## Tempo Initialize




*press button 3 to select Tempo Initialize*

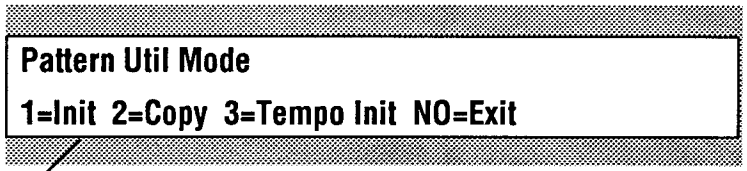
Another Pattern Utility is Tempo Initialize, which will remove any recorded tempo offset values.

# Pattern Utilities




*press button 2 to select Pattern Utilities*

## Pattern Initialize




*press button 1 to select Pattern Initialize*

One of the Pattern Utilities is Pattern Initialize, which is fully discussed in the Record Pattern chapter.

## Pattern Copy

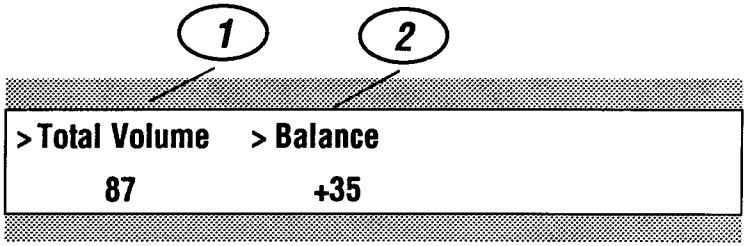



*press button 2 to select Pattern Copy*





## ENGINE menu 5




**1**

**>Total Volume**
**87**

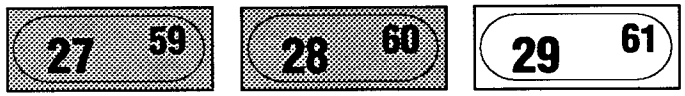
This parameter lets you set an overall volume for the DX Voices.

**2**

**> Balance**
**+35**

If your DX is set to Dual or Split Voice modes, you can use this parameter to adjust the relative volumes of Voice A and Voice B. Values below zero bias the volume towards Voice A, while values above zero bias the volume towards Voice B ( "zero" is an equally balanced volume.)

# DX voice menus




*press button 29 to cycle thru the DX voice menus*

## ENGINE menu 1

| DX | >A | >B | >C | >D | >E | >F | >G | >H |
|---|---|---|---|---|---|---|---|---|
| Volume | 92 | 128 | 102 | 65 | 128 | 128 | 0 | 128 |

If your DX is set to the Octal Voice mode, this menu will appear as you cycle thru the button 29 ENGINE menus. The DX Volume menu is a "mixer" for all 8 DX Voices. Simply select each individual Voice and adjust the volume (from 0 to 128).





# Song Utilities

```
Util Mode
1=Song 2=Pattern 3=Track 4=Global NO=Exit
```

***press button 1 to select the Song Utilities***

```
Song Util Mode
1=Init NO=Exit
```

*press button 1 to select the Song Init utility*

The Song Initialize Utility will erase the selected Song.

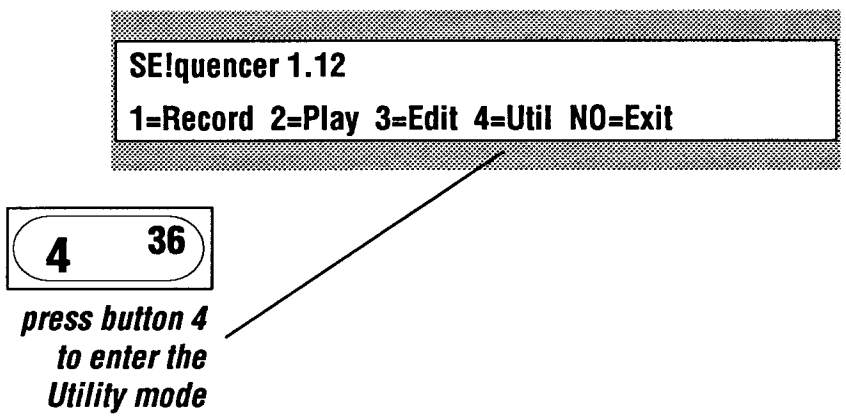
```
Init Song xx?
[yn] 1-10=Song
```

*press YES to erase Song (press NO to exit)*

*press buttons 1-10 to select Song*

# Utility mode

*SE!quencer's final mode is the Utility mode, where you will find utilities for erasing Songs, initializing or copying Patterns, and modifying Tracks by quantizing note, stripping controller data from them, or copying them with an offset value.*








## ENGINE menu 2

| NOTE | >A | >B | >C | >D | >E | >F | >G | >H |
|---|---|---|---|---|---|---|---|---|
| Shift | 0 | 0 | -1 | +2 | 0 | -3 | 0 | +4 |

The Note Shift menu remains exactly as it was before E!, with the exception that, in the Octal mode, all 8 DX Voices can be shifted. Please refer to your Yamaha DX7II/DX7s owner's manual for more information.

*Use the Note Shift parameter in conjunction with the Transpose parameter (in the Track Assign menu) to extend the amount of transposition possible for each DX Voice.*

## ENGINE menu 3

Micro tuning >Table select
Twelve tone 09

The Micro Tuning Select menu remains exactly as it was before E!, with the exception that E! expands the internal memory for user-defined (twelve tone) tunings. Please see the Expanded Micro Tuning chapter for a full explanation.

For more information about the Micro Tuning Select menu, please refer to your Yamaha DX7II/DX7s owner's manual.

## ENGINE menu 4

| Micro- | >A | >B | >C | >D | >E | >F | >G | >H |
|---|---|---|---|---|---|---|---|---|
| Tuning | on | on | off | off | off | off | on | off |

If you are in any Voice mode other than Single, and if you have selected a Micro Tuning other than Preset 1 (the "normal" DX scale), you can turn the alternate tuning on or off for every active DX Voice.

## ENGINE menu 5

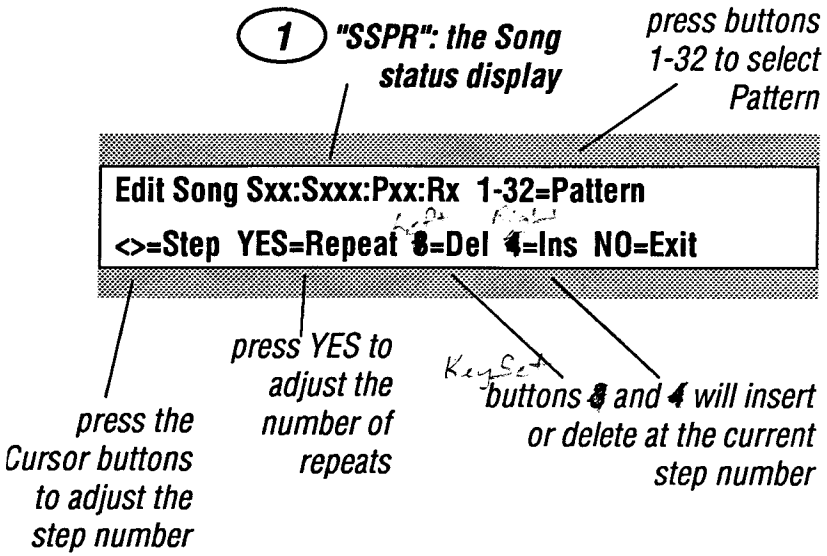
| DX | >A | >B | >C | >D | >E | >F | >G | >H |
|---|---|---|---|---|---|---|---|---|
| Polyphony | 8 | 4 | 2 | 2 | --- | --- | --- | --- |

If your DX is set to the Octal Voice mode, the DX Polyphony menu will appear as you cycle thru the button 29 ENGINE menus. With this menu, you can determine the amount of polyphony for each DX Voice.

What is "polyphony?" It is the total number of notes that the DX can play at one time - once you exceed the limit, notes that you play will cut out sharply (and unpleasantly.) On both the DX7II and the DX7s the polyphony







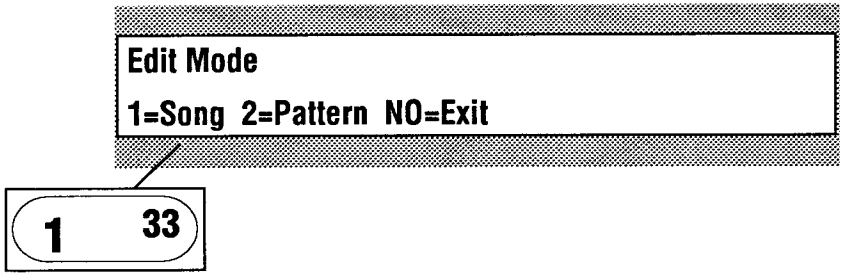

## 1 Song xx: Step xxx: Pattern xx: Repeats xx

The familiar "SSPR" display shows you exactly where you are within a Song. With Edit Song, you can quickly change the Pattern number at any step, or insert/delete a step within the Song. Follow the diagram to choose the step number, the Pattern number, and the number of repeats.

- Pressing **the LEFT Key Set button will insert a new step at the current step position.** All later steps will be "pushed back" to make room for this new step.

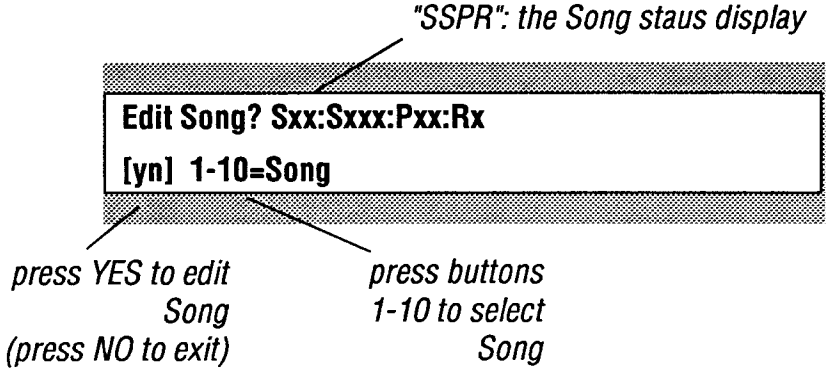
- Pressing **the RIGHT Key Set button will delete the current step.** All later steps will be "moved ahead" to fill the place left by the deleted step.

# Editing a Song




***press button 1 to edit a Song***

After you've recorded a Song, you can make minor alterations to it in the Edit Song mode (you can even use Edit Song to create a new Song from scratch.) It is important to remember that SE!quencer will not "play" while you are editing a Song. Instead, you will simply look at the Patterns and steps that make up a Song and adjust them one step at a time.





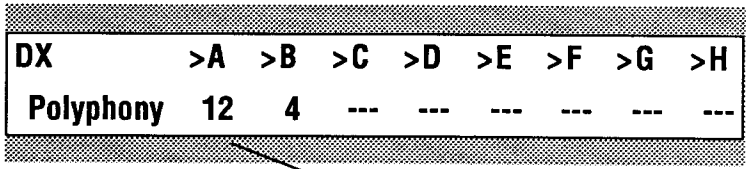



is a total of 16 notes, which could lead to problems in the Octal Voice mode, where you can play up to 8 different voices at the same time. To avoid any problems, you can use the DX Polyphony menu to manually adjust the total number of notes for each Voice, according to how many notes per Voice you are expecting to use.

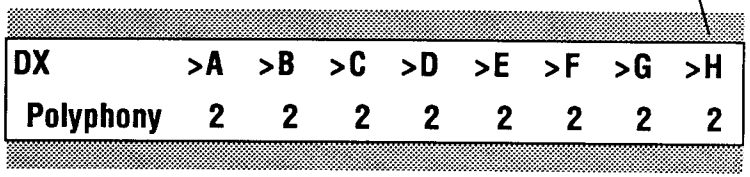
You can also use E!s exclusive Dynamic Voice Allocation as another way of adjusting the DX's polyphony in Octal mode. Dynamic Voice Allocation is explained further on in this section.

*In order to hear any sound from a DX Voice, at least 2 notes must be allocated to it in the Polyphony menu.*

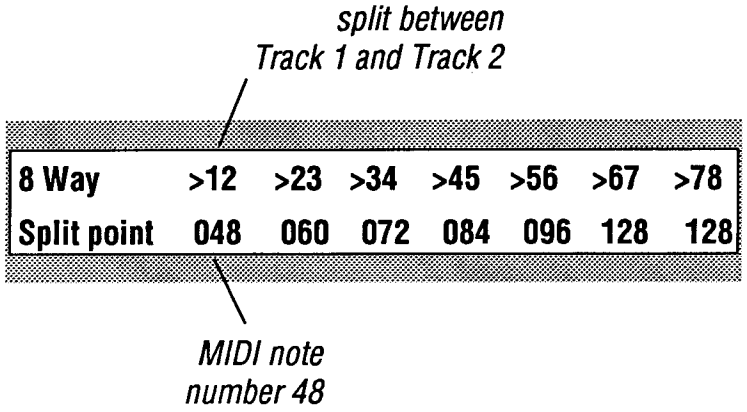
*These examples show two possible ways to manually set the DX Polyphony*




*E! biases polyphony in a descending order, from Voice A to Voice H*



## ENGINE menu 6




If you have the ENGINE Performance mode set to 8 Way Split, the 8 Way Split Point menu will appear as you cycle thru the button 29 ENGINE menus.

With the 8 Way Split Point menu you can set up to 7 different split points between Tracks 1 thru 8 of ENGINE - the instrument (DX Voices or MIDI) that will be playing each Track depends on the Destinations that you set for them.

The number pairs on the top row of the LCD screen tell you which split point you are adjusting ("12" is the split point between Tracks 1 and 2, "23" is the split point between Tracks 2 and 3, and so on.) the values on the bottom row of the LCD screen are MIDI note numbers, with a range from 001 to 128.

To set a split point, simply adjust the MIDI note number underneath each Track Split number, beginning with Track 1/Track 2. Tracks cannot overlap, so each successive split between Tracks must be at a higher MIDI number than the previous one.





(1)

## Time = xx: xx: xx

*bar* *beat* *clock*

The Edit Pattern Time display shows you exactly where you are within the Pattern when you Step Record. Pressing the Key Set buttons will advance you to any point in the Pattern where you can record a note with amazing precision.

• Pressing the LEFT Key Set button will advance SE!quencer by one "tick" of the clock. A "tick" of the clock is the smallest timing measure in SE!quencer (exactly 1/24 of a quarter note.)

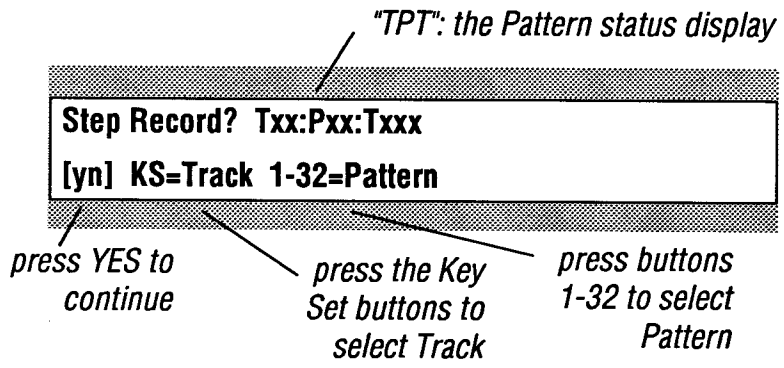
• Pressing the RIGHT Key Set button will advance SE!quencer by a "note". For example, if SE!quencer is set for 1/4 note increments (using the data entry slider), pressing the RIGHT Key Set button will advance the Pattern by 1/4 note.

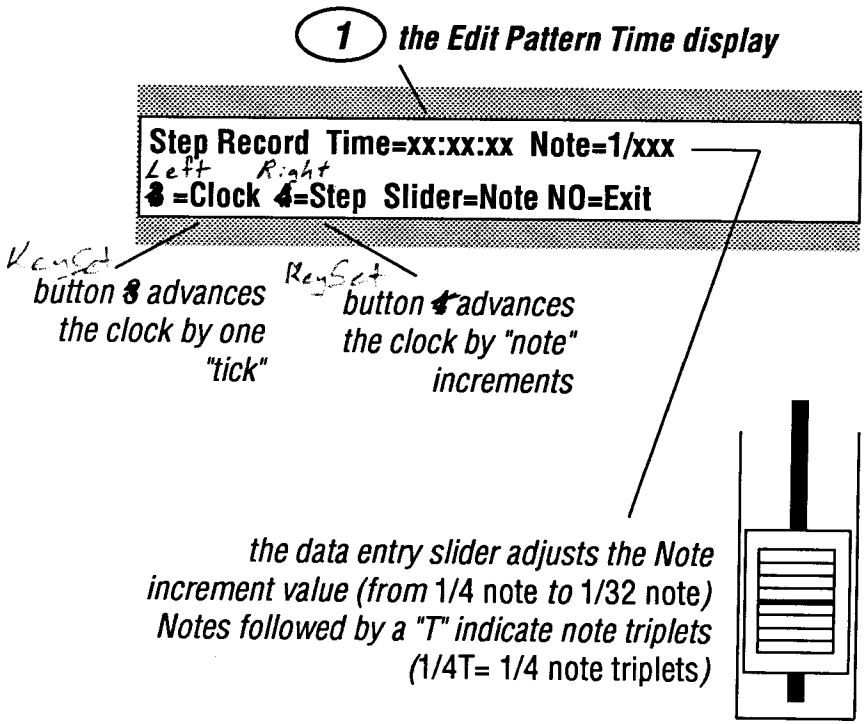
As you advance through the Pattern, notes that are played on the keyboard will be recorded into the Pattern at the time indicated on the screen. For example, assume you have a Pattern in 4/4 time. If you want to record a legato 1/4 note on the second beat of the first bar, you simply advance the clock until **TIME=01:02:01** At this point, just play the desired note and hold it down while advancing the clock until **TIME=01:03:01** Release the key and it's done.

*NOTE 1: when you Step Record a Track, ALL previously recorded notes on that Track will be erased.*

*NOTE 2: SE!quencer will not record any controller data while in Step Record mode.*

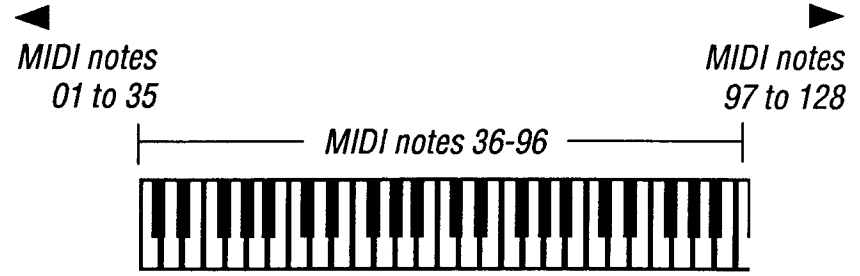
## Step Recording a Pattern



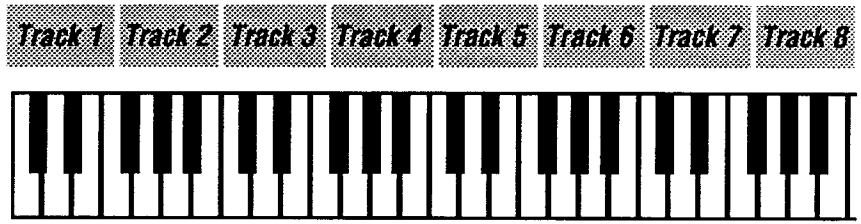





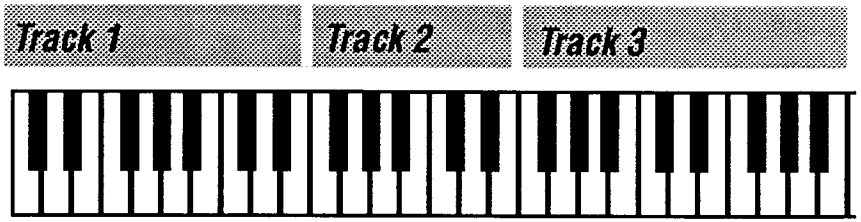



These are two possible ways to set the Split Points

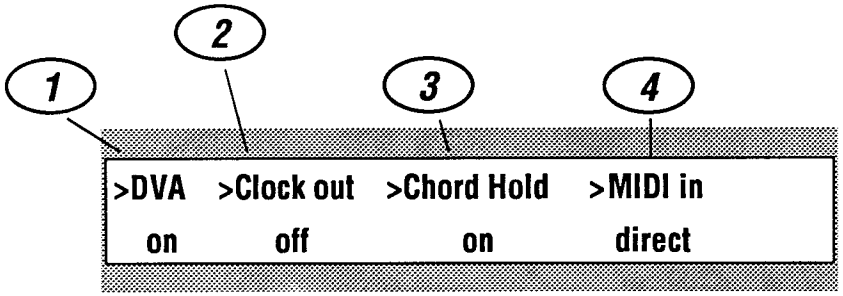



All 8 Tracks can be played on the DX keyboard




Tracks 4-8 are set out of the range of the DX keyboard

## ENGINE menu 6




1

| >DVA | >Cl |
|---|---|
| on | |

This parameter will turn on E!'s exclusive Dynamic Voice Allocation (DVA), which enhances the DX's polyphony by dynamically distributing notes only when a Voice is actually playing. You can also use this parameter in conjunction with the DX Polyphony menu to manually fix the polyphony of some Voices and leave the rest to be distributed by DVA.

However, there are times when DVA isn't the best choice in setting the DX's polyphony. Here are a few suggestions on when to use DVA and when not to:

**• When to use DVA**
Use DVA when you plan on playing Voices A thru H in the Octal mode, but not all at once. One such occasion might be in a Song created in SE!quencer - there may be times when only Voices A or B are playing, and others when only Voice C or D plays. If you use DVA, all the Voices will have the maximum polyphony possible.

**• When not to use DVA**
If you use DVA in a situation where many DX Voices are playing at the same time, notes will be stolen with an audible "popping" sound. The best thing to do in this case is to set the DX's polyphony manually.

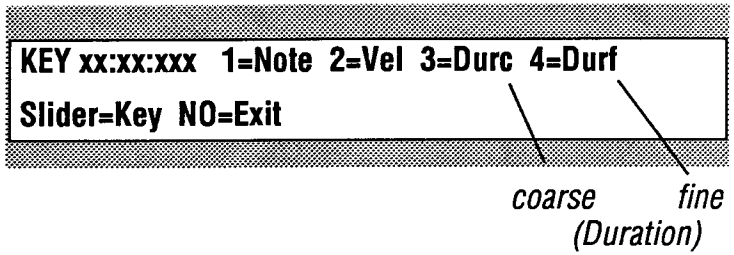
**• When to use DVA with manually set polyphony**
There may be times when you play one Voice all of the time and the rest just once in a while. In this case, you





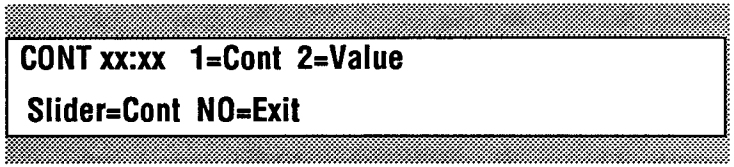
## Editing a KEY event

*buttons 1-4 let you adjust specifc types of data*



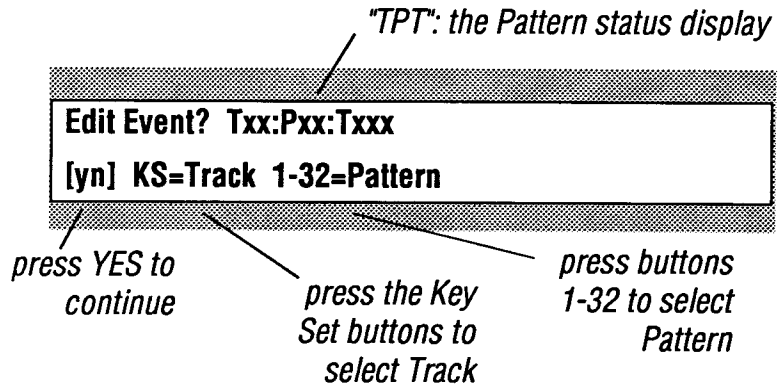

## Editing a CONTroller event

*buttons 1 and 2 let you adjust specific types of data*

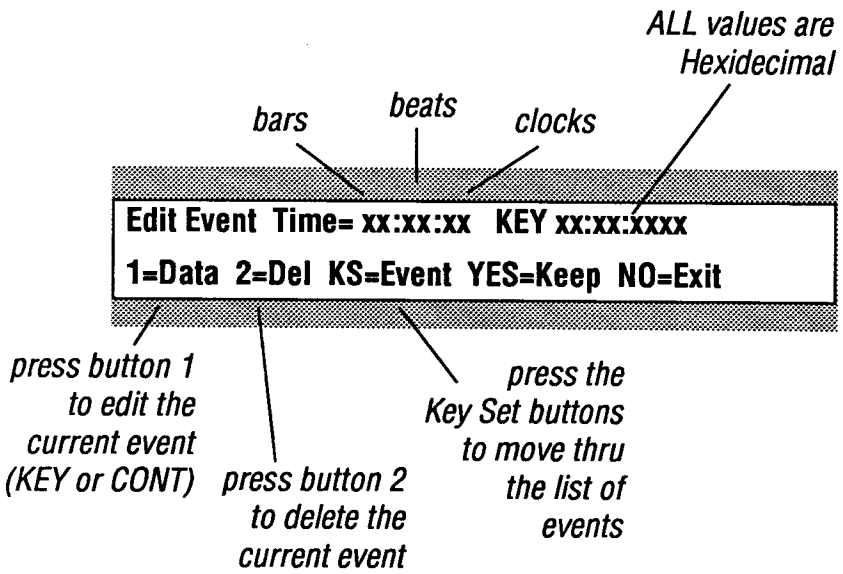



*AT=After touch*
*MC=MIDI controller*
*MW=Mod wheel*
*BC=Breath controller*
*FT=Foot controller*
*PT=Portamento time*
*DS=Data slider*
*MV=MIDI volume*
*C1=CS1*
*C2=CS2*
*F1=FC1*
*SP=Sustain pedal*
*PP=Portamento pedal*
*KH=Key hold*
*SF=Soft pedal*
*FS=FS2*
*PB=Pitch bend*

# Event editing a Track




You can use this menu to edit individual events on each Track of a Pattern. Just use the Key Set buttons to advance you thru each event and then press button 1 to actually edit a specific type of data (Key on/offs and Controllers.)








can set the polyphony of one Voice manually and leave the rest up to DVA. For example, if you manually set 6 notes of polyphony to Voice A, that will leave 10 notes for DVA to distribute to your other DX Voices.

2

**>Clock out off**

This parameter will turn on ENGINE's MIDI Clock OUT, which will send a MIDI clock number (tempo) to any external MIDI drum machine or sequencer. Use this parameter to keep your other MIDI devices in sync with Player and SEIquencer.

3

**>Chord Hold on**

If you are in the Chords or Player Performance mode, you can use this parameter to hold the chord or PlayerSong without having to keep your finger on the key.

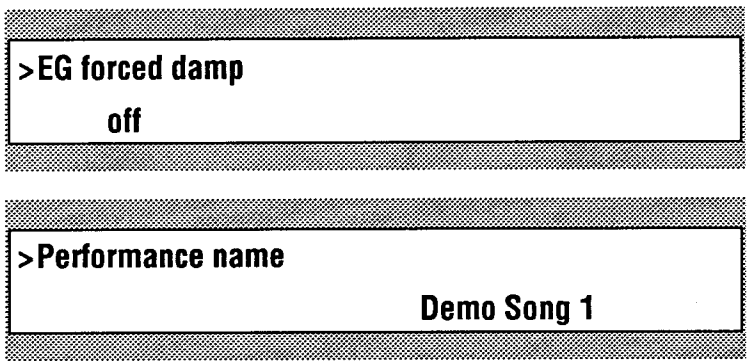
4

**>MIDI in direct**

With E!, MIDI data can be received by the DX in one of two modes; Normal mode and Direct mode. Of the two modes, Normal mode is most like the DX7II's original MIDI implementation. Each mode has specific strengths (and weaknesses), so studying the following descriptions should help you to choose the one that best fits your needs for each performance.

In Normal mode, all data entering the DX's MIDI IN port will be processed as though it was played on the DX7 keyboard itself. This closely resembles the DX's original MIDI implementation with the exception that the DX's Split Voice mode no longer supports the input of MIDI data on 2 separate channels. Instead, E! gives you enhanced MIDI input on a number of different channels, using the Direct mode.

The Direct mode allows you to tap the full power of the polytimbral E!quipped DX7II/DX7s. In this mode, all incoming data is played on the ENGINE Track number that matches the MIDI channel number of the incoming data. For example, data coming in on MIDI Channel 1 is played by ENGINE Track 1, which in turn can be set to play any DX Voice or any MIDI Channel. To ignore a MIDI channel, simply turn that Track Destination OFF. Bulk system data is not allowed in this mode, but you can make parameter changes and "edit buffer" transfers to any of the 8 DX Voices if you are in Octal mode.

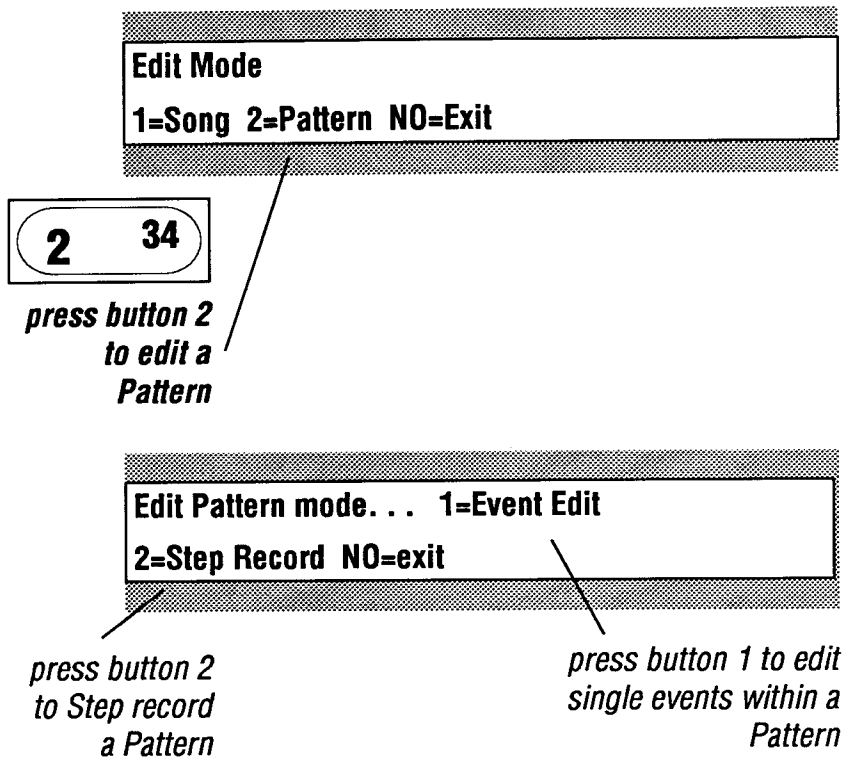



These two menus remain exactly as they were before E! Please refer to your Yamaha DX7II/DX7s owner's manual for more information.





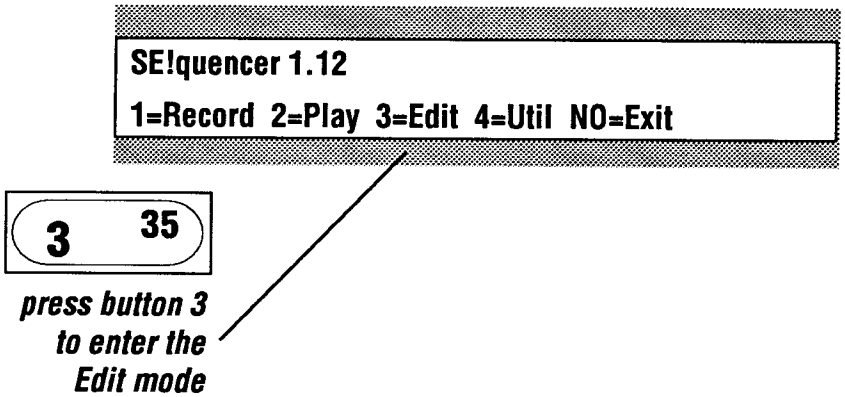
# Editing a Pattern




With the two Edit Pattern modes you can slowly advance SE!quencer through a Pattern, making it easy to record parts that might be extremely precise (even impossible for you to play at full speed), or to selectively pick out individual notes and edit specific information.

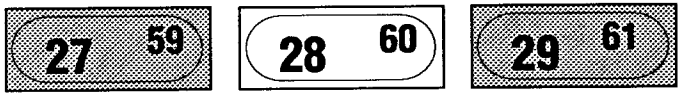
# Edit mode

*Patterns and Songs can be modified in part or even created in whole in the Edit mode. The Edit mode is like the Record mode in that notes that you play on the keyboard are recorded for later playback. However, SE!quencer's "clock" does not move forward by itself to progress you through the Pattern or Song while recording. In this mode,* ***you*** *advance the clock manually for extremely accurate placement of notes in a Pattern or to insert/delete steps within a Song. The next few pages show you how:*

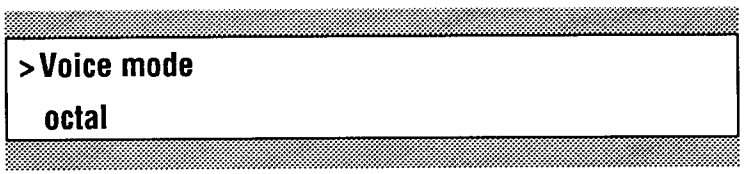


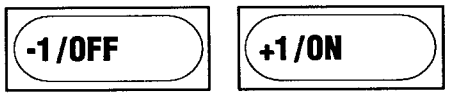
# Octal mode

*You can play up to 8 DX Voices at a time in the Octal mode, each one having its own Track assignment, adjustable Volume, Transpose value, and Velocity Curve/Level. Just follow the diagrams:*




*press button 28 to access the Voice mode menu*




*press YES or NO to change Voice modes and select Octal mode (the data entry slider will not allow access to Octal mode)*



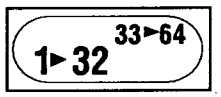


## Special Play mode controls

*these features are also active in the Record mode*



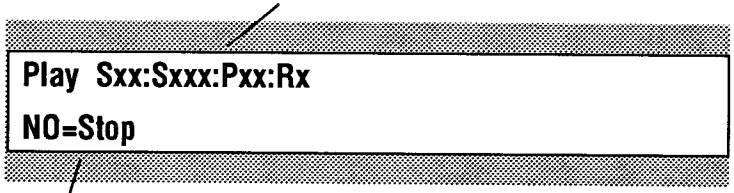

*The PERFORMANCE button can be used to mute the "click track"*




*When you are playing a Pattern, this button will mute all Tracks except the one that is currently showing on the "TPT" display (the LCD screen will read **Solo**) Use the Key Set buttons to change the Solo Track.*

*For more information, see "Live performance with SE!quencer" in the SE!quencer appendix*

*"SSPR": the Song status display*




*press NO to stop playing*

Unlike a Pattern, a Song will not loop itself. The LCD screen displays the "SSPR" of the current Song you are playing.

Please note that for a Song to be played back correctly, the Patterns that were used to create it must not have been altered by mistake and they must also be in SE!quencer's memory. Photocopy the Song chart in the Supplemental booklet and use it to organize your Songs.



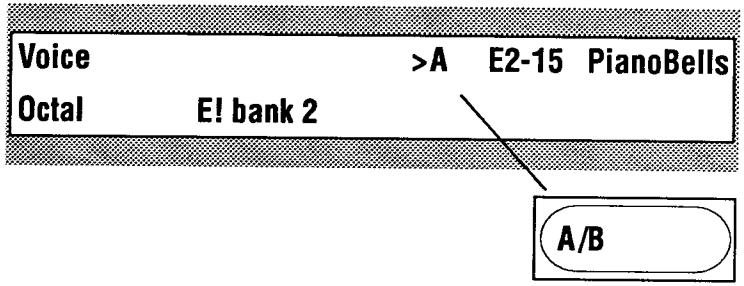


# How to select voices on the DX7II

VOICE MODE SELECT



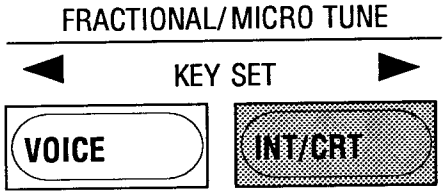

*press any one of the Voice mode select buttons*



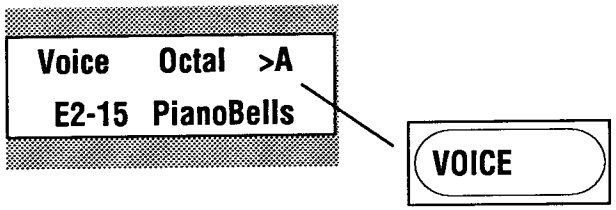

*press the "A/B" button repeatedly to cycle thru DX Voices A to H*

*NOTE: there will be a slight delay after you select a patch number in the Octal mode*

# How to select voices on the DX7s




*press the Voice button*



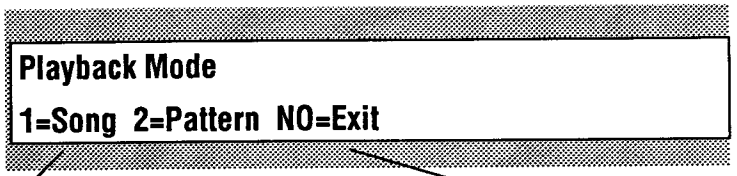

*press the Voice button repeatedly to cycle thru DX Voices A to H*

*NOTE: there will be a slight delay after you select a patch number in the Octal mode*

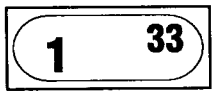




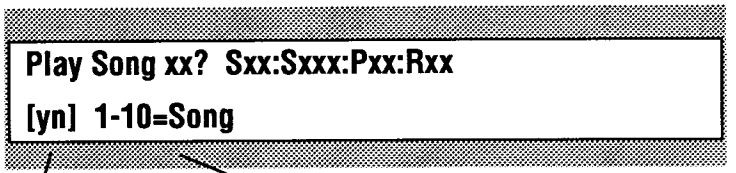
# Playing a Song




*press NO to exit*

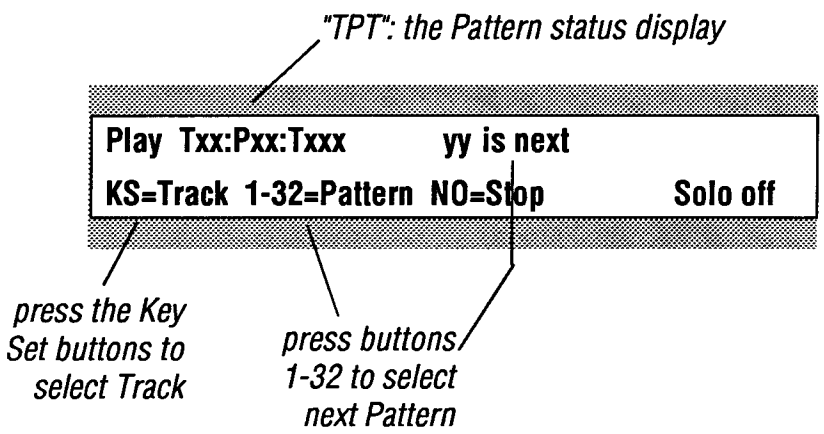



***press button 1 to play a Song***




*press YES to begin playing (press NO to exit)*

*press buttons 1-10 to select Song*



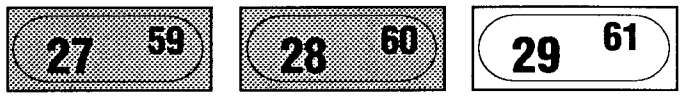

In the Play mode, a Pattern continuously loops itself until you press NO to stop, or until you select another Pattern. The LCD screen will display the next selected Pattern. You can play any of the 32 Patterns, in any order, for any amount of time.





# Adjusting Octal mode voices

*Use the ENGINE menus under button 29 to adjust the Volume, Polyphony, Note shift, and Tuning of each Octal mode voice.*




| DX | >A | >B | >C | >D | >E | >F | >G | >H |
|---|---|---|---|---|---|---|---|---|
| Volume | 92 | 128 | 102 | 65 | 128 | 128 | 0 | 128 |

| DX | >A | >B | >C | >D | >E | >F | >G | >H |
|---|---|---|---|---|---|---|---|---|
| Polyphony | 8 | 4 | 2 | 2 | --- | --- | --- | --- |

| NOTE | >A | >B | >C | >D | >E | >F | >G | >H |
|---|---|---|---|---|---|---|---|---|
| Shift | 0 | 0 | -1 | +2 | 0 | -3 | 0 | +4 |

| Micro- | >A | >B | >C | >D | >E | >F | >G | >H |
|---|---|---|---|---|---|---|---|---|
| Tuning | on | on | off | off | off | off | on | off |

# Octal mode and the Track Assign menu

As you know, the Destination of a Track can be any DX Voice or MIDI channel - if your DX is in the Octal mode, the Destination will read "DX A" thru "DX H" instead of just "DX". This means that any Track can be set to play any DX Voice (A thru H.) By using the Track Assign menu, you can also set a separate Transpose and Velocity Curve/Level for each Voice.

Please note that for any Octal mode DX Voice to be audible, you must have at least 2 notes of polyphony per Voice and the volumes of each Voice must be set (see the DX Voice menus under ENGINE button 29.)

| TR | >Dest | >Transpose | >Patch | >Curve | >Level |
|---|---|---|---|---|---|
| 03 | DX C | +12 | --- | POS1 | 06 |

# Poly-unison and Random pitch

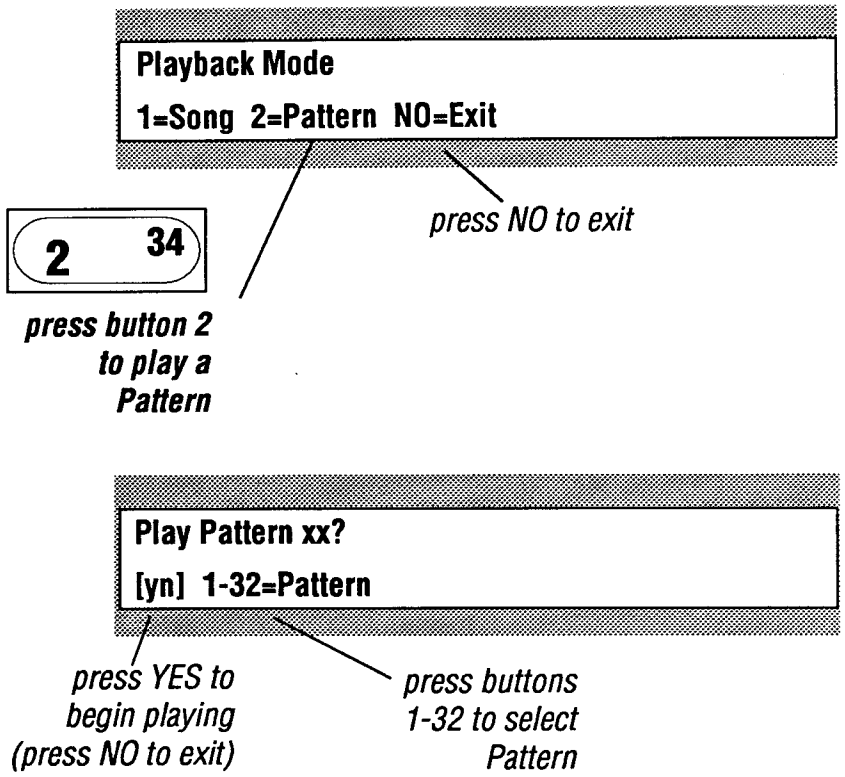
The Poly-unison and Random pitch parameters of your DX are slightly different in the Octal mode (if you are unfamiliar with these two parameters, please refer to your DX7II/DX7s owner's manual for an explanation.) If you select Poly-unison, your total polyphony will be reduced to 8 notes (not 4, as in any other DX Voice mode.) Also, if you use the Random pitch parameter you may notice that its effect will seem richer and more natural sounding than in the other DX Voice modes.

For those who are familiar with Grey Matter's E! for the original DX7, these are otherwise known as the Voice Stacking and Random Detune features.





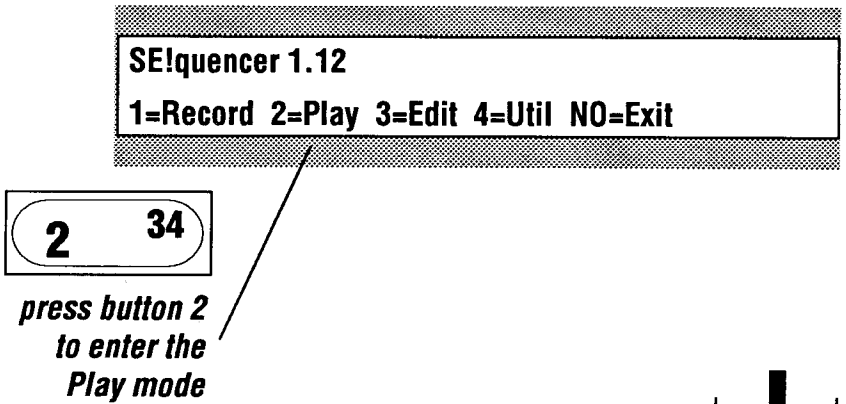
# Playing a Pattern



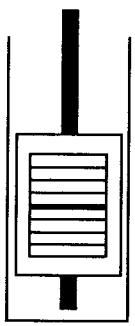

When you play a Pattern, the "click track" will be played along with whatever you recorded. However, once you no longer need the "click track" for timing you can mute it by using one of the special Play mode control buttons (discussed at the end of this chapter.) The lead-in will not be muted, and can only be removed by using the "Erase lead-in" parameter after recording a Track.

# Play mode

*Once you have a Pattern or Song recorded, you can play them back at any time while you are in SE!quencer. You can even play groups of Patterns together for any length of time without a break or delay between them, making SE!quencer even more versatile during a live performance.*
*The diagrams will show you how:*




***press button 2 to enter the Play mode***



*use the data entry slider to adjust tempo when in the Play mode*





## Octal mode and MIDI input

Of course, you can drive the Octal mode's 8 DX Voices with external keyboards and sequencers through the DX's MIDI IN port. However, there are some special ENGINE features for using MIDI input while the DX is in the Octal mode. See the discussion of the Direct MIDI input mode on page 36.

## Panning Octal mode voices on the DX7II

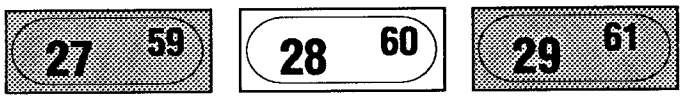
The normal Pan feature is disabled when you are in the Octal mode; however, there is a "pseudo-Pan" available, allowing you to specify which audio channel a DX Voice will be output to. This "pseudo-Pan" is done by the allocation of notes using the DX Polyphony menu.

To activate the "pseudo-Pan", press the PAN button while you are in the Performance mode. Now, when you play, the DX Voices that have been allocated the first 8 notes of polyphony will be voiced by one audio channel, while the Voices that have been allocated the second group of 8 notes will be voiced by the other audio channel. By experimenting with and adjusting the DX Polyphony settings, you can have single or group Voices in true stereo. (For more precise panning, make sure that Dynamic Voice Allocation is OFF)

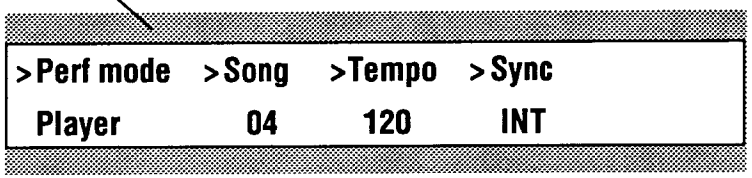
# Performance modes

*With E!'s 8 Performance modes, you can realize the potential of ENGINE as a 16 track MIDI event processor - from the Floating Split and 8 Way Split, to the amazing Tonal Processor that makes Chords and Player possible.*

*NOTE: the Track Assign menu plays an important role in ALL Performance modes. It is advised that you first have a complete understanding of its functions before continuing.*



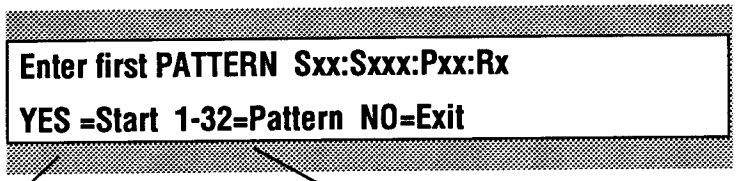

*press button 28 until screen reads*







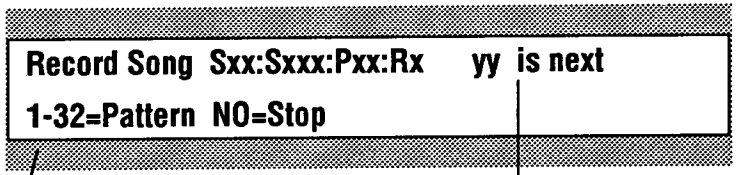

*Use the Song chart in the Supplemental booklet as an aid in organizing your Songs and Patterns*




*press YES to begin recording Song*

*press buttons 1-32 to select Pattern*

+1/ON




*press buttons 1-32 to choose next Pattern*

As SE!quencer is recording the first Pattern of the Song, you can choose the next Pattern to be recorded by simply pressing the Pattern number button. If you want a Pattern to be repeated a number of times, just do nothing and the "SSPR" display will show you the number of repeats (after 7 consecutive repeats, the step number will advance and the repeat number will start again at 0.)

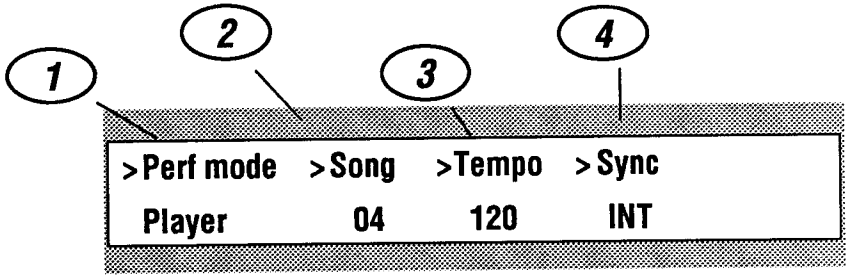
If you want your Song to have a lead-in, you must start with a Pattern that still has its lead-in beats intact.

-1/OFF

Press NO at any time to stop recording the Song.








1



**>Perf mode**
**Normal 1**

Normal1 is the original DX7II/DX7s Performance mode. In this mode, the keyboard responds exactly like a non-E!quipped DX7II/DX7s - with the exception that pressing the Foot Switch (2) will switch the active keyboard Track from Track 1 to Track 2 (see the ENGINE menus under button 27 to set the Foot Switch Select to "ENGINE.") The active keyboard Track will switch back to Track 1 when you let go of the Foot Switch.

Using this mode, you can alternate between any two patches (DX or MIDI) and still have the freedom to play the entire DX keyboard.



**>Perf mode**
**Normal 2**

Normal2 mode is exactly the same as Normal1, except that pressing the Foot Switch(2) or the ENGINE button will cycle the active keyboard Track thru all 16 Tracks (as long as they have a Destination - a Track that is OFF will reset the cycle back to Track 1.)



**>Perf mode**
**Track HI**

In this mode, all notes are played by Track 1, while the highest current note is also played by Track 2.

**>Perf mode FlotSplit**

In the Floating Split mode, any notes played by your left hand will voiced on Track 1, while any notes played by your right hand will be voiced by Track 2. This differs from a fixed split because, in this mode, *the split point dynamically moves up and down the keyboard as you play.* Here's how it works:

When playing, E! will constantly monitor the highest current note (sustained notes don't count.) Any notes within a 9 note interval down from the highest note are judged to have been played by your right hand (which will be voiced by Track 2), while any notes below this "soft split" point will be judged to have been played by your left hand (which will be voiced by Track 1.)

**>Perf mode 8 Way Split**

The 8 Way Split mode lets you play up to 8 separate Tracks on the DX keyboard. Please see the discussion of the 8 Way Split Point menu for a full explanation (button 29 ENGINE menus.)

**>Perf mode Chords**

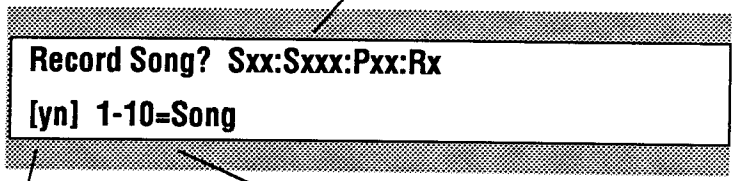
Both Chords and Player are discussed in separate sections of this chapter.

**>Perf mode Player**





(1) ***"SSPR": the Song status display***




*press YES to continue (press NO to exit)*

*press buttons 1-10 to choose Song*

(1)

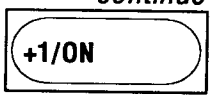
## *Song xx: Step xxx: Pattern xx: Repeats x*

### S09: S107: P24: R2

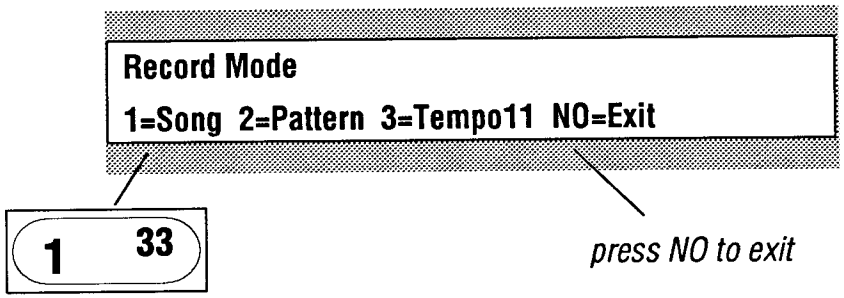
*read as "Song 9 has two repeats of Pattern 24 at step 107."*

The Song status display shows you everything you need to know while you are recording a Song. Only the Song and Pattern numbers can be adjusted - the step value and the number of Pattern repeats change in real-time as you record. Follow the diagrams to select the Song number (1 thru 10) and the Pattern numbers (1 thru 32).

*press YES to continue*



# Recording a Song




Recording a Song with SE!quencer is even simpler than recording a Pattern - all you really do is play various Patterns in real-time while SE!quencer automatically records them together as a Song. Internally, SE!quencer can store up to 10 different Songs at one time. The Song numbers correspond to the first 10 patch select buttons (Song 1= button 1, Song 2= button 2, . . . Song 10= button 10.)

Any number of the 32 Patterns can be combined to make a Song. A Pattern can also be repeated consecutively within a Song.

While the length of a Pattern is measured in bars, a Song's length is measured in *steps*. **Each Pattern change within a Song is equal to 1 step.** [Repeats of the same Pattern are a little different: up to 7 consecutive repeats of the same Pattern are considered to be 1 step. Any more consecutive repeats than 7 will simply advance the Song another step.] A Song can have a total of 256 steps.

Just follow the diagrams to record a Song:





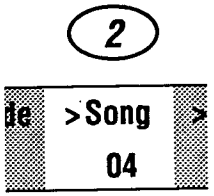


>Perf mode

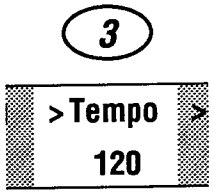
SE!quencer

Choose the SE!quencer mode when you want to play a Song or when you want to store a Song into a Performance, both of which are explained in the SE!quencer Appendix.

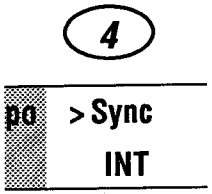
You do not have to set the Performance mode to "SE!quencer" in order to enter the SE!quencer program.




If you are in the Chords, Player, or SE!quencer mode you can use this parameter to choose any one of the 10 Songs for each Performance mode.




If you are in the Player or SE!quencer mode, the Tempo parameter will be adjustable for each Song. The Tempo range is from 77 to 204 beats per minute.



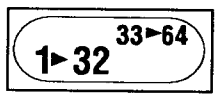

If you are in Player or SE!quencer mode, the Sync parameter allows you to choose whether the DX will play at the internally generated tempo (INT), or follow an external MIDI clock for its tempo (EXT). *When Sync is set to EXT, the external MIDI device (drum machine, sequencer etc.) must also provide Start/Stop commands.* Also, the MIDI Clock out parameter (button 29 ENGINE menus) will not function when Sync is set to EXT.

Please note that E! does not support MIDI song position pointer, or MIDI time code.

# Special controls for Performance modes

| Foot switch | >Select | >A | >B |
|---|---|---|---|
| (64-67) | ENGINE | --- | --- |

If you have the Foot Switch(2) set to ENGINE you can use it as a Start/Stop swicth in Player and SE!quencer modes. It can also be used in Normal1 and Normal2 modes as a Track selct switch.



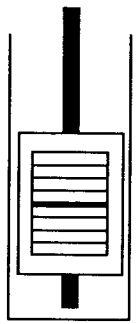

*the ENGINE button*

If you don't have a Foot Switch, you can use the ENGINE button as a Start/Stop or Track select in the various Performance modes.





**Record Tempo R=2**
**[yn] Offset=+20 Slider=offset 1,2,3=Range**



*use the data entry slider to record the Pattern Tempo offset*

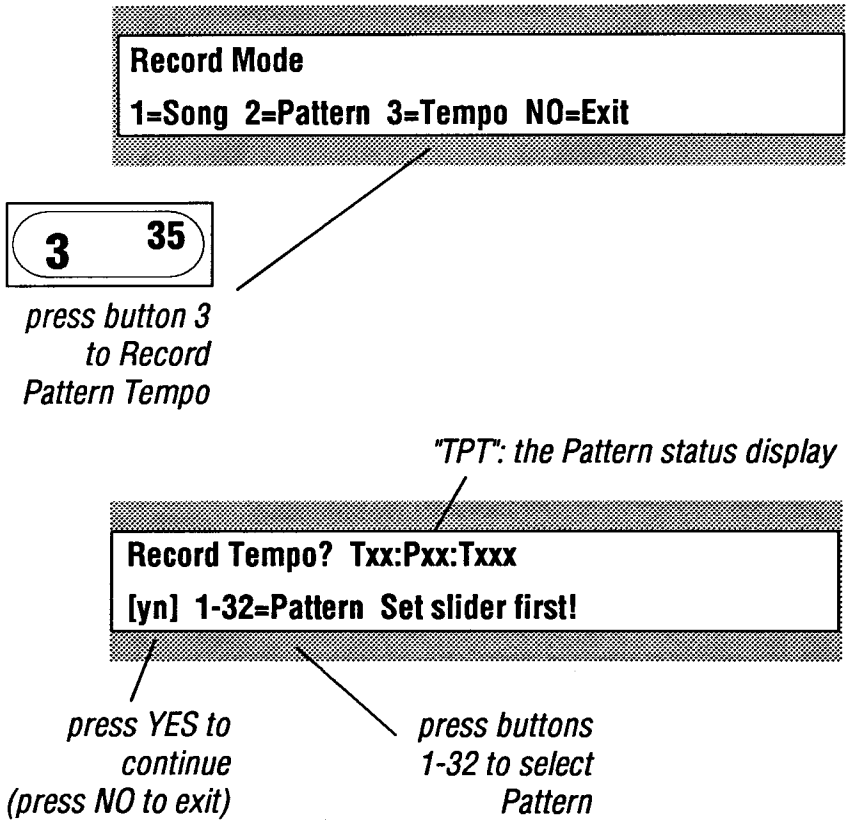
*buttons 1,2, and 3 will let you select the Range of the Tempo offset:*
*1=Narrow (+3 to -4)*
*2=Medium (+15 to -16)*
*3=Wide (+63 to -64)*

Any changes that you make to the tempo (using the data entry slider) will be recorded along with the Pattern. You can set a static offset value (one that doesn't change) or you can move the slider up and down while you are recording and change the offset live!

When you record a tempo offset for a Pattern, that Pattern will become a ***Tempo Key*** - any Pattern playing after the Tempo Key will be also be offset with the value that was recorded at the very end of the Tempo Key. The overall tempo of the following Patterns will remain that way until you play ***another*** Tempo Key, which will reset the offset tempo to a new value.

If you want to revert a Pattern back to its original tempo, there is a Tempo Initialize menu in the Pattern Utilities that will remove all recorded tempo data and return it to its original state.

# Recording Pattern Tempo



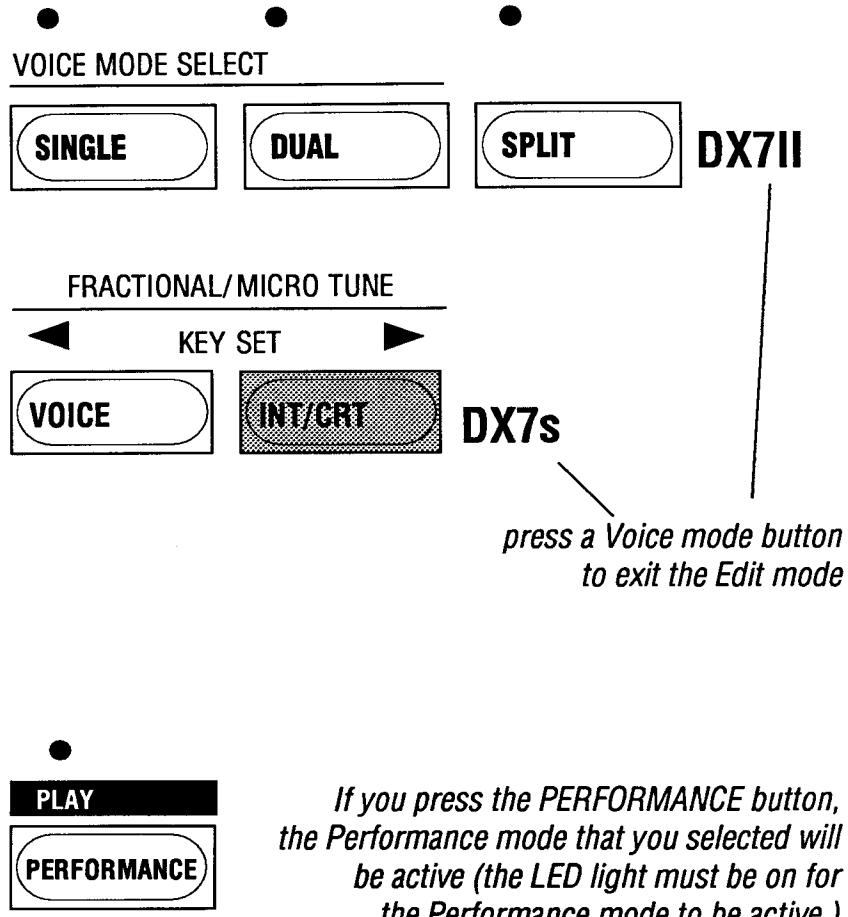

You can use the Record Pattern Tempo menu to record an offset value for the tempo of any Pattern. The advantage of recording an offset value rather than a specific tempo is that any tempo changes you make in this menu will be ***relative*** to the actual tempo that the Pattern is currently playing at.

The "help" screen tells you to **Set slider first!** - meaning that you should put the data entry slider in the middle of its range to avoid any abrupt changes in tempo when you begin to move the slider.





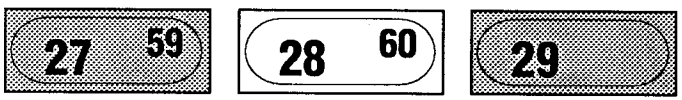
# How to activate a Performance mode



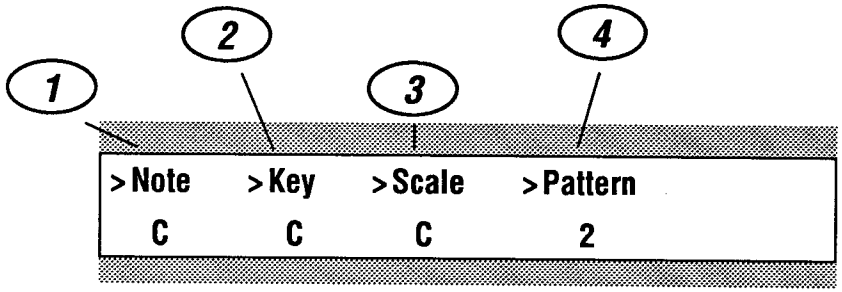

*If you press the PERFORMANCE button, the Performance mode that you selected will be active (the LED light must be on for the Performance mode to be active.)*

*NOTE: if you select a stored Performance, all data in the ENGINE edit buffer will be reset.*

## the Tonal Processor




*press button 28 repeatedly to cycle thru to the Tonal Processor*



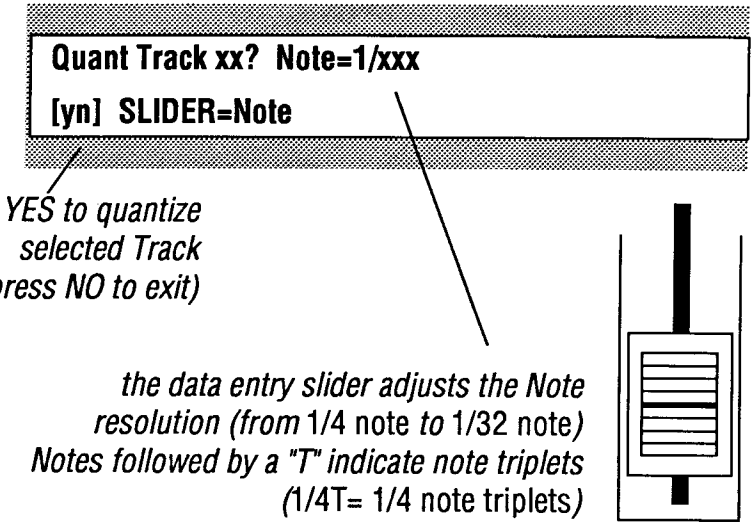

*You don't have to adjust each note for the Tonal Processor to work - do so only if you want to create complex chord progressions that are difficult to play live*

ENGINE's Tonal Processor is one of the most exciting Performance features of your E!quipped DX7II/DX7s since it is at the heart of E!'s auto-accompaniment modes: Chords and Player. By using this menu, you can program complex chord progressions in various musical styles - but playing them isn't complex, it's easy! Once you have the Tonal Processor set up exactly as you want it, all you have to do is press 1 key to trigger 16 Track chords.

Tonality is a fundamental, but complex, element of Western music theory. In order to use the Tonal Processor to its fullest capabilities, Grey Matter suggest that you explore some of the readings that are in the Bibliography at the end of this section.








*press YES to quantize selected Track (press NO to exit)*

*the data entry slider adjusts the Note resolution (from* 1/4 note *to* 1/32 note*) Notes followed by a "T" indicate note triplets (*1/4T= 1/4 note triplets*)*

## Erase lead-in

If you select the Erase Lead-in parameter, the lead-in that you set for this Pattern will be erased when you compile the Pattern. ***Please note that once a lead-in has been erased it cannot be recovered.*** Also, please note that this does not affect the Pattern's "click track" in any way.

## Strip Controllers

Strip Controllers will strip all controller data from the selected Track when you compile the Pattern. Controller data includes: pitch bend, modulation, after touch, sustain, portamento, and breath control information. When controller data has been stripped from the Track, only key on/off commands (the actual recorded notes) and velocity information will be left.

*See "Memory limits of SE!quencer" in the SE!quencer appendix for more information about using controllers when recording a Pattern.*

## Preview Track

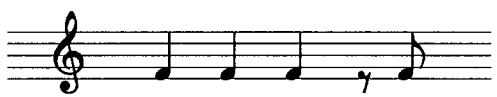
After you record each Track, SE!quencer will let you preview it by pressing button 1. *What you will hear is the newly recorded Track only, not every Track in the Pattern.* If you answer YES, your Track will be compiled with the Pattern and SE!quencer will automatically advance you to the next Track for recording (if you answer NO, SE!quencer will return you to the Record Track menu.) Repeat this process for recording every Track of the Pattern.

## Quantize Track

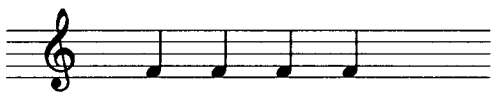
Quantize Track lets you correct the timing of a recorded Track by moving all notes to the nearest beat. However, unlike most other sequencers that will cut some notes off after quantization, SE!quencer's Quantize Track will not affect the duration of any notes. You can adjust the note resolution with the data entry slider (from 1/4 note to 1/32 note.) SE!quencer will let you preview the quantized Track before compiling it into the Pattern.

For example, if you want all notes on a Track to be exact 1/4 notes but some of the notes aren't quite "on beat", you can use Quantize Track to move all of the notes to an exact 1/4 note beat.

*Track before Quantize*

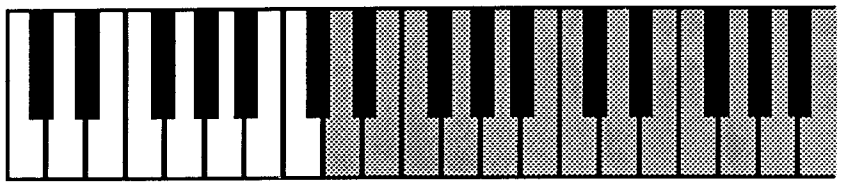


*Track after Quantize (1/4 note resolution)*









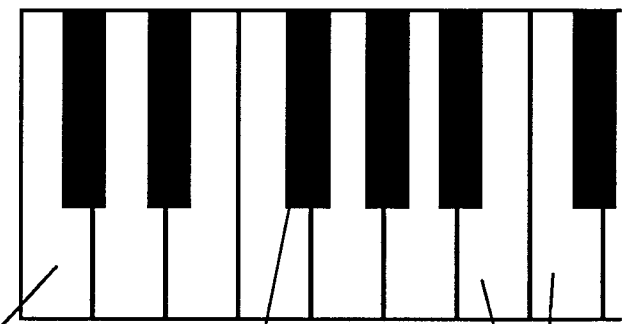
*the bottom octave of the keyboard activates the Tonal Processor*

The Tonal Processor is active only in the Chords and Player Performance modes. When in these two modes, the bottom octave of the DX's keyboard will be the Tonal Trigger - pressing a key there will "turn it on." Every note in this octave can be adjusted with ENGINE's Tonal Processor menu.

With the Tonal Processor you can selectively take any note and re-define it so that the Chords or Player pattern will play in a different key whenever you trigger that note (you can even assign a different pattern for each note!)

You can pre-program an entire song's chord progressions - complete with breaks! And every Track is also velocity sensitive for even more control over the dynamics of a song! Using the Tonal Processor in the Chords and Player Performance modes gives you both control and spontaneity!

*these are some possible settings for the Tonal Processor*

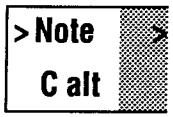


*this key plays a " C" in the key of C*

*this key plays an " F# " in the key of F#*

*these two keys play a " D# " in the key of C*

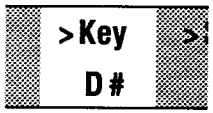
1




Use this parameter to adjust each note of the Tonal Processor octave (C1 to C2). Each note can have a separate setting for the three other parameters of this menu (Key, Scale, Pattern).

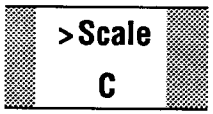
You can also set up an alternate tonality for each note. *The alternate settings are triggered only when that note is pressed simultaneously with another note that is beneath it.*
For example, if you have C alt set to play Pattern 2 with a D# in the C scale, these settings will not be triggered if you press the C2 note - however, they will be triggered if you press C2 along with any other note beneath it (B, A#, A, etc.)

2



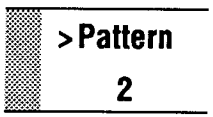

The Key parameter determines the "accidentals" in the current tonal voicing (key signature). Use this parameter to determine which notes are sharp (and flat).

3




The Scale parameter determines the "mode", or starting note, of the scale that will play in the KEY chosen. For instance, if you have chosen a Key of G, the Scales that are available are G,A,B,C,D,E and F#.

4




A separate Pattern can be set for each note. The number of Patterns varies per Song and per Performance mode (Chords or Player) - see the Supplemental booklet for a transcription of each Pattern.

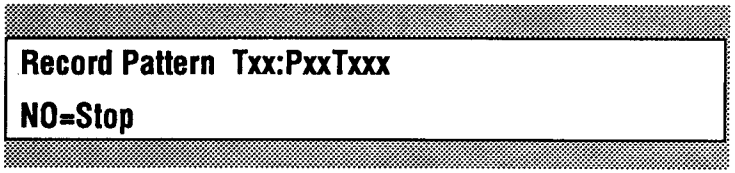




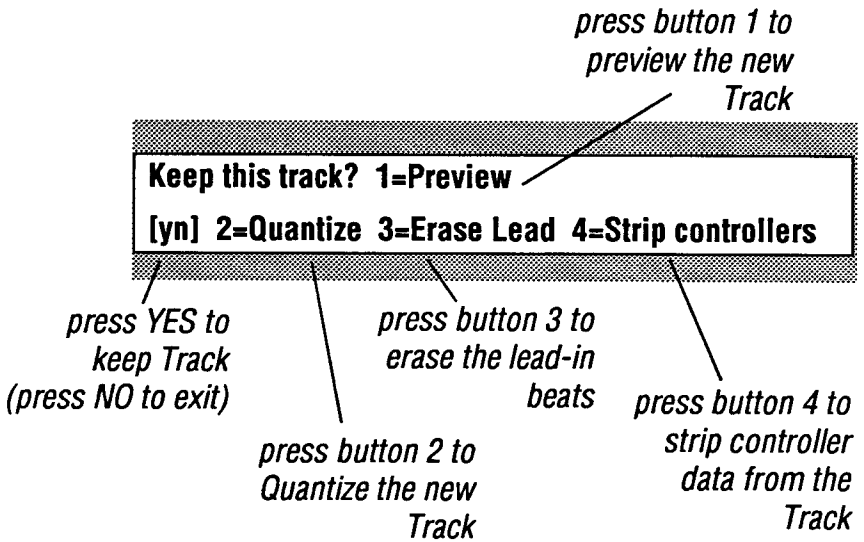
*press YES to begin recording*




**When you press YES, SE!quencer will play the "lead-in" beats that you set before starting to record the Track.** ***No notes played on the keyboard are recorded during the lead-in.*** If you have a MIDI drum machine sync'd to the DX Clock out, SE!quencer will automatically send it a start command to fill the lead-in. (see "MIDI Out sync" in the SE!quencer appendix.)




To record notes in SE!quencer, simply play whatever you want on the DX keyboard. SE!quencer will remember everything you do, including velocity and controller information (pitch bend, after touch, etc.)




See the next page for an explanation of this menu.

# Recording a Pattern

(1) *"TPT": the Pattern status display*

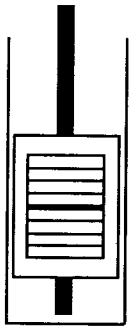
```
Record Pattern? Txx:Pxx:Txxx
[yn] 1-32=Pattern KS=Track
```

*press YES to begin recording (press NO to exit)*

*press buttons 1-32 to select Pattern*

*press the Key Set buttons to select Track*

*use the data entry slider to set the tempo*



(1)

## Track xx: Pattern xx: Tempo xxx

### T06: P21: T110

*read as "Track 6 of Pattern 21 at a Tempo of 110 beats per minute."*

The Pattern status display shows you everything you need to know while recording a Pattern. Just follow the diagram to select the Track number (1 thru 16) and the Pattern number (1 thru 32). Use the data entry slider to change the tempo (from 77 to 204 beats per minute.)

*See the SE!quencer appendix for information about adjusting the ENGINE Track Assign/Voice mode menus.*

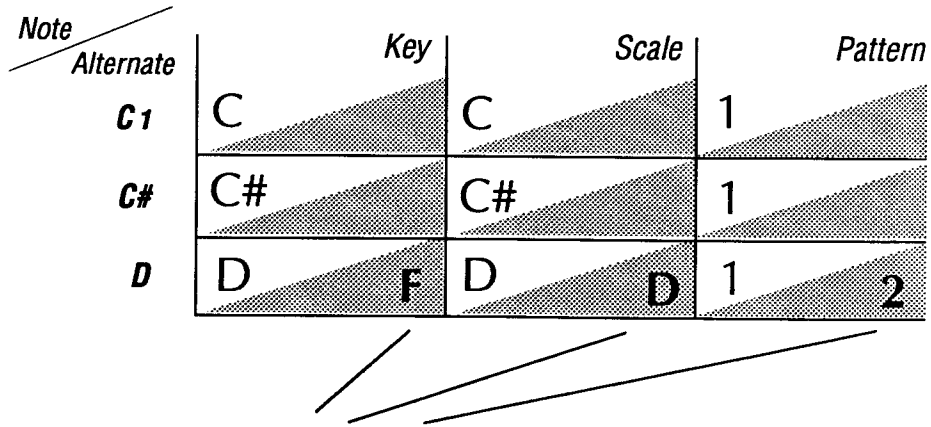




```
>Note   >Key   >Scale   >Pattern
  D       D       D         1
```

*Each note can have an alternate setting that is triggered only when you press that note and any other note beneath it simultaneously*

```
>Note   >Key   >Scale   >Pattern
 D alt    F       D         2
```




*The "D alt" settings here will trigger only if you press a "D" **AND** any note beneath it (C# or C) at the same time*

# BIBLIOGRAPHY

*Tonality is a concept that is fundamental to Western music; since a basic discussion of tonality would be too lengthy for this user's manual, please refer to the following suggested books for more information.*


Alan Swain's Modern Keyboard Harmony
Book I: Basic Chord Construction
Book II: Complex Chords in Open Position
Book III: How to Play by Ear
published by Creative Music
1249 Waukegan Road
Glenview, IL 60025
USA

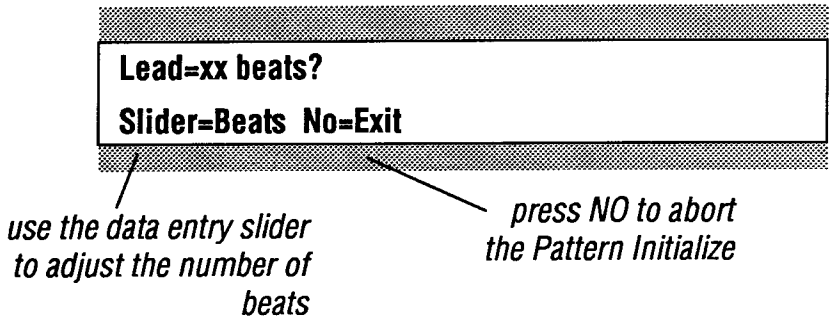
Techniques and Materials of Tonal Music
by Thomas Benjamin, Michael Horvit, and Robert Nelson
published by Houghton Mifflin Company
Boston, MA
USA

Harmony
by Walter Piston and Mark DeVoto
published by W.W. Norton & Co., Inc.
New York, New York
USA






You can also set a lead-in that will play the "click track" for up to 8 beats before recording each Track of the Pattern.



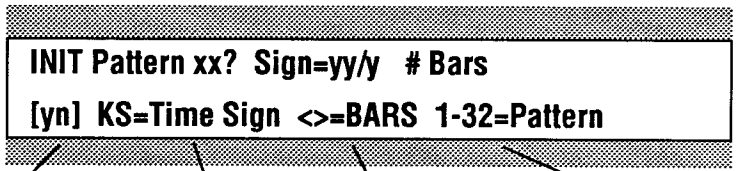

- Use the data entry slider to set the number of beats for each Pattern's lead-in (the lead-in can have from 0 to 8 beats.)

*See the SE!quencer appendix for more information on a Pattern's "click track."*

# Initializing a Pattern

The first thing you need to do when recording a Pattern is to initialize it with the exact timing and for the length that that you desire (if you've already initialized the Pattern, just press NO to continue on to the Record Pattern menu.)

When you initialize a Pattern, you are really erasing all of the Tracks in that Pattern and placing a metronome based on the timing you set into a special Track known as a "click track." Although independent of the other ENGINE Tracks, the "click track" uses the Track 16 Destination for its sound (so make sure that Track 16 has an active Destination.)




*press YES to continue initializing Pattern*

*press NO to abort the Pattern Initialize and continue on to Record Pattern*

*use the Key Set buttons to adjust the time signature*

*use the Cursor buttons to set the number of bars*

*press buttons 1-32 to select Pattern*

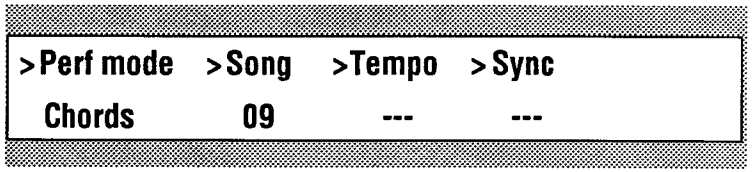
- Use the Cursor buttons to set the length of the Pattern (a Pattern can be from 1 to 64 bars long.)

- Use the Key Set buttons to set the Pattern's time signature (you can have 1 to 16 beats per measure; the beats can be 1/2, 1/4, 1/8, and 1/16 notes.)





# using Chords




Chords is an auto-accompaniment mode where you can play complex, 16 Track chord voicings in various musical styles, called ChordSongs.

There are 10 ChordSongs, with musical "styles" like a Blues trio, Orchestral strings and horns, or Vocal groupings. Each ChordSong is made up of several 16 Track Patterns that emulate the typical chord voicings of their particular musical style.

ChordSongs cannot be combined within a Performance, but their Patterns can be combined for different effects. The Tonal Processor can be used to pre-program more complex chord progressions while the Track Assign menu can selectively turn any of the 16 Tracks on or off.

*See the E! Supplemental booklet for a description of each ChordSong and a transcription of every Pattern.*

# using Player

| >Perf mode | >Song | >Tempo | >Sync |
|---|---|---|---|
| Player | 02 | 120 | INT |

Player is E!'s other auto-accompaniment mode where you can play arpeggios, ostinato patterns, and complex rhythms by pressing 1 key!

There are 10 PlayerSongs, which can be thought of as different musical "styles" (like Funk, Ballad, or New Age.) Each PlayerSong is made up of several 16 Track Patterns, providing alternative versions of the same "style." PlayerSongs cannot be combined within a Performance, but their Patterns can be combined for almost unlimited variation, making Player an extremely versatile tool in just about every performance/recording situation.

By using the Tonal Processor you can pre-program chord progressions and Pattern breaks - you can even use the Track Assign menu to selectively turn any of the 16 Tracks on or off.

*See the E! Supplemental booklet for a description of each PlayerSong and a transcription of every Pattern.*



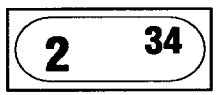


# Recording a Pattern

| Record Mode |
|---|
| 1=Song 2=Pattern 3=Tempo NO=Exit |

*press button 2 to record a Pattern*

*press NO to exit*




The Pattern is the basic building block of SE!quencer. Internally, SE!quencer can store up to 32 different Patterns at once. The Pattern numbers correspond to the 32 patch select buttons on your DX (Pattern 1= button 1, Pattern 2= button 2, etc.)

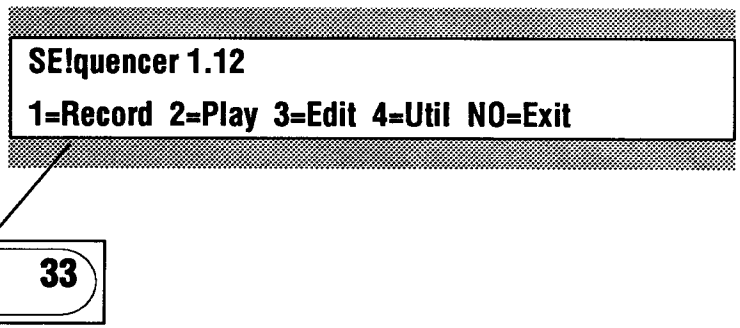
A Pattern can have up to 16 separate Tracks, each of which can play up to 16 notes at a time. Each Track can be played by any of the 16 MIDI channels or by the 8 internal DX voices in the Octal mode (all information concerning Track destination, DX volumes, Velocity Processing, etc. are determined by your ENGINE settings. (See the discussion, "Using the Track Assign/Voice mode menus" in the SE!quencer appendix.)

A Pattern can be from 1 to 64 bars long, and can be set to most any time signature you need when you initialize it. (see the next page.) Patterns can also be copied using the Pattern Copy Utility (see the Utility mode chapter.)

To record a Pattern, just follow the examples on the next few pages:

# Record mode

*Recording with SE!quencer is a very quick and easy process. The basic building block of every SE!quence is the Pattern, which can have up to 16 Tracks. These Patterns are then used to make a Song. Songs are created using SE!quencer's unique Song Record mode that lets you combine any number of Patterns in real-time. Both Songs and Patterns can be stored internally for instant recall whenever you use your DX7II/DX7s. It's really that simple! The next few pages show you how:*




***press button 1 to enter the Record mode***





# Storing Performances

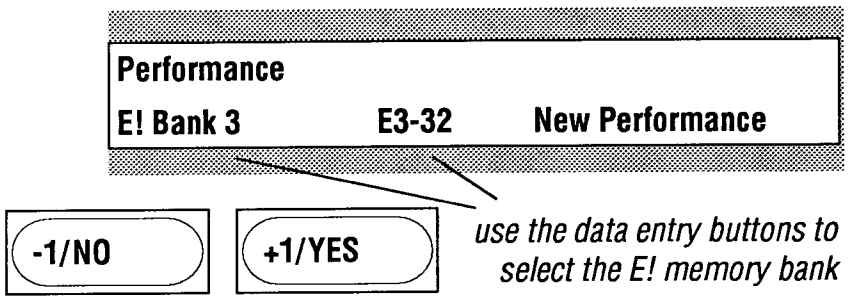
The ability to store all of the ENGINE parameters into a Performance that can be recalled at any time is one of the most exciting features of your E!quipped DX. It's all programmable - the 16 Track patch maps, the Octal mode, every Performance mode, and even the tempo of a Song can be stored into a single Performance. All you have to do is select a Performance number and E! will instantly set up ENGINE exactly as you had stored it (plus all of the other parameters that made up an original Yamaha Performance - i.e., slider assignments, PAN settings, etc.)

Internally, E! can store up to 128 Performances (organized into 4 banks of 32.) Please note that for a Performance to be recalled correctly, all of its component parts must be intact (i.e., have you erased any SE!quencer Songs or Patterns? is your MIDI set-up the same as it was when you stored the Performance?, etc.) To help you organize, feel free to make photocopies of the four Performance charts in the Supplemental booklet.

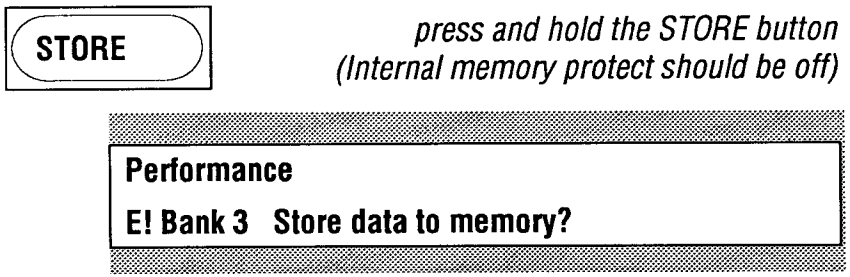
Just follow the diagrams on the next page to store a Performance:




*enter an active Performance state by pressing the PERFORMANCE button (the LED light must be on)*

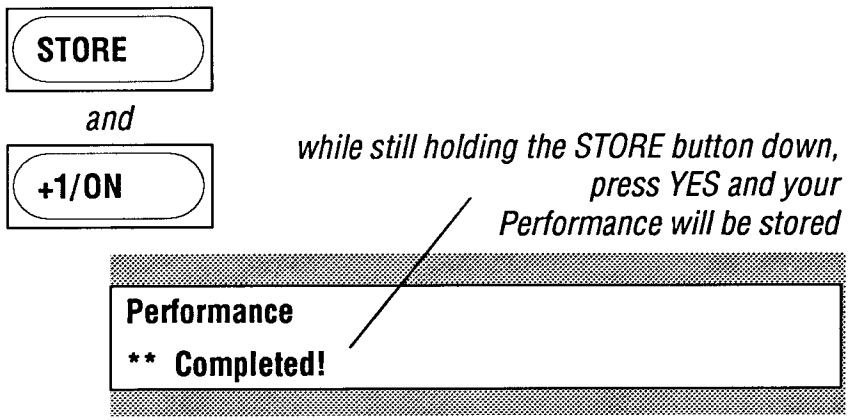



*use the data entry buttons to select the E! memory bank*




*press and hold the STORE button (Internal memory protect should be off)*

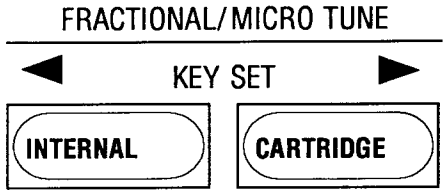
*press the number of the location (1-32) where you want this Performance stored*



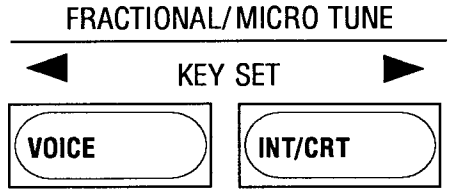

*while still holding the STORE button down, press YES and your Performance will be stored*








**Key Set on the DX7II FD/D**




**Key Set on the DX7s**

## SE!quencer and ENGINE settings

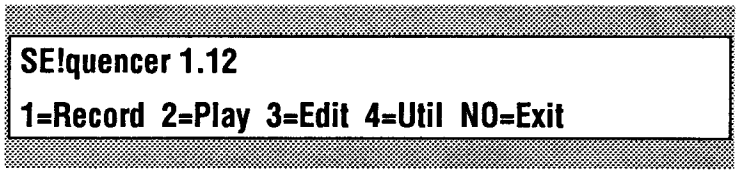
Your ENGINE settings are an important part of SE!quencer - what you record in SE!quencer as Tracks 1 thru 16 will be played by whatever instruments (DX or MIDI) the ENGINE Destinations are currently set at. All of ENGINE's parameters for Track Assign (Tranpose, Patch number, and Velocity Curve/Level), and the DX Voice menus (Note Shift, Volumes, Polyphony, etc.) are active when you are in the SE!quencer program. In this way, you can change the Destination of a Track and all other parameters even after you've recorded it. *See the SE!quencer appendix for more information on changing ENGINE settings while in the SE!quencer program.*

Also, please note that only 1 DX Voice mode (Single, Dual, Split, or Octal) can be active for each Pattern or Song. If you record a Pattern in Single, Dual, or Split voice mode, you will not be able to record onto another Track with a different DX Voice unless you change the Voice mode to Octal.

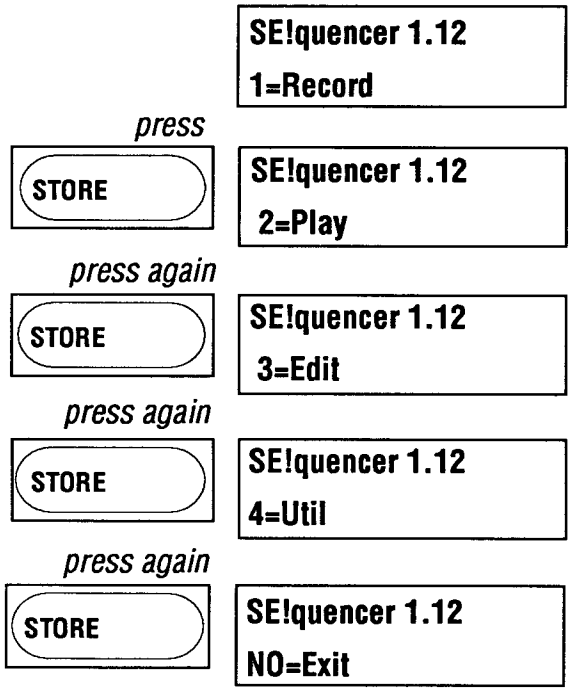
# Using SE!quencer on the DX7s

Due to the smaller LCD screen on the DX7s, viewing all of SE!quencer's "Help" messages at the same time is not possible. In order to see all of your choices, press the STORE button repeatedly, like in the example:

## DX7II FD/D screen




## DX7s screen








*See the Supplemental booklet for some examples using the Performance modes and for the helpful Performance charts*

# SE!quencer

*It's not just a sequencer, it's SE!quencer - your E!quipped DX7II/DX7s really has a built-in, 16 track MIDI recorder! Now you can record entire 16 track Songs right from your keyboard. If this is your first keyboard, SE!quencer is a fantastic way to get the most out of it - using the Octal mode, you can record up to 8 exciting tracks for every Song. If you've already got other MIDI equipment, you can playback SE!quencer's 16 tracks on any MIDI channel. And for those who may already have a dedicated sequencer, you can use your new SE!quencer to quickly write demos, or to work on ideas while you're on the road. You can use SE!quencer at home, on stage, in the studio - anywhere. And it's so easy to use! Just follow the diagrams in the next four chapters and you'll be recording in minutes:*





## How to enter SE!quencer

***press***

EDIT

UTILITY

TUNE

14 46

***press button 14 until screen reads***

LOAD PROGRAM >Voyeur >SE!quencer >12 tone

***select SE!quencer and press YES***

+1/ON

SE!quencer 1.12

1=Record 2=Play 3=Edit 4=Util NO=Exit

*"Help" screens display possible choices*