MUSIC PRINTING OPTION
REFERENCE MANUAL

Revision C.1

July, 1984

* PRELIMINARY VERSION *

CONTENTS OF THIS MANUAL

This Reference Manual is a complete and concise description of all menus, displays, printing functions and other features of the Music Printing system. If you are new to Music Printing, you should turn to the Music Printing User's Guide for a short step-by-step tutorial. Once you have learned the basics, you can use this Reference Manual for information on all the details. Before beginning with Music Printing, you should be familiar with the Synclavier (R) Real-Time Performance System, the Monitor, and SCRIPT.

CONVENTIONS USED IN THIS MANUAL

In Music Printing, the terminal keys have many special functions. To distinguish between the main and keypad keys, we have used the following conventions in this manual:

1. Numerical or alphabetical keys on the main keyboard are indicated by a capital letter or a number (e.g., 1, H).

2. Numerical and minus, comma, and period keys on the keypad are indicated by the letters KP before the key name (e.g., KP 1, KP comma).

3. Keys with a special name are referred to by name (e.g., TAB, CTRL, RETURN, ENTER, PF1, PF2).

4. When two keys must be pressed simultaneously, they are separated by a hyphen (e.g., CTRL-D).

SECTION I:
CREATING A SEQUENCE FOR MUSIC PRINTING

This section describes how to create a sequence for Music Printing, either with the Real-Time Performance system or with SCRIPT.

RECORDING ON THE KEYBOARD ALONG WITH THE CLICK TRACK

The simplest way to create a musical sequence for transcription is to record along with the Synclavier (R) click track. You may record on any or all of the sixteen tracks.

Before recording, set the click rate equal to the desired beat: e.g., one click per quarter note, one click per eighth note, one click per half note, one click per three eighth notes (for 6/8 time), etc. (You will use the Click Note setting on the Music Printing Main Menu to specify the value you have used for the click during recording.)

Then record your sequence. You should play in a "straight up" and legato manner along with the click track, holding each note its full duration and releasing each note precisely.

When the sequence is transcribed, the rhythmic value of each note will be based on the number of clicks, or the fraction of a click, that the note lasts. Any final decay, that portion of the note that occurs after you lift your finger from the key, will be disregarded.

By pressing and releasing each key precisely, you will enable the computer to distinguish between different rhythmic values, for example, between a quarter note and a quarter note tied over to a sixteenth note. The release is important so that there is no unintended overlapping or chording of notes. Using a timbre with no delay as well as short attack and decay times makes it easier to hear the beginnings and ends of the notes.

Although these instructions are helpful if you are recording specifically for transcription, there are many controls that may be used to produce accurate transcription of any real time performance, even the most expressive. For example, on the Music Printing Score Menu, you will specify the shortest note you wish to appear in any part; the computer will round the notes off as specified. Furthermore, you can change this decision on a measure-by-measure basis. You can enter commands that account for irregular rhythmic groupings, such as triplets and quintuplets, as well as commands that change the actual pitches, starting times, and durations of notes.

When you record with the click track, the clicks occur at a steady rate throughout the sequence. However, the rhythmic value of the click can change anywhere in the piece. For even more flexibility, you can use a memory recorder track to create a "click" that changes in tempo along with your sequence.

CREATING A SPECIAL CLICK TRACK

With Revision C.1 of Music Printing, you can accurately transcribe sequences which have changing tempos.

You use a track of the memory recorder as the rhythmic base, or as a surrogate "click track." The notes on this track will be used instead of the clicks to set the beat and to determine the rhythmic values of the notes in the notation. Since the notes on the track can occur at any rate, this allows you to set up a beat with a changing tempo and then to transcribe a recorded sequence with a similarly changing tempo.

You can record a "click track" by simply tapping the beat on a key on the keyboard. Any timbre can be used. You can record such a track first, and then record your sequence along with the track. Or, you could record your sequence first, and then tap out a "click track" which follows the tempo of your sequence. The "click track" might even be part of the piece, for example, the kick drum part.

You specify on the Music Printing Main Menu which track to use as the click track.

RECORDING ON THE GUITAR

You can record a guitar performance for notation using either the click track or a memory recorder track for the beat. As on the keyboard, you must play as precisely as possible. You must make clean breaks between the notes either by lifting off with the left hand or by damping with the right hand. Using the "guitar envelope" mode will make it easier to control the durations of the notes.

You may want to use the PITCH QUANTIZE/FILTER button in the lit state (for quantized pitches), since nothing in between semitone intervals will be notated anyway. However, this is not necessary.

Bends and slides can be recorded. The Music Printing Score Menu allows you to decide whether to transcribe all the semitone changes within the bends or slides or to transcribe only the first note in each. See the discussion of the Format Item on the Score Menu in Section III.

CREATING A SCRIPT COMPOSITION

SCRIPT compositions can also be transcribed by Music Printing. Remember, in SCRIPT, the beat is set by a TEMPO statement or statements. For proper transcription of rhythmic values, the click period must be synchronized with these TEMPO statements. The default CLICKPERIOD is 0.5 and the TEMPO is 4=120. These time values are synchronized. If you change either the CLICKPERIOD or the TEMPO, you must change the other as follows:

1. For a constant tempo throughout, include a CLICKPERIOD statement that synchronizes the click period with the period in the TEMPO statement.

   For example,

```
50 tempo 4=.25 sec
60 clickperiod .25
```

2. For a changing tempo, include a "click track" notelist and synchronize this track with the other tracks by TEMPO and other conducting statement(s).

   For example,

```
10 tempo 4=.5 sec
20 at beat 7 ritard to 4=.35 sec in 2
30 at beat 9 tempo 4=.5 sec
40
50 keysig d
60
70 notelist using 1-1 /* surrogate "click" track */
80
90  p c c c c c c c c c c
100 r 4 4 4 4 4 4 4 4 4 4
110
120 notelist using 8-5 /* part 1 */
130
140 p f g a b b b c4 d e c r d
150 r 4 4 2 (4t)3 8  8 8 8 4 4..
160
170 notelist using 8-5 /* part 2 */
180
190 p d3 e f  f g g# a g r [f a]
200 r 4 4 4. 8 4 4  4 4 4  4.. 4..
```

SECTION II.
ACTIVATING AND RUNNING MUSIC PRINTING

This section describes how to activate Music Printing and to use the various system commands.

ACTIVATING MUSIC PRINTING

To activate Music printing:
Type PLOT from the Monitor.
Press PF3 from the Real-Time system.
Press PF3 from the SFM Patch/Recorder Program.
Press PF3 from the Reverse Compiler Menu.

Music Printing (Rev.C) can be activated from either the Monitor program or from the Real-Time Performance system, or from the SFM Patch/Recorder program.

From the Monitor, you simply type PLOT. If you have a SCRIPT composition as your current file, it will be converted into a Synclavier (R) sequence, ready to be transcribed by Music Printing. If you have an empty current file, you can recall a Synclavier (R) sequence for transcription from the Music Printing Main Menu.

From the Real-Time Performance system, the SFM Patch/Recorder program, or the Reverse Compiler menu, you press the PF3 key to activate Music Printing. If there is a sequence in the memory recorder, it will be ready to be transcribed by Music Printing. If the memory recorder is empty, you can recall a sequence from the Music Printing Main Menu.

When Music Printing is activated, the Music Printing Main Menu will be displayed on the terminal screen. The top of the menu includes information about the software, the revision name and date, as well as the number of words in memory left for editing. This number will be decreased as you transcribe and edit your sequence, since each Music Printing parameter uses up additional memory. When this number approaches 0, you will not be able to plot the sequence and there will be an error message "Program out of Room."

Note that with some of the Real-Time Performance systems, such as the Guitar system or the Resynthesis system, the memory recorder has less room. You can run into a situation where you can edit and plot a sequence but may no longer be able to play it. When you type PF2 to return to the keyboard, the error message "Too long to play" will appear.

SYSTEM COMMANDS

Unlike SCRIPT, which is operated by typing monitor commands, Music Printing is run by selecting from the System Commands listed in the left-hand box on the Main Menu. Most of these commands are selected by a single keystroke.

BREAK — Return to the monitor

```
+-----------------------------------------------------+
|  Press BREAK to return to SCRIPT monitor.           |
+-----------------------------------------------------+
```

The BREAK command returns control to the SCRIPT monitor. It will erase all recorded notes and all music printing information. If you are transcribing a SCRIPT composition, the BREAK command will erase all real-time modifications and all music printing information as it restores the original line-numbered SCRIPT composition to the current file.

PF2 — Return to the keyboard

```
+-----------------------------------------------------+
|  Press PF2 to play the sequence.                    |
+-----------------------------------------------------+
```

The PF2 command returns control to the real-time system and plays the notes in the memory recorder. All the menu selections will be preserved as well as any material added during editing.

If you have activated Music Printing from the SFM Patch/Recorder program, pressing PF2 will return you to the Patch/Recorder program.

PF1 — Reverse compile

```
+-----------------------------------------------------+
|  Press PF1 for reverse compiler.                    |
+-----------------------------------------------------+
```

This command displays the reverse compiler menu where you select a format for as well as initiate the reverse compilation process.

All the Music Printing menu selections will be preserved along with the notes, as well as any material added during editing. This information will be placed in a block and listed at the end of the file. This block must not be tampered with or you will no longer be able to play or print the sequence. However, you can remove it altogether if desired.

Keypad 0 n Recall a sequence

```
+-----------------------------------------------------+
|  Press KP 0, then a number to recall a sequence.    |
+-----------------------------------------------------+
```

This command allows you to recall a different Synclavier (R) sequence from the user diskette or from the Winchester without leaving Music Printing.

Use a number corresponding to the correct button under RECORDER STORE/RECALL on the Synclavier (R) keyboard unit.

Keypad comma n Store a sequence

```
+-----------------------------------------------------+
|  Press KP comma, then a number to store a sequence. |
+-----------------------------------------------------+
```

This command allows you to store the current sequence on the user diskette without leaving Music Printing. All the menu selections will be stored with the notes as well as any material added during editing.

If you have an empty sequence, you can use this command to store a set of menu selections which you may wish to use frequently. Then you can recall the "menu" sequence, go to the Real-Time Performance system, record your piece, return to Music Printing and have these settings available.

Use a number corresponding to the correct button under RECORDER STORE/RECALL on the Synclavier (R) keyboard unit.

Keypad 1 Activate Score Menu

```
+-----------------------------------------------------+
|  Press KP 1 for Score Menu.                         |
+-----------------------------------------------------+
```

This command displays the menu for specifying the transcription parameters for the individual parts.

Keypad 2 Activate Page menu

```
+-----------------------------------------------------+
|  Press KP 2 for Page Menu.                          |
+-----------------------------------------------------+
```

This command displays the menu for specifying the page size and the text that will go on the first page of the score.

Keypad 3 Activate Keypad Menu

```
+-----------------------------------------------------------+
|  Press KP 3 for Keypad Menu.                              |
+-----------------------------------------------------------+
```

This command displays the current assignments for the six banks of preset keypad symbols for use with the Editor. You may use this menu to change the bank assignments.

RETURN Activate notation system

```
+-----------------------------------------------------------+
|  Press RETURN for notation.                               |
+-----------------------------------------------------------+
```

This command directs the computer to generate notation. The mode of the notation (i.e., Display, Edit, or Hardcopy) is selected by the Operation Mode item which appears to the right on this menu. It is considered to be an overall transcription parameter and is described in the next section. Note that if you wish to produce a hardcopy, that is, print the notation on paper, the printer must be set up as described in the Synclavier (R) Setup and Installation Manual.

Pressing RETURN will produce the first screen of notation in the Display or Edit mode. To produce the following screens, press KP 0.

RETURNING TO THE MAIN MENU

```
+-----------------------------------------------------------+
|  Press ENTER to return to Main Menu.                      |
|  Press spacebar to stop plotting, return to Main Menu.    |
+-----------------------------------------------------------+
```

You may return to the Main Menu from any other menu or from any display by pressing ENTER. You may also interrupt the plotting* of notation on the screen or on the printer by pressing the spacebar; the Main Menu will return to the screen immediately. During hardcopy printing, you may have to press the spacebar a few times.

---

* Plotting is a frequently used word in this manual. It means the drawing of the notation on the screen or on the printer. Each time the computer plots music notation it refers to the notes in the memory recorder, the transcription parameters set on the menus, and various instructions you add during editing. You will be directing the computer to plot and replot as you produce Music Printing notation.

RETURNING TO THE REAL TIME SYSTEM

From the Main Menu - Press PF2 to play the sequence. From the Display Mode - Press CTRL-P to play the sequence. From the Editor Mode - Press CTRL-P to play the sequence.

You can return to the Real-Time system from the Main Menu by pressing the PF2 key, as described above. You can also return to the Real-Time system directly from the Music Printing Display or Editor, leaving the notation on the screen while the music plays; to do so, you press CTRL-P.

Then, when you wish to return to Music Printing, press PF3 as usual. All menu selections will be preserved as well as any material added during editing.

Note that if you leave the notation on the screen, go to the Real-Time system, and then go to the Monitor, the notation will still be on the screen. Press SET-UP and then 0 (zero) to clear the screen.

SECTION III:
TRANSCRIBING THE MUSIC

This section describes how to specify various parameters that determine how your musical sequence will be transcribed. There are three menus on which you make these specifications: the Main Menu for overall transcription parameters, the Score Menu for parameters for transcribing each part, and the Page Menu for parameters for printing.

RHYTHMIC TRANSCRIPTION

There are three related transcription parameters that determine how the computer will transcribe rhythmic values: the click note, the time signature, and the note resolution. Each of these parameters is described in detail later. But since these parameters are interrelated, we will introduce the concepts behind them at this point.

The Click Note

The computer determines the rhythmic values for the notes by comparing the notes with a rhythmic base, either the clicks of the click track or the notes of a memory recorder track. The rhythmic value of the click (or notes) is called the click note and is specified as a fraction. The denominator of the fraction is a legitimate note value:

1	whole note
2	half note
4	quarter note
8	eighth note
16	sixteenth note
32	thirty-second note
64	sixty-fourth note
128	one hundred twenty-eighth note

and the numerator is the number of notes of that value for every click.

For example, with a click note of 1/2, notes that last a full click will be transcribed as half notes. With a click note of 1/4, notes lasting a full click will be transcribed as quarter notes. With a click note of 3/8, notes lasting one-third of a click will be transcribed as eighth notes.

You specify the initial click note on the Main Menu. It must be the same for all parts. You can use an editing command to change the click note to a different rhythmic value in the middle of the piece. Thus, the piece could start with a click note of 1/4 (one click per quarter note), and in the middle could change to a click note of 3/8 (one click per three eighth notes).

The Time Signature

The time signature divides the notes into measures. It is specified as a fraction where the denominator is a legitimate note value as listed above and the numerator is the number of notes of that value per measure.

You specify the initial time signature on the Main Menu. It must be the same for all parts. You can use an editing command to change the time signature in the middle of the score.

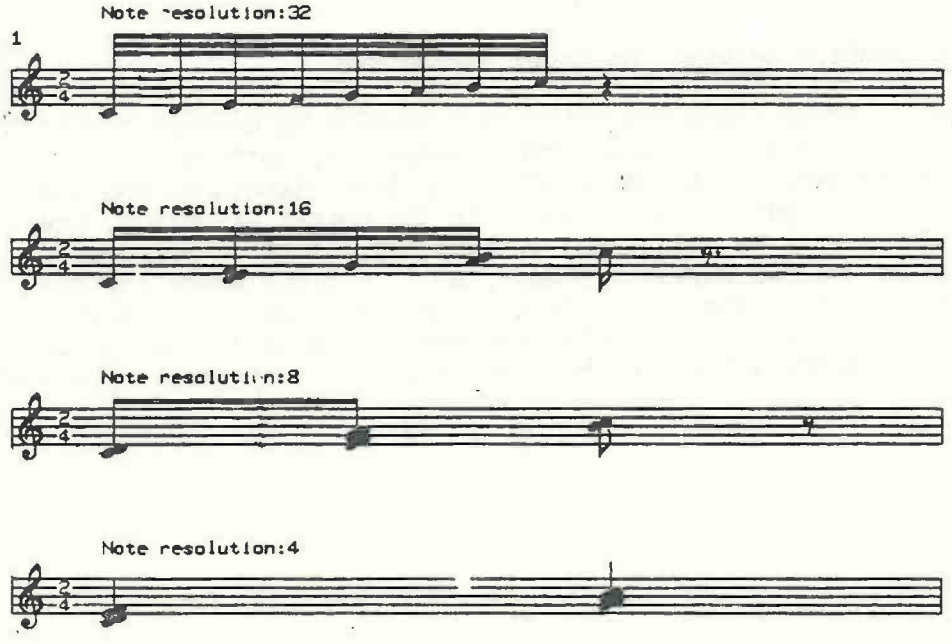
The Note Resolution

There is a third factor that is taken into account as the computer transcribes the notes for each measure. The Music Printing software can accurately transcribe notes as short as 128th notes. You may or may not wish to transcribe such short notes. The note resolution parameter allows you to specify the shortest note that you want to appear in the notation. Your choice of note resolution will depend on the rhythmic intricacy of the music, as well as on the accuracy of your playing.

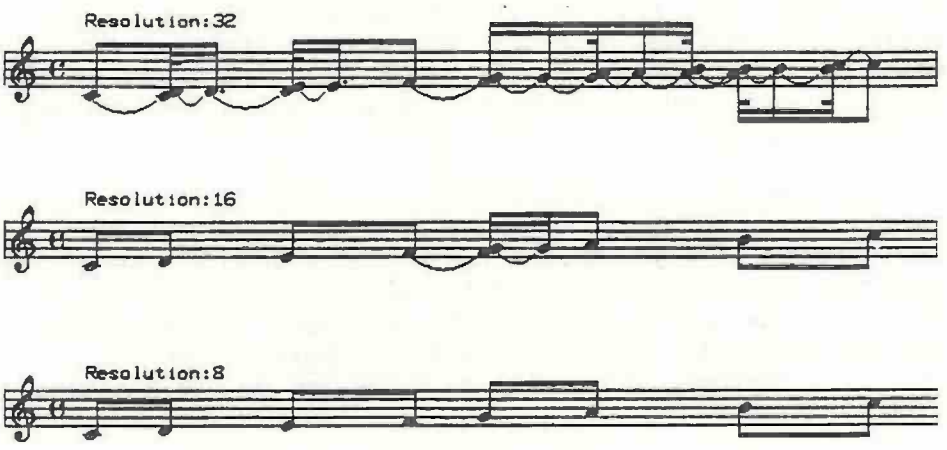
You can specify the shortest note to be any legitimate note value, as listed above, from whole notes to 128th notes. Each measure will be divided conceptually into blocks of the specified shortest note and all notes will be justified to appear in the notation on the closest block. Furthermore, any recorded notes the same length or shorter than the specified rhythmic value will be displayed as the shortest note.

You specify the note resolution on the Score Menu. You can specify a different note resolution for each part, and for each voice in a two-voice part, if desired. Furthermore, you can change the note resolution in any part or any voice at any measure in the piece. For example, there might be a few measures with thirty-second notes. You could set the note resolution for the part at 16 and change it to 32 for just those measures.

The following figure shows how a scale of thirty-second notes appears under different note resolutions. You can see that when the note resolution is too small, the notes are doubled up.



The following figure shows how a scale of eight notes appears under different note resolutions. You can see that when the note resolution is too large, the notes can appear incorrect due to tiny delays and overlappings between notes. This can easily be cleaned up by selecting the appropriate resolution.



The edit resolution (set on the Main Menu) is a related parameter. It sets the points at which the cursor will stop in the Music Printing Editor and is the same for all parts. You can never have greater note resolution than edit resolution. Therefore, the Edit Resolution must be equal to or greater than the greatest Note Resolution value anywhere in the piece. In our example above, the edit resolution would have to be set at 32 to accommodate the few measures where the note resolution was 32.

The Relationships between the Three Parameters

The computer transcribes the notes on a measure by measure basis. So that each measure will be transcribed correctly, certain relationships between the click note, the time signature, and the note resolution must be maintained. In the normal situation, these relationships will be maintained without any effort on your part. It's only in the odd rhythmic scheme, or in a piece where rhythms change radically in the middle that you may run into an illegal situation. You may wish to skip over the following discussion until you run into difficulties in the transcription of a complex piece of music.

The following three conditions must be true at all times.

1. There must always be a whole number of clicks in each measure. If you divide the time signature by the click note, you must get a whole number.

   Formula 1:

   time signature ÷ click note must equal whole number

   For example, a time signature of 6/8 and a click note of 3/8 (one click for every three eighth notes) would be fine, since there would be two clicks per measure.

   $$\frac{6}{8} \div \frac{3}{8} = 2 \qquad \text{OK!}$$

   But, with a 3/8 click note, you cannot have a 4/4 time signature, because that would result in 2 and 2/3 clicks per measure.

   $$\frac{4}{4} \div \frac{3}{8} = 2\frac{2}{3} \qquad \text{NOT OK!}$$

2. There must also be a whole number of note resolution blocks in each measure. If you multiply the time signature by the note resolution value, you must get a whole number.

   Formula 2:

   time signature x note resolution must equal whole number

   For example, a time signature of 4/4 and a note resolution of 16 would be fine, because there would be 16 note resolution blocks per measure.

   $$\frac{4}{4} \times 16 = 16 \qquad \text{OK!}$$

   However, a time signature of 3/4 and a note resolution of 2 would not work, because there would be one and one-half note resolution blocks per measure.

   $$\frac{3}{4} \times 2 = \frac{3}{2} \qquad \text{NOT OK!}$$

3. The relationship between the number of clicks in the measure and the number of note resolution blocks in the measure is also important. These numbers must be integrally related. To figure this out, first determine the number of clicks in the measure by following Formula 1. Then, determine the number of note

resolution blocks in the measure by following Formula 2. You must be able to divide the number of clicks into the number of note resolution blocks, or vice versa, and get a whole number.

Formula 3:

number of clicks must be a multiple of number of note resolution blocks

or

number of note resolution blocks must be a multiple of number of clicks

For example, if the time signature were 6/8, there would be 2 clicks per measure with a click note of 3/8 and 12 note resolution blocks per measure with a note resolution of 16. Since 12 is a multiple of 2, this combination would be accurately transcribed.

However, keeping the same time signature and click note, suppose the note resolution value were 4. In this case, there would be 3 note resolution blocks in a measure. Since 2 and 3 are not multiples of each other, this combination would cause problems in transcription.

When you set these parameters in such a way that these relationships are violated, the music will be plotted incorrectly. You will have to change one or more of the parameters.

One further note: the time signature interacts with the edit resolution to set up the cursor stopping places, or edit blocks, for the measures. Measures with only one edit block are not recommended.

Transcribing Tuplets

Frequently, music contains groups of notes which have time values outside the meter they occur in. In Music Printing, we call these irregular groups tuplets. The most common tuplet is the triplet, a group of three notes played in the time normally occupied by two notes of the same printed value. With Music Printing, you can use an editing command to transcribe properly any kind of tuplet (e.g., duplets, quintuplets, sextuplets, and so on) with any kind of note value.

See the TUP command in the section on Editing. In effect, the tuplet command creates a special block structure within the measure.

NOTE WELL: The tuplet cannot be made up of shorter notes are allowed by the current note resolution.

OVERALL PARAMETERS ON THE MAIN MENU

From anywhere in Music Printing, press ENTER for the Main Menu.

The overall transcription parameters on the Main Menu are used to select the notation mode and to set up the timing base for the notation.

Use the up or down arrow keys to move the cursor to the item you wish to change. Then either type in the correct value or select between preset options by pressing TAB, 1, or 2.

Unless otherwise noted, each item will be set at the Default, or TAB, value when you activate Music Printing.

The first two items determine the mode of plotting and the point where the plotting will begin. Every time you activate Music Printing they will be set at their default values. The remaining five control the transcription of the specific piece; their values are saved along with the sequence.

Operation mode: Default = Display

Press TAB for Display. Press 1 for Edit. Press 2 for Hardcopy.

This item is used to select the mode of notation which will be activated when you press RETURN. Display produces a simple screen display of the notation. Edit produces a screen display of the notation which can be edited, a single system* at a time. Hardcopy produces a printed copy of the notation on paper (assuming the printer is properly set up and connected as described in the Synclavier (R) Setup and Installation Manual).

Jump to measure: Default = 1

Type measure number.

Measures are internally counted by the Music Printing software. You can start plotting the notation, either on screen or on paper, at any measure in the piece by specifying the correct measure number. This function is used primarily

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* In notation, a group of staves, one for each part in the score, is called a system.

for editing. Numbering starts with the Starting Measure Number specified on the Page Menu, which is usually 1.

Start at click: Default = 1

```
+-----------------------------------------------------------+
| Type click number.                                        |
+-----------------------------------------------------------+
```

This item allows you to start the transcription at any click. This function is used primarily for skipping countoff measures. You can never change this value after you have edited the notation.

This setting is saved when you save the sequence.

Click track: Default = Click

```
+-----------------------------------------------------------+
| Press TAB for Click.                                      |
| Type number (1 to 16) for track.                          |
+-----------------------------------------------------------+
```

This item is used to specify the rhythmic base for transcription. If the regular click track has been used during recording, the word "Click" should be selected. If you have used a memory recorder track as a special click track, the track number should be entered. (See "Creating a Special Click Track.")

This setting is saved when you save the sequence.

Click note: Default = 1/4

```
+-----------------------------------------------------------+
| Type fraction.                                            |
+-----------------------------------------------------------+
```

This item is used to specify the rhythmic value of the click.

In the denominator of the fraction, specify a legitimate note value (for a list, refer to page 18 in "Rhythmic Transcription"): In the numerator, specify the number of notes of that value for every click. Here are some examples:

1/4	one click for every quarter note
1/2	one click for every half note
1/1	one click for every whole note
3/4	one click for every three quarter notes (good for triple time)
3/8	one click for every three eighth notes (good for 6/8 or 12/8 time)

During editing, the click note can be changed anywhere in the piece.

This setting is saved when you save the sequence.

See note below.*

Time signature: Default = 4/4

Type fraction.

This item is used to specify the starting time signature for the notation.

In the denominator of the fraction, specify one of the legitimate note values listed above under Click Note. In the numerator, specify the number of notes of that value per measure.

During editing, the time signature can be changed anywhere in the piece.

This setting is saved when you save the sequence.

See note below.*

Edit resolution: Default = 16

Type legitimate note value.

In the Music Printing Editor, the notation is divided into edit blocks and you move the cursor through the notation from block to block. The edit resolution value determines the size of the edit blocks. It is specified in terms of a legitimate note value and must be equal to or greater than the greatest note resolution value specified anywhere in the piece. With the default edit resolution of 16, the cursor will stop at each sixteenth-note segment of a measure.

You could specify the greatest possible edit resolution value, that is 128, for every sequence without harm. In fact, if you do not know what the shortest note in your piece is, this is a safe solution. However, it does use up more

---

* Remember, the click note, the time signature, and the note resolution set on the Score Menu are related parameters. The relationships are described in "Rhythmic Transcription"; turn to these pages if you have difficulty transcribing the rhythmic values as desired.

memory and causes the edit cursor to stop at more frequent, shorter intervals than is often necessary.

Once you have edited a sequence, you cannot change the edit resolution value. To change the edit resolution to closer points after editing, you must first delete all the editing, as described in the next section.

This setting is saved when you save the sequence.

INDIVIDUAL PART PARAMETERS ON THE SCORE MENU

From any menu, press KP 1 for the Score Menu.

You use the Score Menu to specify parameters that apply to the individual parts, or staves, in the score. You insert onto the menu a separate part line for each part in the score. Then on each line you specify the correct values for a series of parameters so that the part will be transcribed as desired. There can be up to sixteen part lines on the menu, allowing you to specify up to sixteen different parts.

You can specify one or two voices on each part line, thus creating parts with one or two musical lines. The notes on a single track can be split into upper and lower voices. Or, the notes from one track can be used for the upper voice and the notes from another track used for the lower voice.

If you want to create a grand staff or double-line part, such as a piano part, you must insert a separate part line for each of the staves. The notes from a single track can be split onto these two staves. Or the staves can contain notes from different tracks. The total number of staves possible in a system is sixteen; thus, if you specify a double-line part, this will use two of your sixteen staves.

When you wish to display, edit or print the specified parts, press ENTER to return to the Main Menu. Then press RETURN to transcribe the parts.

ADDING, DELETING, MOVING PARTS AND EDIT LISTS

PF1 - Insert	PF3 - Delete edit	KPminus - Recall
PF2 - Delete	PF4 - Delete master	KPcomma - Store

Adding Part Lines

Press PF1 to add part line to menu.

Each new part line will appear below the current line and the cursor will be moved down to the new line. The new line will be displayed with default values.

Each new part line adds an additional part to the score.

Deleting Part Lines

```
+-----------------------------------------------------------+
|  Press PF2 to delete part line.                           |
+-----------------------------------------------------------+
```

To delete a part from the score, place the cursor anywhere on the corresponding part line and press PF2. This action will also erase from memory the edit list for the part. The edit list contains anything you add to a part or change during editing; it includes symbols, text, and editing commands, all of which are described in Section V. Note that you should be careful about pressing PF2, because deleting the edit list can erase a great deal of work.

Note that it is also possible to temporarily leave a part out of the Display, Edit, or Hardcopy Notation without deleting the part line. In this way, you will not lose the information on the part line and in the edit list. The P(lot) column, described below under Format, is used to indicate whether or not a part should be plotted.

Deleting an Edit List

```
+-----------------------------------------------------------+
|  Press PF3 to delete edit list.                           |
+-----------------------------------------------------------+
```

Whenever there is anything in the edit list for a part, the letter E will appear next to the Part Number on the corresponding part line. To delete the edit list for a part, place the cursor anywhere on the corresponding part line and press PF3. Again, be careful because you can lose a lot of information if you erase the wrong edit list.

Deleting the Master Edit List

```
+-----------------------------------------------------------+
|  Press PF4 to delete master edit list.                    |
+-----------------------------------------------------------+
```

The master edit list is a special edit list which contains material that you want applied to every part in the score, for example, a key signature change. Whenever there is material on the master edit list, the letter ME will appear in the PF4 key instruction line at the top of the screen. To delete the master edit list, press PF4. The individual edit lists will be unaffected.

Storing a Part Line

Press KP comma to copy part line.

This command is used when you want to duplicate a part or move it to a different location in the score. It copies the part line on which the cursor is located and stores it in a temporary buffer. The edit list for the part will be stored along with all the specifications on the part line. This information will remain in the buffer until you press KP comma again or until you leave the Score Menu.

Recalling a Part Line

Press KP minus to recall part line.

To insert the stored part line into the menu, move the cursor to the line above where you want the part line to appear and press KP comma. The part line will be inserted and the edit list will be copied into the new part. You can repeat this action if you wish to insert the part line more than once.

Thus, to move a part from one place in the score to another, you would put the cursor on the part line, press KP minus, move the cursor to just above the new location, press KP comma, then move the cursor back to the original part line and press PF2 to delete it.

SPECIFYING THE ITEMS ON A PART LINE

You use the cursor arrow keys to move from item to item on the part line, changing the default values so that the corresponding part will be transcribed as desired. If you type something unacceptable for a particular item, for example a Q for the Key Signature, the entry may appear briefly on the screen, but when you move to another item, you will see that it has been ignored.

Every setting on this menu is saved when you save a sequence.

Every item from Part No. to Key Sig applies to the part as a whole. The items under Upper Voice and Lower Voice are used to specify the items that may be different for the upper and lower voices on the same part. The two voices may have notes from the same or different tracks, they can be transposed differently, and they can have different note resolutions. Note that in the default part line, there is no track specified for the upper voice; this means that the part will be written for one voice, using the notes on the track specified for the lower voice.

With the exception of a few items, e.g., Instrument Name, some Format items, and Vertical Spacing, the items on this menu may be changed anywhere in the score during the editing process.

Part No.	Instrument Name	Format P{[|GBN#S	Ver Spa	Clf	Key Sig	Upper Voice Trk	Upper Voice Trn-Key	Upper Voice Res	Lower Voice Trk	Lower Voice Trn-Key	Lower Voice Res

Part No.

Parts are numbered automatically. If the part has been edited, the letter E will appear next to the number.

Instrument Name

```
+-----------------------------------------------------------+
| Type instrument name.                                     |
+-----------------------------------------------------------+
```

You may type in any text you want up to 16 characters. If you make a typing mistake, press DELETE to erase a single letter; or move the cursor to the first character and press DELETE to erase the whole name.

On multiple part scores, this text will be printed to the left of the first line in the part. If you have a double-line part connected by a grand staff brace (see below under Format), the instrument name specified on the second part line will be centered between the two staves. No instrument name should be specified on the first part line.

On individual parts or grand stave parts, the instrument name will be printed at the top of every page of the music.

Format

The Format item is divided into nine separate columns. The symbols displayed in these columns determine how the systems of your score will be formatted.

Move the cursor from column to column; at each column, press TAB, 1, 2, or 3 to display the desired symbol as described below.

P (Plot)

Press TAB	for no asterisk - do not plot part.
Press 1	for asterisk - plot part (default).

The total number of separate parts that you can print together is sixteen. However, you can only display or edit as many parts as will fit on the screen at one time. Leave the asterisk (*) symbol in the P(lot) column to select those parts you wish to display or edit together. Remove the asterisk from any part you don't want to display or edit. Then, when you have finished editing and are ready to print the score, restore the asterisk to all the parts. Even though they cannot all be displayed on the screen at once, they can be printed on paper.

Another handy use of this column is for extracting single part from an orchestral score. Just remove the asterisk from all but one part line.

{ (Brace)

Press TAB	for no symbol	- no brace (default).
Press 1	for	⌜ - upper brace.
Press 3	for	⌞ - lower brace.

To create a double-line part or a grand staff, use the ⌜ and ⌞ symbols for two adjacent parts in the { (brace) column. The ⌜ is used for the top part and the ⌞ is used for the bottom part. A grand staff brace will join the two parts. The instrument name listed on the second part line will be centered between the two parts to the left of the first line of the score.

Special use:

Press 2 for [- single bracket.

The next column to the right is used to create bracketed groups of parts. If you wish to draw a bracket on a single part, you use the symbol in the brace column.

[(Bracket)

Press TAB	for no symbol	- no bracket (default).
Press 1	for ⌜	- bracket top.
Press 2	for ⎪	- bracket middle.
Press 3	for ⌞	- bracket bottom.

To create bracketed sections of parts in your score, you can use the ⌜, ⎪, and ⌞ symbols in the [(bracket) column. There are three bracket symbols: the ⌜ for the top part in the bracketed section; the ⎪ for the middle part(s); and the ⌞ for the lowest part in the bracketed section.

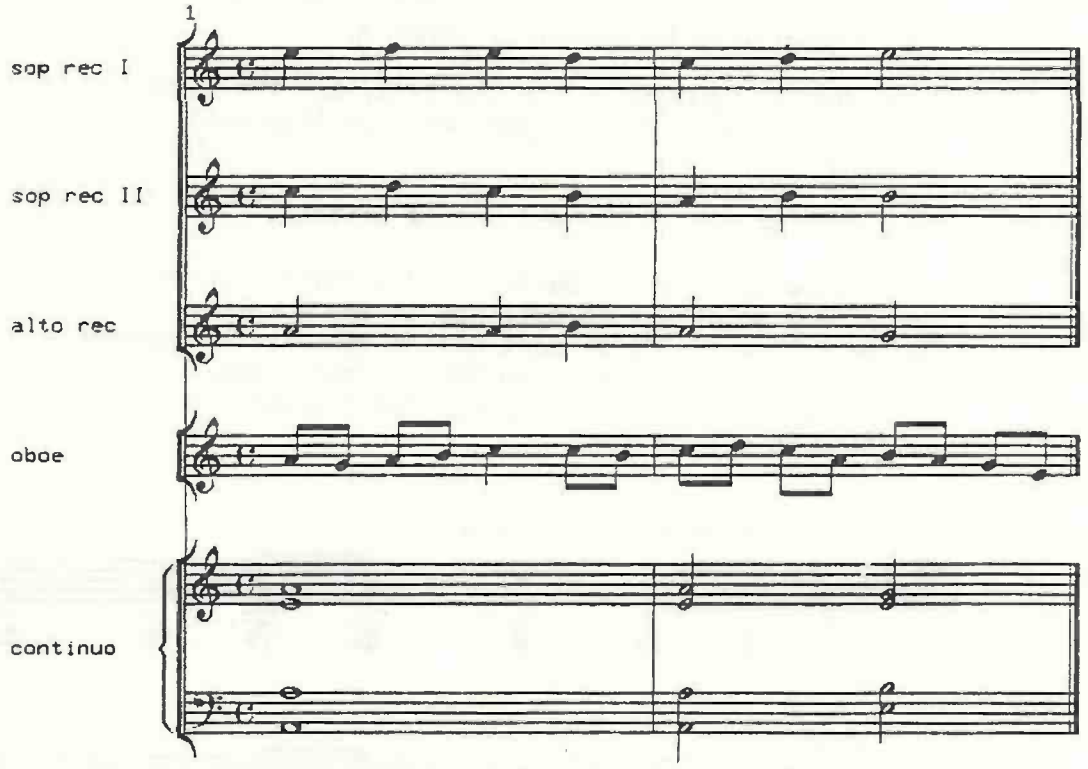
¦ (Connecting Lines Between Measure Bars)

Press TAB	for ⎪	- connecting lines (default).
Press 1	for ⊤	- no connecting lines.

The ⎪ symbol in the (bar) column indicates that vertical lines will be drawn in connecting the measure bars in the part with those in the part above. When the ⊤ symbol appears, the vertical lines will be omitted.

The following example shows the instrument names and the first four format settings for a system of parts.

Part No.	Instrument Name	Format P{[|
1	sop rec I	* ⌜|
2	sop rec II	* | |
3	alto rec	* ⌞|
4	oboe	*[⊤
5		*⌜⌜⊤
6	continuo	*⌞⌞|



G (Grand Staff)

Press TAB for no symbol - all notes (default). Press 1 for U - upper notes. Press 2 for L - lower notes.

You can split the notes on a track into two parts. Specify two part lines for the track. Then specify U for the upper part and an L for the lower part.

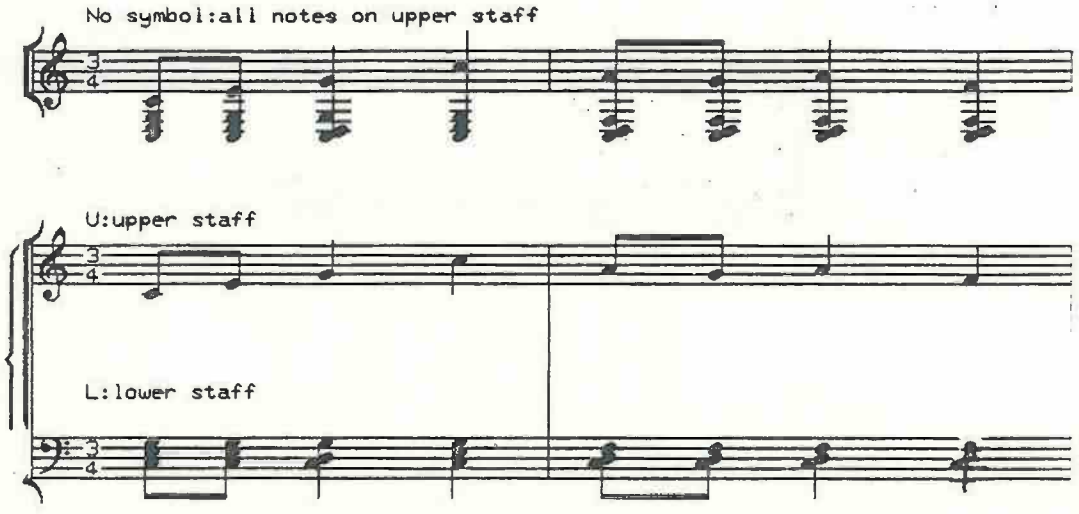
The U symbol tells the computer to omit from the notation all the notes on the track which are below a split point of middle C. Middle C is the default split point and can be changed during editing to any note.

The L symbol tells the computer to omit from the notation all the notes on the track used for the part which are at the split point or above. If you specify two tracks for a U or L part, the notes on both tracks will be similarly affected.

If no symbol appears in the G column, all the notes on the track used for the part will be displayed in the notation.

This setting can be changed during editing.

The following excerpt (Bartok, For Children) shows the effect of different settings in the G column. The part line for first part has no symbol, the part line for the second part has the U symbol, and the part line for the third line has the L symbol (in addition to a bass clef).

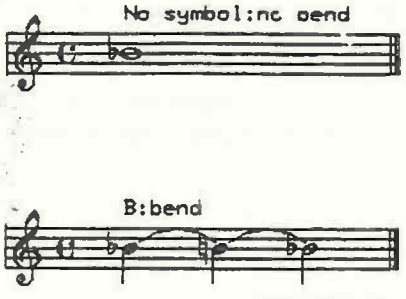


B (Pitch Bends)

```
Press TAB for no B - no bends (default).
Press 1   for B    - bends.
```

This column determines how guitar pitch bends will be transcribed. If the B symbol does not appear, only the first note of the bend will be displayed. If the B does appear, the semitone intervals of the bend will be displayed.

This decision can be changed anywhere within the part during editing.



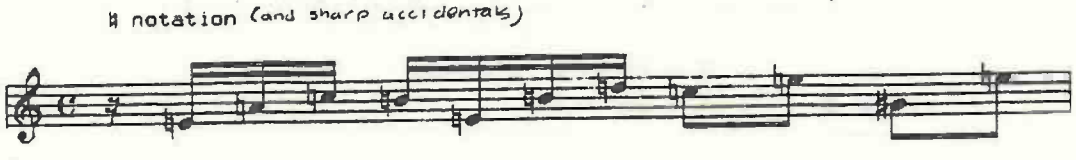
N (Natural Signs)

```
Press TAB for no n - no naturals (default).
Press 1   for n    - naturals.
```

This column is used to specify a natural notation. If the n symbol is displayed, a note that is not a sharp or a flat will be given a natural sign. The use of n causes redundant accidental to be printed.

This can be changed anywhere within the part during editing.

The following excerpt (J.S.Bach, Invention 13) shows how a sequence will be plotted in natural notation.



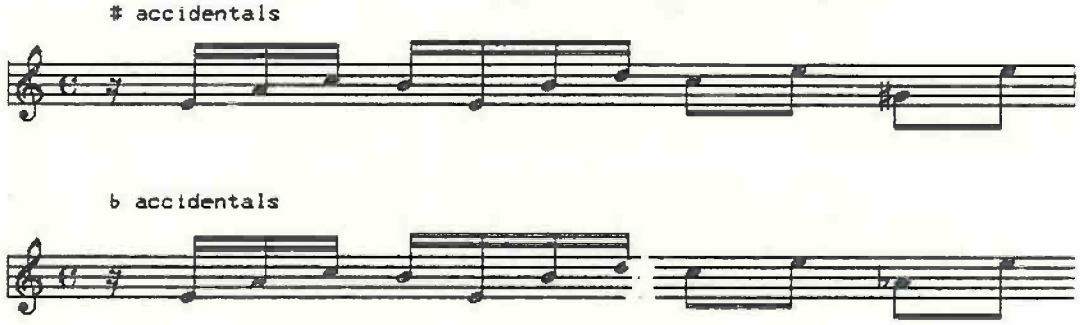
(Accidentals)

```
Press TAB for # - sharps (default).
Press 1   for f - flats.
```

This column is used to specify whether sharps or flats will be used for the accidental notes in the part (e.g., whether a note will be written as A sharp or B flat). When you select a key signature in sharps, this item will automatically be set at #. When you select a key signature in flats, this item will be set at f. You can override these automatic choices as desired. If you specify a transposition, it does not affect this item.

This parameter can be changed anywhere within the part during editing, either for a single note or for all subsequent notes.

The following excerpt (J.S.Bach, Invention 13) shows how the same sequence will be plotted with sharp and flat accidentals selected.



Note that if the key signature setting plus the transposition value (described below) results in one of the following key signatures (B, F#, C#), the current accidental setting will determine whether the plotted key signature will be B or C flat, F# or G flat, or C# or D flat.

S (Syncopation Mode)

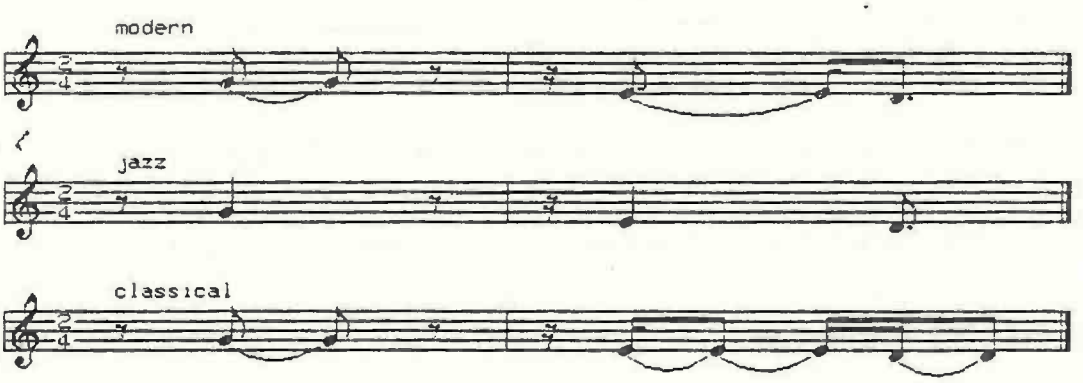
```
Press TAB for C - classical.
Press 1   for M - modern (default).
Press 2   for J - jazz.
```

This column is used to specify how syncopated notes will be transcribed. There are three ways: If the M

symbol is selected, syncopated notes will be treated as single or dotted single notes unless they cross beat boundaries, in which case, they will be drawn as tied notes. If the J(azz) symbol is selected, all syncopated notes will be transcribed as single or dotted single notes even if they cross beat boundaries. If the C(lassical) symbol is selected, any syncopated note will be drawn as a tied note.

This parameter can be changed anywhere within the part during editing. In addition, a tied syncopated note can be changed into a single note with the NMND (note mend) editing command. And a single syncopated note can be changed into a tied note with the NBRK (note break) editing command.

The following example shows the different modes of syncopation.



Ver Spa (Vertical Spacing)

Type number of half-space units. Press TAB to recall default value (based on Staff Spacing and Page Length).

The vertical spacing item sets the space between the individual staves. Each half-space unit equals the distance between the middle of a space and a line in the staff. You specify the number of these units between the center line of the staff and the center line of the staff above. (There are eight of these units in the staff itself.) On the first part line, you will be setting the space between the center line of the staff and the subtitle line on the first page and between the systems in your score.

Each time you press PF1 to add a part line, it will come up with the default vertical spacing value of 26. Once you have added all your part lines to the Score Menu, you should press KP 2 to recall the Page Menu and set the Page Length, then the Staff Spacing, thereby telling the computer the length of your page and the number of staves to print on it. When you return to the Score Menu, the default vertical spacing settings will be reset so that the selected number of staves per page will fit on the selected page length. At this point, you can adjust the spacing between the individual staves as desired. Pressing TAB will restore the default value set on the Page Menu.

If you specify too small a spacing, the staves will overlap. If you specify so large a spacing that the selected parts will not fit on the screen or within the specified page length, you will get an error message when you activate the notation system.

Clf (Clef)

```
+-------------------------------------------------------+
| Type G, A, T, or F (default is G).                    |
+-------------------------------------------------------+
```

The available clefs are G (treble); A (alto); T (tenor); and F (bass).

You can change the clef anywhere in the part during editing.

Key Sig (Key Signature)

```
+-------------------------------------------------------+
| Type MAJOR or minor key (default is C).               |
+-------------------------------------------------------+
```

You may specify any major or minor key. Use upper case for major keys and lower case for minor keys and f for flat and # for sharp as in SCRIPT (e.g., Af for A flat major or f# for f sharp minor). The key signature parameter is used to specify the concert key. The transposition parameter, if any, will change the key on the notation automatically.

You can change the key signature anywhere in the part during editing.

The following items can be separately specified for the upper and lower voices on a part. The Track item determines the notes for the voices; the other items determine how the notes will be transcribed. If you want a single voice on a part, make your specifications under Lower Voice.

Trk (Track)

Type number 1-16 for Lower Voice (default is 1). Type number 1-16 for Upper Voice (default is NO TRACK). Press TAB to delete track number under Upper Voice.

You may specify one or two tracks for each part.

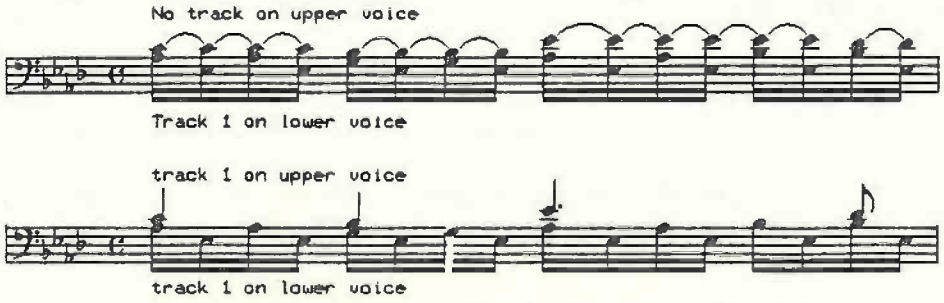
If you specify only one track (under Lower Voice - Upper Voice only is not allowed), all the notes will be stemmed as if for one voice, up or down depending on the staff location. Simultaneous notes will be written as chords with a single stem.

If you specify two different tracks under the Upper and Lower Voices, the notes on the track specified under Upper Voice will be drawn stems up. And the notes on the track specified under Lower Voice will be drawn stems down.

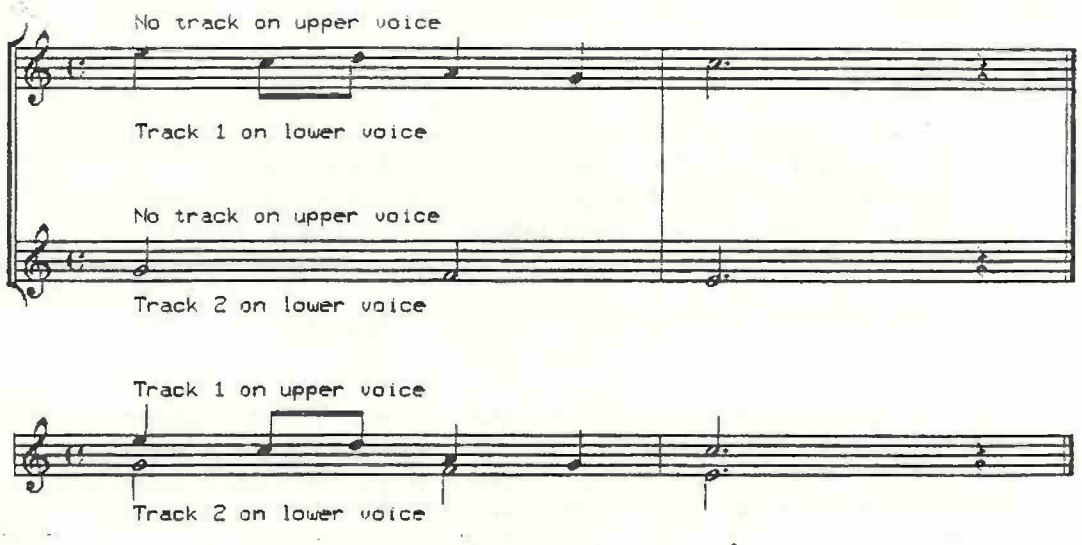
If you specify the same track under both Upper and Lower Voices, the notes on the track will be split into two voices. The voicing will be determined by the largest interval in each chord. The notes above that interval will become part of the upper voice; the notes below that interval will become part of the lower voice. At any point on the track where there is only one note, it will be placed in the upper voice. You can move a note or notes from one voice to another during editing if the same track is used for both voices.

In all cases, you can change the track used for a voice during editing.

The following excerpt (Beethoven, Sonate Pathetique, Op.13) shows how the same and different tracks may be specified for the upper and lower voices. Examine the first line carefully. The series of ties occur because notes of different durations are all plotted in the lower voice. By breaking the notes on the track into two voices, line 2, you can quickly turn the tied notes into single notes.



Here you will see another example where the notes from two tracks are combined on a single staff.



The next two items are linked and represent two different ways of specifying a transposition of the notes in the voice.

Trn (Instrument Transposition)

Type interval in semitones.

You may transpose the notes in the voice by specifying a transposing interval in semitones. You can set octave transpositions, or any other interval. Negative numbers (to -64) transpose down; positive numbers (to 64) transpose up. For example, a value of 60 would transpose the notes five octaves up. Changing this item automatically changes the next item.

You can change the transposition value for the voice during editing, but, if the same track is used for both voices, the lower voice transposition value will be used for both voices.

Note: Transposing a voice does not change the notes in the memory recorder; it just changes how they are transcribed.

Key (Instrument Key)

Type major key.

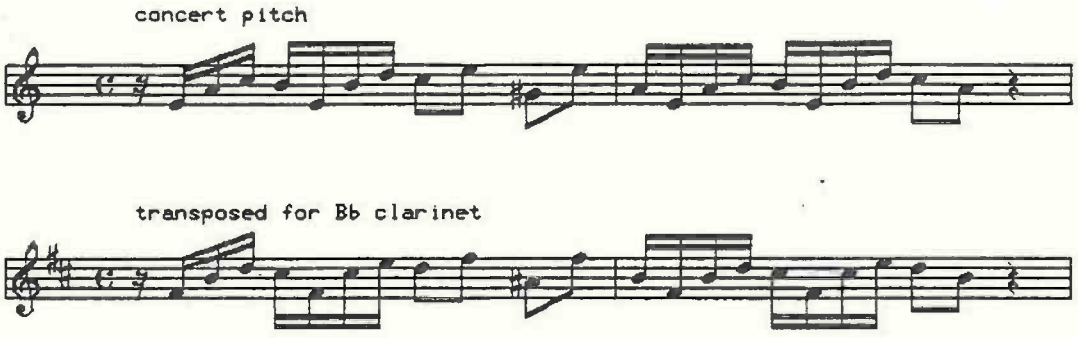
You may also specify any major key to transpose the notes in the voice for instruments pitched in different keys. Use F

for flat (e.g., BF for music for B flat clarinet) and # for sharp. Changing this item automatically changes the previous item. The default is C, or concert pitch.

The case of the letters does not matter.

Note that transposing will change the key signature in the notation but it will not change the value specified under Key Sig. By changing the value under Key Sig to match that under Key, you can print out transposed notes without any key signature.

The following exerpt (Bach, Invention 13) shows a sequence of notes transposed for a B flat instrument key.



Res (Note Resolution)

Type legitimate note value.

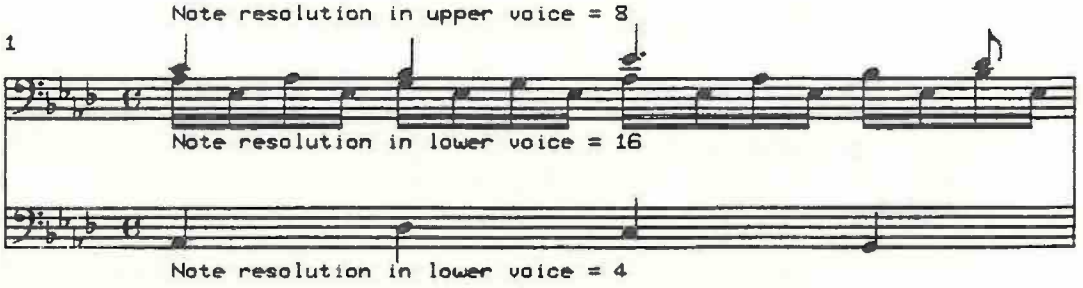
The note resolution item allows you to choose the shortest note that will be transcribed in the voice. Any note the same length or shorter than the specified note value will be transcribed as the specified note value. This item establishes the shortest note value for the beginning of the piece.

The note resolution value may be different for each voice. Furthermore, the note resolution value can be changed for either voice during editing.

However, the note resolution value can never be a shorter note value (that is, a larger number) than the edit resolution value. In fact, if you type in a larger number, it will be changed to equal the edit resolution.

The following excerpt (Beethoven, Sonata, Op. 13) shows how

different note resolution values can be specified for different parts and voices.



PRINTING PARAMETERS ON THE PAGE MENU

From any menu, press KP 2 for the Page Menu.

The Page Menu is used to set up the overall size and shape of the printed score and to specify a title and other text for the first page of the score.

The top of the menu is used to enter the text for the first page in your score. There are four separate lines; you use the arrow keys to move the cursor to the beginning of each of the four lines. Press RETURN to move the cursor back to the beginning of the same line.

Title

The first line is used to enter the title, which will be printed centered at the top of the first page of the score in double width characters. The title may consist of up to 80 characters. These maximum length titles may be too wide for the page width you specify, however.

Left Subtitle

The second line is used to enter the left subtitle which is printed left justified under the title in standard characters. It may consist of up to 80 characters.

Right Subtitle

The third line is used to enter the right subtitle which is printed right justified under the title in standard characters. It may consist of up to 80 characters.

Copyright Line

The fourth line is used to enter the copyright text which is printed centered at the bottom of the first page. It may consist of up to 80 characters. If you enter the @ symbol anywhere on this line, it will print a copyright ( ) symbol. You can enter as many of these symbols as you like on this line.

The bottom section of the Page Menu is used to set page size parameters, as well as a few other parameters. Use the arrow keys to move the cursor to each item and type in the correct value or press TAB or 1 as specified below. Every one of these items are saved when you save the sequence except for Staff Spacing, which is a special case and merely sets the defaults for the Vertical Spacing on the Score Menu.

PAGE FORMAT SPECIFICATIONS:

```
Page Width   (in : 1/4 in:)  : 8     Starting Page Number:     1
Page Length  (in : 1/4 in:)  : 10    Starting Measure Number:  1
Note Spacing (1/2 note width): 4     Final Measure Number:     Off
                                     End of Piece:             On
Staff Spacing (staves/page)  : 8     Block Rests:              On
```

Page Width — Default = 8

```
+-------------------------------------------------------+
| Type number of inches.                                |
|   or                                                  |
| Type number of inches, press spacebar,                |
| and then type number of quarter inches.               |
+-------------------------------------------------------+
```

The Page Width is specified in inches and quarter inches. The maximum specified width is 13 3/4 inches. The actual page width will be 5 percent smaller than the specified page width.

This setting is saved when you save the sequence.

Page Length — Default = 10

```
+-------------------------------------------------------+
| Type number of inches.                                |
|   or                                                  |
| Type number of inches, press spacebar,                |
| and then type number of quarter inches.               |
+-------------------------------------------------------+
```

The Page Length is specified in inches and quarter inches. The maximum specified page length is 63 3/4 inches. The actual page length will be 5 percent smaller than the specified page length.

Make sure the page length is long enough to hold an entire system of staves. Add extra room to include room for lyrics if necessary.

This setting is saved when you save the sequence.

Note Spacing Default = 4

Type number of half noteheads.

The Note Spacing item sets the minimum amount of space between notes. It is specified in terms of half note-head units. Each unit represents the distance between the center of a note and the stem. In all but whole notes, there are two units per note; whole notes are three units wide. The default sets four units between the center of one notehead and the center of the next. The actual spacing between notes will be usually be wider than the specified note spacing in order to line up bar lines with the right and left margins.

The note spacing is also sometimes either stretched or condensed when the notation is printed on paper. This means you should do a preliminary printout on paper, then make any spacing changes required and print again. See "Section V. Printing Your Score" for further discussion of this topic.

This setting is saved when you save the sequence.

Staff Spacing Default = 8

Type number of staves per page.

The Staff Spacing item is used to set the Vertical Spacing defaults for the Score Menu. You enter the number of staves you wish to appear on the page. The computer will then calculate the correct Vertical Spacing between the parts so that the specified number of staves will fit on the previously specified page length. When you move to the Score Menu, this Vertical Spacing will appear on each part line. Any time you change the Page Length setting, you must respecify the Staff Spacing setting if you wish to reset the Vertical Spacing defaults.

With a score with many parts, you can specify the same number of staves as there are parts in your score so that each system is printed on a separate page.

This setting is not saved when you save the sequence, but the results of its use (i.e., the Score Menu Vertical Spacing settings) are saved.

Starting Page Number — Default = 1

```
+-----------------------------------------------------------+
|  Type number of page.                                     |
|  Press TAB for "Off".                                     |
+-----------------------------------------------------------+
```

Normally pages in the paper printout will be numbered starting with "1". If you wish to start the page numbers with a different number, for example if you are printing out a section of a longer work, specify the desired starting number. If you wish to leave off page numbers entirely, press TAB to turn off the function.

This setting is saved when you save the sequence.

Starting Measure Number — Default = 1

```
+-----------------------------------------------------------+
|  Type number of measure.                                  |
|  Press TAB for "Off".                                     |
+-----------------------------------------------------------+
```

Normally, measure numbers are printed on the left of each line starting with "1". If you wish to start the measure numbers with a different number, specify the desired number here. This number will determine the default for the "Jump to Measure" item on the Main Menu.

If you wish to leave off measure numbers entirely, press TAB to turn off the function.

This setting is saved when you save the sequence.

Final Measure Number: — Default = Off

```
+-----------------------------------------------------------+
|  Type number of measure.                                  |
|  Press TAB for "Off".                                     |
+-----------------------------------------------------------+
```

Normally the longest part will determine the number of measures in your score. Shorter parts will be given rest measures so that all parts plotted together will be of equal length. If the Final Measure Number is set at Off, this is what will occur. By specifying a "Final Measure Number", you can create longer or shorter scores.

If the specified "Final Measure Number" is less than the total number of measures in the longest part, the score will end at the specified measure; the measures beyond this point will be left out.

If the specified number is greater than the total number of

measures in the longest part, additional rest measures will be added to all parts. This can be useful when you want to add notes to the end of a score through the Music Printing Editor. In addition, if you want to print out a short individual part from a longer score, you can set this setting to match the number of measures in the longest part. Then the appropriat number of rest measures will be added to the end of the short individual part.

This setting is saved when you save the sequence.

End of Piece: Default = On

```
+-------------------------------------------------------------+
|  Press TAB for "Off".                                       |
|  Press 1   for "On".                                        |
+-------------------------------------------------------------+
```

This option is used when you are printing out sections of a long work. Normally it is set at "On" which means that the last line in the piece will not be extended to the right margin unless it is longer than one-half of the page width. Furthermore, a double bar will be drawn after the last measure to indicate "End of Piece".

If the End of Piece is set to "Off", then the last line will be extended to the right margin and no double bars will be drawn. In other words, additional notation can be added to the score on the same page.

This setting is saved when you save the sequence.

The following example shows the same sequence with the End of Piece selected as "On" and as "Off."

End of Piece: Off

End of Piece: On

Block Rests: Default = On

```
Press TAB for "Off".
Press 1   for "On".
```

This command is used to specify whether or not you want numbered block rests. If "Off", all measures will be notated, even a series of rest measures. If "On", a series of rest measures will be consolidated into a block rest with a number above. Block rests only occur where all parts currently selected for plotting are resting.

Typically you will turn off the block rest function to edit the score. If so, any editing that occurs during a rest will be ignored when you turn on the block rest function, except that the block rests will be broken whenever a time or key signature change, repeat sign, double bar or break rest command occurs in the score. If you turn the block rest function off again, any editing will reappear.

Note that there is an editing command that can be used to break the block rests into smaller block rests as desired. (See the BRST command in the Editing section.) This command is entered when the block rest function is turned off.

This setting is saved when you save the sequence.

The following example shows block rests and no block rests.

Block rests: Off

Block rests: On

PROGRAMMING THE KEYPAD MENU

From any menu, press KP 3 for the Keypad Menu.

The 7, 8, 9, minus, 4, 5, 6, and comma keys on the keypad are used in the Editor to add graphical symbols and editing commands. There are six preset banks of symbols and commands that can be assigned to these keys. Their use is described in the editing section. You may see the six banks displayed at one time on the Keypad Menu.

The Keypad Menu is used to change the symbols and commands assigned to these banks. You may change any assignments by using the arrow keys to move the cursor to the desired square and typing in a valid symbol or command name. A list of all the symbol names and command names and what they stand for appears in the Appendix.

Any special keypad assignments will be saved along with the sequence.

SECTION IV:
DISPLAYING THE NOTATION

On the Main Menu, select Display Operation Mode and press RETURN.

The Display Mode is provided to give you a quick look at the transcription of your sequence. On the screen will be displayed as many staves as will fit. You will not be able to change anything in the Display Mode.

From the Display Mode, you can:
Press the spacebar to interrupt the plotting.
Press KP 0 to move to the next screen.
Press ENTER to return to the Main Menu.
Press CTRL-P to return to the Real-Time Performance system.

SECTION V:
EDITING THE SCORE

On the Main Menu, select Edit Operation Mode and press RETURN.

The Music Printing Editor provides a flexible means for adding text and graphic symbols to the musical score, for changing the transcription parameters in the middle of the score, and for changing the actual sequence in the memory recorder.

The Editor displays one system of the score at a time. You simply position the edit cursor, a small green crosshair, where you wish to add to or change the score and then start typing.

You can type in lyrics, written instructions for the musician, and any other text. With one or two keystrokes from the keypad, you can draw expression marks and many other musical symbols onto the score.

You may enter sequence commands which will change the sequence in the memory recorder by adding or deleting notes and by changing the pitches, durations, or starting times of notes. You may also enter "invisible" transcription commands which will change the way a note, a measure, or all subsequent notes are notated. Each time the computer plots the score, it will refer to these commands for instructions on such functions as a change in key signature or a change in time signature.

The following pages describe the editing display and how to move around on it, and how to enter text, symbol, or commands.

From the Editor, you can:
Press the spacebar to interrupt the plotting. Press KP 0 to display the next system. Press ENTER to return to the Main Menu. Press CTRL-P to return to the Real-Time Performance system.

THE EDITING DISPLAY

The Editor screen display is divided into two sections:

The upper section contains one system of the score, that is, one line of each part that has been selected for plotting with the asterisk symbol on the Score Menu. In single instrument parts, only one line at a time will be displayed.

The lower section contains various information about the part you are currently editing, the position of the cursor, and the symbols or commands currently active on the keypad.

```
(query line)
Name:
Part: 1       X-Off: 0   Block:1     Measure: 1     CLEF RESO VOX  TUP
Voice: Lower  Y-Pos: 16  Level:Base  Bank: 1        KEY  TRAN TRAK ACCD
```

Query Line:

The blank line with the blinking cursor at the top of the lower section is used to ask you questions about symbols and commands. For example, this is where you will be asked for symbol or command names or for the direction of a symbol.

Name:

This item displays the Instrument Name (entered on the Score Menu) corresponding to the part on which the cursor is located. As you move from line to line on the display, the name will change automatically to indicate the correct instrument.

Part:

This is the Part Number. As you move from line to line on the display, the Part Number will change automatically to indicate the correct part.

Voice:

This item indicates whether you are editing the lower or upper voice in the part or whether you are editing the master edit list. Voice selection is described below.

X-Off:

This item indicates the horizontal cursor position within the current edit block. Cursor movement is described below.

Y-Pos:

This indicates the vertical cursor position within the current edit block. Cursor movement is described below.

Block:

This item indicates the number of the edit block, within the measure or tuplet, in which the cursor is located.

Level:

Whenever you add tuplets to a score, you will be creating special edit block levels. This item indicates whether the cursor is in the original, or base, level or in one of the tuplet levels. There can be up to three levels of tuplets. The only time you will change level is when you add tuplets to a score. See the description on the TUP command in the Editing section.

Measure:

This item tells you what measure you are currently editing. It is updated automatically as you move from measure to measure.

Bank:

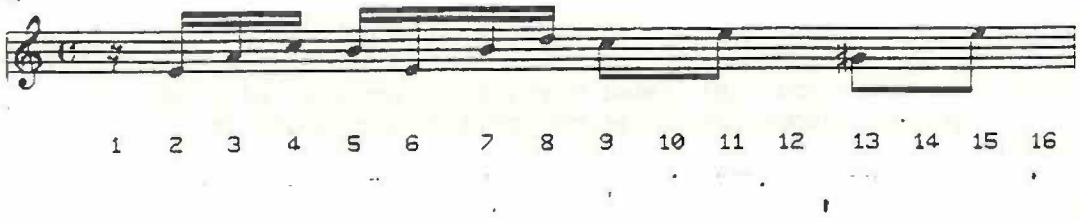
The 4, 5, 6, comma, 7, 8, 9, and minus keys on the keypad may be used to enter graphical symbols or editing commands in a single keystroke. There are six different preset banks of symbols and/or commands that may be assigned to these keys. This item tells you the number of the symbol bank currently assigned to those keys. The box to the right shows the names of the symbols and/or commands in the current bank. Selecting a bank is described below.

MOVING AROUND THE NOTATION

As previously stated, the Edit Resolution item on the Main Menu is used to specify the shortest note value anywhere in the piece. In the Editor each measure is divided into a series of edit blocks equal to this shortest note value. You move the cursor through the measure from edit block to edit block. Each symbol, text, or editing command that you add to the score will be linked with the edit block for the part.

Each edit block is numbered. As you move through the measure, the changing numbers will be printed on the Edit Block item in the lower section.

The figure below shows the edit blocks in a measure where the Edit Resolution value is 16.

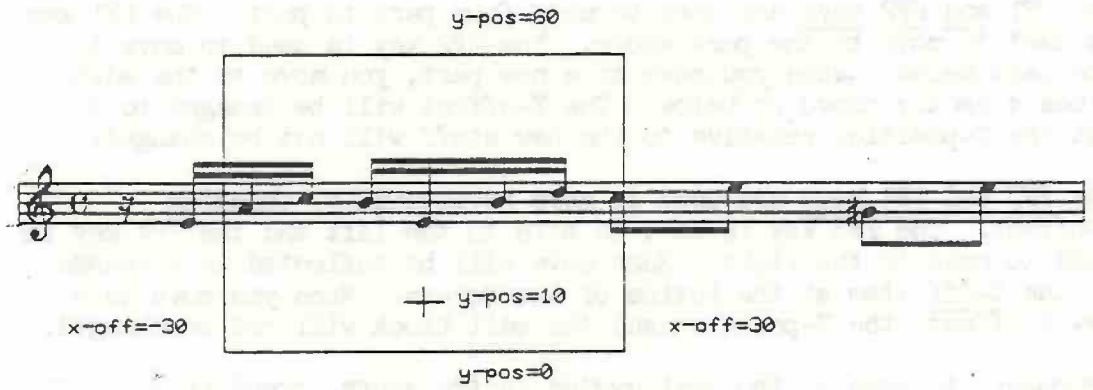


Each edit block is centered on a note, or possible note, but it also extends horizontally and vertically in a grid of 3600 possible edit positions. These positions allows you to position a symbol or text precisely on, above, below, or beside a note, as well as above or below the staff.

The vertical position of the cursor within each edit block is called the Y-position. The distance between Y-positions is a halfspace unit, that is, the distance between a line and a space on the staff. The range of Y-positions is from 0 below the staff to 60 above the staff, with the center line being 30. This range may overlap adjacent staves, but it should not be used to edit these other staves.

The horizontal location of the cursor within the edit block is called the X-offset. The distance between X-offsets is a half notehead, that is, the distance from the center of a note to the stem. The range of X-offsets is from -30 to the left of the note to 30 to the right of the note, with the center of the note being 0. This range may well overlap adjacent notes, but it should not be used to edit these other notes.

The figure below shows the range of Y-positions and X-offsets for one edit block, that of the second E in the first measure.



When you first call up the Editor, the cursor will be located on the first edit block of the first part in the first system. The Y-position will be 16; the X-offset will be 0.

Normally, the first system will start with measure 1 of the score. By setting the Jump to Measure setting on the Main Menu to the correct measure, you can immediately display and edit any segment of the score.

There are eight keys used to move the cursor around the system. The four arrow keys are used most frequently.

The left and right arrow keys are used to move the cursor from edit block to edit block on a line. When you move to a new edit block, a new number will appear in the Edit Block item below. The X-offset will be reset at 0, but the Y-position will not be reset, enabling you to move across the line at any level. As you move to the last edit block in a measure, the words "Last Block" will be printed in reverse video in the lower section. This reminder is provided because there are several editing commands that must be added in the "last block".

The left arrow key can also be used to move the cursor to the left of the staff to the "Last Block" before the first measure on the line. Note that this edit block is not related to any note and should not be used for adding symbols. It should just be used for entering "Last Block" commands.

The up and down arrow keys are used to move up and down within the part, changing Y-position. Each move will be reflected in a change in the Y-Pos: item at the bottom of the screen. When you move to a new Y-position, the edit block and the X-offset will not be changed.

To jump from above to below the staff or vice versa, you may press CTRL-F. This action "flips" the cursor to Y-position 16 (10 below the staff) or to Y-position 44 (10 above the staff), depending on its current location.

The PF1 and PF2 keys are used to move from part to part. The PF1 key is used to move to the part above. The PF2 key is used to move to the part below. When you move to a new part, you move to the edit block directly above or below. The X-offset will be changed to 0, but the Y-position relative to the new staff will not be changed.

The PF3 and PF4 keys are used to move horizontally, changing X-offset. The PF3 key is used to move to the left and the PF4 key is used to move to the right. Each move will be reflected in a change in the X-Off item at the bottom of the screen. When you move to a new X-offset, the Y-position and the edit block will not be changed.

Remember, to move to the next system in the score, press KP 0.

To summarize the cursor movement keys,

Press ↑ to move up one line or space.
Press ↓ to move down one line or space.
Press ← to move left one edit block.
Press → to move right one edit block.
Press PF1 to move up one staff.
Press PF2 to move down one staff.
Press PF3 to move left one half notehead.
Press PF4 to move right one half notehead.
Press CTRL-F to "flip" above or below the staff.

ADDING TO THE NOTATION

WHAT CAN YOU ADD?

At any cursor position you may enter a variety of information. You may enter text (lyrics, instructions to the musician, etc.) and graphic symbols that will be drawn immediately on the notation. You may also enter two kinds of commands: sequence commands that will change the notes in the memory recorder and transcription commands that will change the way the notes are transcribed when the notation is replotted.

When you enter a sequence command, you directly manipulate the sequence in the memory recorder. For example, you can use sequence commands to correct the pitch or duration of a wrong note, or to square up a note rhythmically, even to add or delete a note. Once a sequence command has performed its function, it is not stored anywhere, nor can it be deleted. The sequence has been changed.

On the other hand, when you add text, musical symbols, and transcription commands, you do not affect the sequence in the memory recorder at all, only the way it is transcribed. Each string of text, each symbol or group of symbols, and each transcription command is called an edit item and is stored in an edit list.

There is one edit list for each part. The Music Printing system will refer to this edit list each time you replot the part and will draw in the symbols and text wherever specified and will obey the commands.

There is also a master edit list for the whole sequence. The Music Printing system will apply any edit items in this list to all parts. For example, you may enter the key signature command into the master edit list to cause a key signature change on all parts at the same place.

SELECTING A VOICE

Before you enter an edit item or a sequence command, you must be sure the correct voice is selected.

If the "Lower" or "Upper" voice is selected, any edit item that you enter will be stored in the edit list for the appropriate part. Since items are stored in the edit list according to location, it doesn't usually matter which of these two voices are selected, particularly when you are adding text or symbols. However, there are certain commands that can be used to change the transcription of one of the voices individually. Some examples are the commands to transpose a voice or to change the note resolution for a voice. With these commands, you must select the correct voice, "Lower" or "Upper", before you enter the command. This distinction will be described in detail in the section on the specific editing commands.

If the "Master" voice is selected, any edit item you add will be stored in the master edit list.

You use the LINEFEED and BACKSPACE keys to choose between "Lower," "Upper," and "Master." The default is "Lower." To move forward from the default, press LINEFEED to display "Upper" and then again to display "Master." To return to the default, press BACKSPACE to display "Upper" and then again to "Lower."

Press LINEFEED to move from "Lower" to "Upper" to "Master." Press BACKSPACE to move from "Master" to "Upper" to "Lower."

HOW TO ADD AN EDIT ITEM OR A SEQUENCE COMMAND

Once you have moved the cursor to the correct position, and selected the correct voice, there are three general methods of adding an edit item or a sequence command: typing on the main keyboard (for text), pressing a key on the keypad (for symbols and commands), and using the TAB procedure (also for symbols and commands).

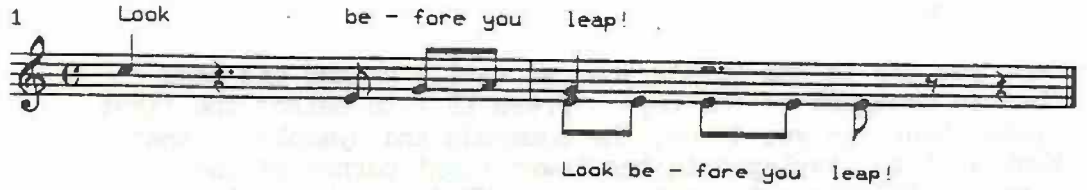
Adding Text

You can add text at any edit position in any edit block. Just position the cursor and type in upper and lower case letters, numbers (use the number keys on the main keyboard), and any printing characters. Press RETURN at the end of the word or other string and you will return to the beginning of the string of text. Or press any of the cursor keys to move to a different location.

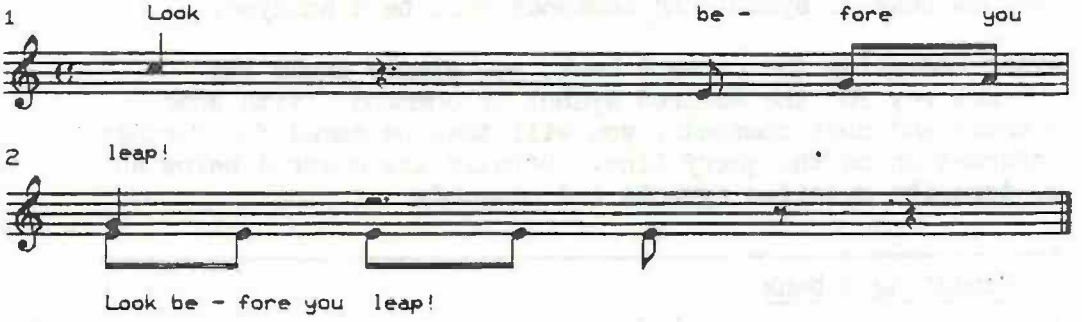
When you type characters or press the spacebar, you are adding to the edit list for the part. However, typing a character or pressing the spacebar does not change the current edit block, the Y-position or the X-offset.

To add lyrics, you will want to link each word or syllable with a particular note, or edit block, rather than just typing them in across the screen. Type the word, then press the right arrow key to move under the next desired note, and type the next word. In this way, the word will be plotted with the correct note, even if you change the note spacing.

The following example shows how this works. The text above the line has been added in the edit blocks of the different notes; the text below the line has simply been typed in, in the edit block associated with the first E in the measure.



When the note spacing is expanded, the text above the line stays with the right notes; the text below the line does not.



Using the Symbol Keys

The eight keys in the third and fourth rows on the keypad may be used to enter symbols or commands. There are six preset banks of symbols and commands that may be assigned to these keys. The figure below shows the symbol or command names for the six preset banks. The symbol names are defined in the Appendix; the commands are described in detail in the "Sequence Commands" and "Transcription Commands."

1	CLEF	RESO	VOX	TUP	ADD	MOVE	PTCH	NOTE
	KEY	TRAN	TRAK	ACCD	DEL	TRIM	DUR	REST

4

2	BBRK	NBRK	SDIR	SPLT	SLUR	TBAR	MID	PED
	BMND	NMND	BDIV	FORM	HPIN	LINE	END	STAR

5

3	TIME	MEAS	OREP	DBAR	F	TENU	DBOW	FERM
	CLIK	NSPC	CREP	BRST	P	MARC	UBOW	GRUP

6

The six banks may also be viewed all at once on the screen in the Keypad Menu which is entered from any menu by pressing KP 3. As described in "Programming the Keypad Menu," this menu is also used to change the symbols and commands assigned to the banks.

Once you are in the Editor you can easily change the bank that is assigned to the keys. Press KP 1 to select the first symbol bank; as you do so, the commands and symbols in that bank will be displayed in the lower right corner of the screen. To change to bank 2, press KP 2; to change to bank 3, press KP 3. Banks 1, 2, and 3 are called the "unshifted" banks. Banks 4, 5, and 6 are called the "shifted" banks. For these, you must first press KP dot and then KP 1 (for bank 4), KP 2 (for bank 5), or KP 3 (for bank 6). Each time, the new bank of symbol and commands will be displayed.

After assigning the correct bank, you simply press the correct key for the desired symbol or command. With some symbols and most commands, you will then be asked for further information on the query line. Details are covered below as we describe specific symbols and commands.

Selecting a bank	
Press KP 1	for Bank 1
Press KP 2	for Bank 2
Press KP 3	for Bank 3
Press KP dot then KP 1	for Bank 4
Press KP dot then KP 2	for Bank 5
Press KP dot then KP 3	for Bank 6

Entering a symbol or command	
Press 7, 8, 9, minus or 4, 5, 6, comma	for symbol or command

Using the TAB Procedure

You can also enter symbols and commands by name. The TAB procedure provides you with access to any of the graphical musical symbols and editing commands available with Revision C.1. A list of all the symbol and command names in the Music Printing Symbol and Command Library appears in the Appendix.

First press the TAB key. Then, in response to the query "Symbol/Command Name:", type in the one- to four-character symbol or command name and press RETURN. You will then be queried for more information if needed.

Press TAB, type symbol/command name, press RETURN.

EDIT MARKS

Each added edit item, be it text, symbol, or transcription command, will produce an edit mark, or light vertical line, on the appropriate edit block. If you are adding a string of text and/or symbols, this line will appear as soon as you press RETURN or move to another edit block, Y-position or X-offset. If you are adding a transcription command, this line will appear as soon as you complete the entry of the command. This line is primarily useful in showing you where your edit items are in case you want to erase them from the edit list.

HOW TO ERASE MISTAKES

As you are entering a symbol or a string of letters, you may press the DELETE key and the letter or symbol to the left of the cursor will be deleted. However, once you press RETURN or change edit block, Y-position or X-offset, the edit item is stored in the edit list and pressing DELETE does nothing.

To delete an edit item once it has been stored in the edit list, you must move to the edit block with which the item is associated, select either the lower or upper voice, and then press CTRL-D. This will erase all the edit items in the edit block, including text, symbols, and transcription commands in both upper and lower voices. You will find the light vertical line helpful in identifying the correct edit block, especially in commands which are not readily apparent, such as the command which transposes notes.

To delete all the edit items in an edit block in the master edit list, move to the appropriate edit block, select the "Master" voice, and press CTRL-D. The edit items on the individual part edit lists will not be erased.

Press DELETE to erase single character or symbol while typing. Press CTRL-D to erase all edit items at edit block.

Remember, you cannot delete a sequence command.

REPLOTTING

When you enter text or symbol, it will be drawn on the screen immediately. When you enter a sequence or transcription command, however, you must replot the screen before you can see any change in the notation. There are two ways to replot. You may simply press CTRL-R. The current system, or screen, will be erased and then replotted. As the computer replots, it will refer to the notes in the memory recorder, as adjusted by any sequence commands, the specifications on the menu, and incorporate the commands in the edit list.

You may also return to the Main Menu by pressing ENTER and then press RETURN to replot the notation. In this case, unless you change the Jump to Measure setting on the Main Menu, you will plot from the beginning of the sequence.

Press CTRL-R to replot current screen. Press ENTER to return to Main Menu, then RETURN to replot.

Pressing KP 0 to plot the next system will not show the result of any new commands added to the current system. For example, if you enter a command which changes the time signature, the new time signature will not appear on the next system unless you have replotted.

ADDING SYMBOLS

A complete list of symbols appears in the Appendix.

When entering a symbol, be sure to use the arrow keys to move to the correct edit block beforehand so that if you replot the notation with a different note spacing, the symbol will still be aligned with the correct note.

With some of the symbols, e.g., the staccato mark (STAC) or the grupetto (GRUP), the query line will ask you to specify a direction for the symbol. Press the up arrow to draw the symbol rightside up; press the down arrow to draw the symbol upside down.

You can mix text and symbols without any problem. You can enter a symbol, change the symbol bank, and then enter another symbol right beside the first. You can add one symbol from a symbol bank and then add another with the TAB procedure.

NOTES, GRACE NOTES, AND RESTS

The NOTE symbol simply draws a note on the notation. You are asked to specify a legitimate note value (i.e., 1,2,4,8,16,32,64, or 128) and a direction (whether you want the stem to face up or down). The GNOT symbol works in the same way, only the note drawn will be a grace note. Grace notes which are eighth notes or smaller will have a slash drawn on them. With the REST symbol, you specify a note value and a rest of equivalent value will be drawn where the cursor is located. Note that these are indeed symbols; they do not affect the music in the memory recorder.

LONG SYMBOLS

There are several long symbols: slurs, straight lines, wedges for crescendos and descrescendos, and tuplet bars. You have control over the length, precise placement, and shape of these symbols. If you change the note spacing, these symbols will be redrawn in correct proportion to the notation.

Each long symbol has a beginning and an end; the slur also has an optional midpoint. First you move the cursor to the beginning (left end) of the symbol and enter the desired long symbol command. This "initiating" command determines the kind of long symbol that will be drawn. Then, if required, you move the cursor to the middle of the symbol and enter the MID command. Finally, you move the cursor to the end (right end) of the symbol and enter the END command. As soon as you complete the END command, the kind of symbol you specified in the initiating command will be drawn between the specified points. The computer will remember the kind of symbol you want and where you want it to begin until you enter the END command or until you leave the screen or enter a different long symbol initiating command. Thus, you can do other editing before entering the END command. Once a long symbol has been drawn on the score, you can delete it by moving the cursor to the edit block of the initiating command and

pressing CTRL-D.

Note that tuplets have their own editing levels whose boundaries should not be crossed with long symbols. If you want to draw a long symbol from inside a tuplet to some point outside it, you must always be on the Base editing level. For details on this, see the description of the TUP command on page 87 in "Adding Transcription Commands."

Here are the specific long symbols:

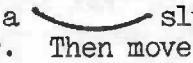
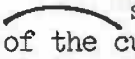
LINE

The LINE command is used to draw a straight line. Place the cursor at the left endpoint of the line and enter the command LINE. Then move the cursor to the right endpoint of the line and enter the command END. A straight line will be drawn between the two points.

SLUR

The SLUR command is used to draw slurs and arcs on your score. You can draw symmetrical or assymetrical curves as required.

Symmetrical curves:

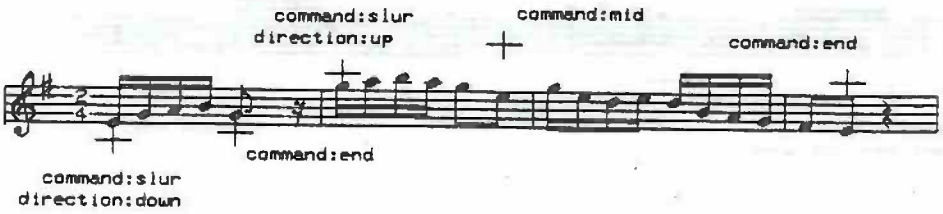
Place the cursor at the left endpoint of the curve and enter the command SLUR. You will then be asked to "Enter direction." Press the down arrow key for a  slur; press the up arrow key for a  slur. Then move the cursor to the right endpoint of the curve and enter the command END. The computer will then draw a symmetrical curve. Long slurs will be flattened and short slurs will be more curvy.

Assymmetrical curves:

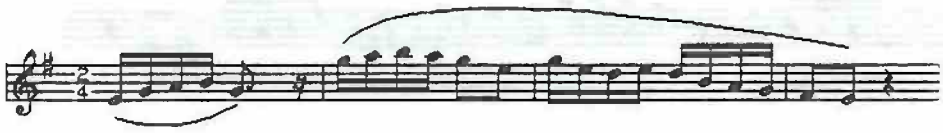
Place the cursor at the left endpoint of the curve, enter the command SLUR and specify the direction as described above (although in this case, the MID command determines the direction). Then move the cursor to the midpoint of the curve and enter the command MID. Finally, move the cursor to the right endpoint of the curve and enter the command END. Selecting the correct extremum will take a little practice. But you can use this procedure to draw almost any curve. You can even draw over/under curves by entering two touching slurs.

The following example shows symmetrical and assymmetrical slurs:

COMMAND POINTS



RESULT



HPIN

The HPIN command is used to draw hairpin wedges for crescendos and decrescendos on your score. You select the point of the wedge and one of the two endpoints at the open end of the wedge. A symmetrical wedge will be calculated and drawn.

First place the cursor on the left endpoint of the wedge. This can either be the point of the wedge (for crescendos) or one of its legs (for decrescendos). Then enter the command HPIN. Then you will be asked to "Enter direction". Press the right arrow key to indicate a crescendo; press the left arrow key to indicate a decrescendo.

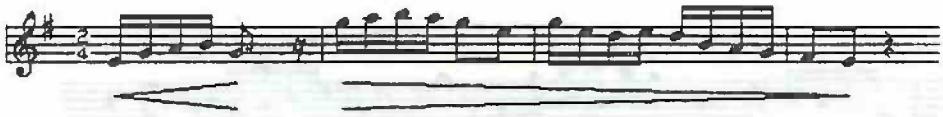
Then, for a crescendo, move the cursor to the endpoint of one of the legs. For a decrescendo, move the cursor to the point of the wedge. In either case, the cursor position should be to the right and either above or below the point where you entered the HPIN command. By varying the vertical distance, you can make wider and narrower wedges.

At this location, enter the END command.

The following example shows crescendos and decrescendos.

COMMAND POINTS

RESULT



TBAR

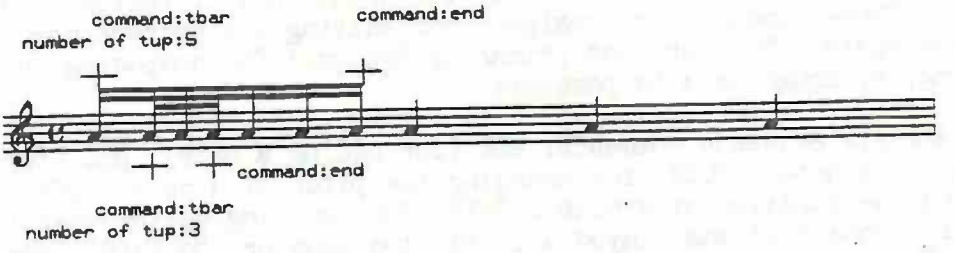
The TBAR command is used to draw a numbered or unnumbered bar over or under a tuplet. (You will want to use this command after you enter the TUP command to transcribe a tuplet as described on page 87.)

Place the cursor over or under the first note in the tuplet and enter the command TBAR. You will then be asked to "Enter direction." Press the down arrow key for a bar; press the up arrow key for a bar. Then you will be asked for a "Tuplet count". Type any number and press RETURN. Or, simply press RETURN for an unnumbered bar. Then move the cursor to the right end of the tuplet and enter the END command. Do not move out of the tuplet.

The bar can be drawn on an angle or straight as desired. The number will be placed in the middle of the bar.

The following example shows two tuplet bars.

COMMAND POINTS



RESULT

ADDING SEQUENCE COMMANDS

Sequence commands are used to change, add, or delete single notes in the sequence. Each sequence command will change the way the sequence sounds. And, after it is replotted, the notation will reflect the change. These commands are designed for editing and correcting recorded music. They are not primarily designed for composing and creating, although this is possible.

There are six sequence commands; ADD (for adding a note), DEL (for taking out a note), PTCH (for changing the pitch of a note), DUR (for changing the duration of a note), TRIM (for squaring up the starting time of a note that was played a little too soon or too late), and MOVE (for moving a note up or back in time).

The starting times of notes will not be affected by any sequence commands applied to any earlier notes in the sequence. For example, if you DEL(ete) a note, a rest will be put in its place. The following notes will not be moved forward.

ENTERING COMMANDS

Before you enter a sequence command, move the cursor to the edit block of the note you wish to delete or change or to the edit block where you wish to add a note.

You then enter the command by pressing the appropriate symbol key or using the TAB procedure. Then, in response to a prompt, you enter information, such as a pitch or a note value. If you make a typo in your response, you can erase it by pressing the DELETE key. Complete the response by pressing RETURN. If you press RETURN without entering any response, the command will simply be aborted. If you press RETURN after entering an unacceptable response, a command will be aborted and there will be an explanatory error message.

As soon as you complete the command, you can hear the change by pressing CTRL-P and returning to the Real-Time system.

REPLOTTING

You must replot the current system before you can see the effect of the command on the notation. To do so, press CTRL-R (to replot the current system) or press ENTER (to go the Main Menu) and RETURN (to replot from the beginning).

CHANGING SEQUENCE COMMANDS

Sequence commands change the sequence as soon as you press RETURN to complete the command; they cannot be deleted. For example, if you use the ADD command to add a note and you specify the wrong pitch for the note, you cannot use CTRL-D to delete the wrong note. Your options are to use the DEL command to delete the note and then start over or to use the PTCH command to change the pitch of the wrong

note.

In some cases, for example if you delete a guitar note that was recorded with raw pitch, it will not be possible to return to the original. Never delete only the first note in a guitar pitch bend.

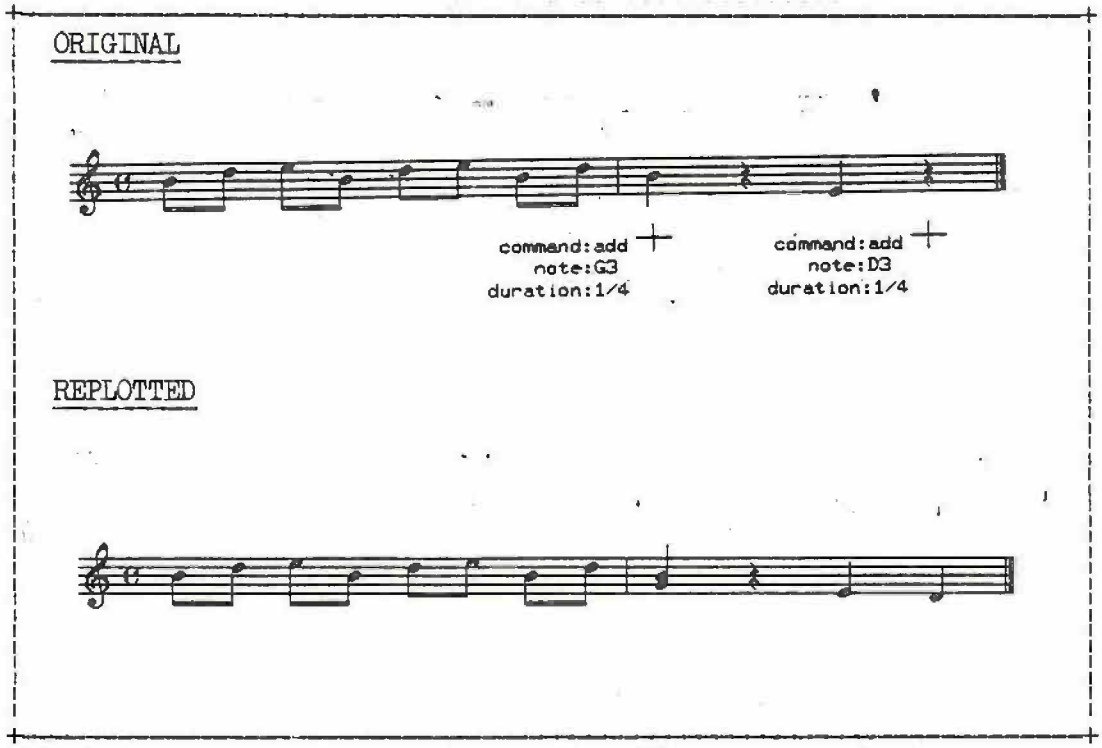
NOTE: You cannot move a note off the screen in either direction or make its duration extend off the screen. If necessary, use the "Jump to Measure" parameter to change the measures on the screen so that the start and end of the new or moved note will be visible on the screen.

ADD

The ADD command is used to add a new note to the sequence, as well as to the notation. The note can be placed anywhere, be of any pitch, and of any duration. You can add a note on top of a rest or you can add a note on top of another note and thus make a chord.

Cursor position:	Edit block where you want the note to appear. This edit block will determine the starting time of the note.
Voice:	Select either upper or lower voice. The note will be added to the sequence on the track specified for the selected voice. Do not use the Master voice.
Prompt-1:	Note (concert pitch):
Response:	Any SCRIPT pitch. Pitch letter, followed by # (sharp) or F (flat), and/or octave number. Default octave is 3. Use the concert pitch, not the transposed pitch.
Prompt-2:	Duration:
Response:	A fraction where the denominator is any legitimate note value and the numerator is the number of those units in the note; e.g., 1/4 (quarter note), 3/8 (dotted quarter).
Effect:	Adds note to sequence in memory recorder.

The following example shows two ADD commands:



DEL

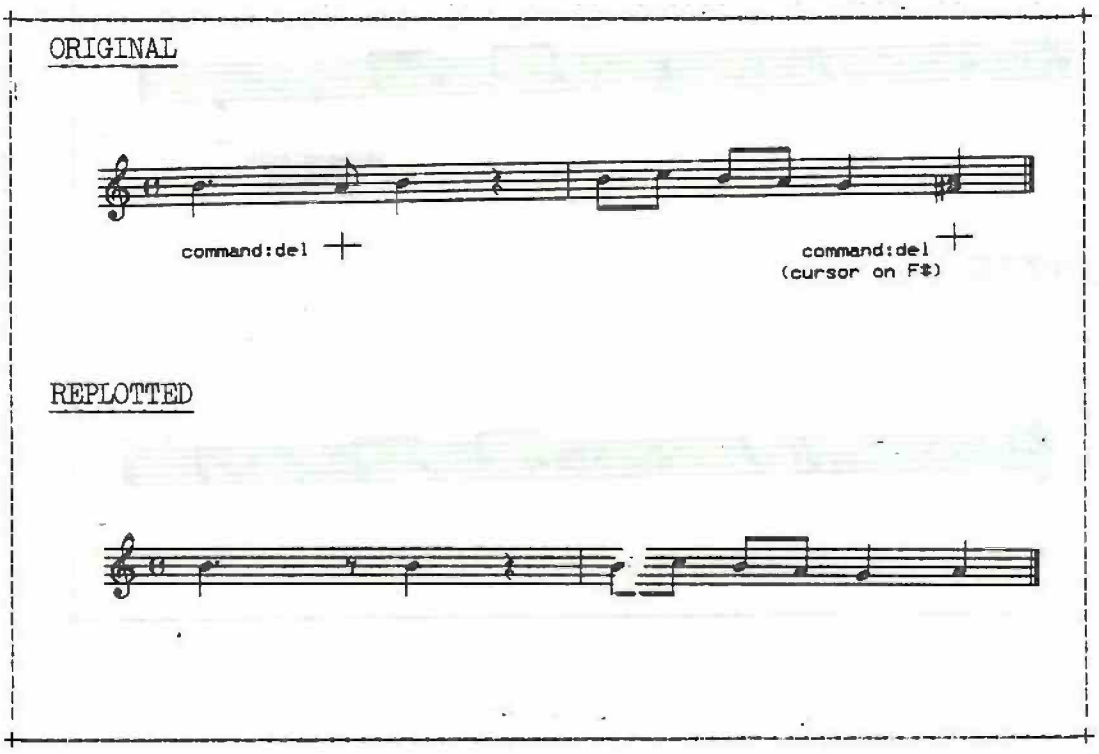
The DEL command is used to delete a note from the sequence in the memory recorder, as well as from the notation.

You cannot use this command to delete a rest. If you have an unwanted rest, you can ADD a note on top of it or lengthen the duration of the preceding note with the DUR command.

Do not delete just the initiating note in a guitar pitch bend.

Cursor position:	Edit block of the note to be deleted. If the note is in a chord, first enter the DEL command, then move the cursor to the correct note with the up or down arrow keys, then press RETURN.
Voice:	Voice selection does not matter.
Prompt:	None.
Effect:	Deletes the note from the sequence in the memory recorder.

The following example shows the DEL command.

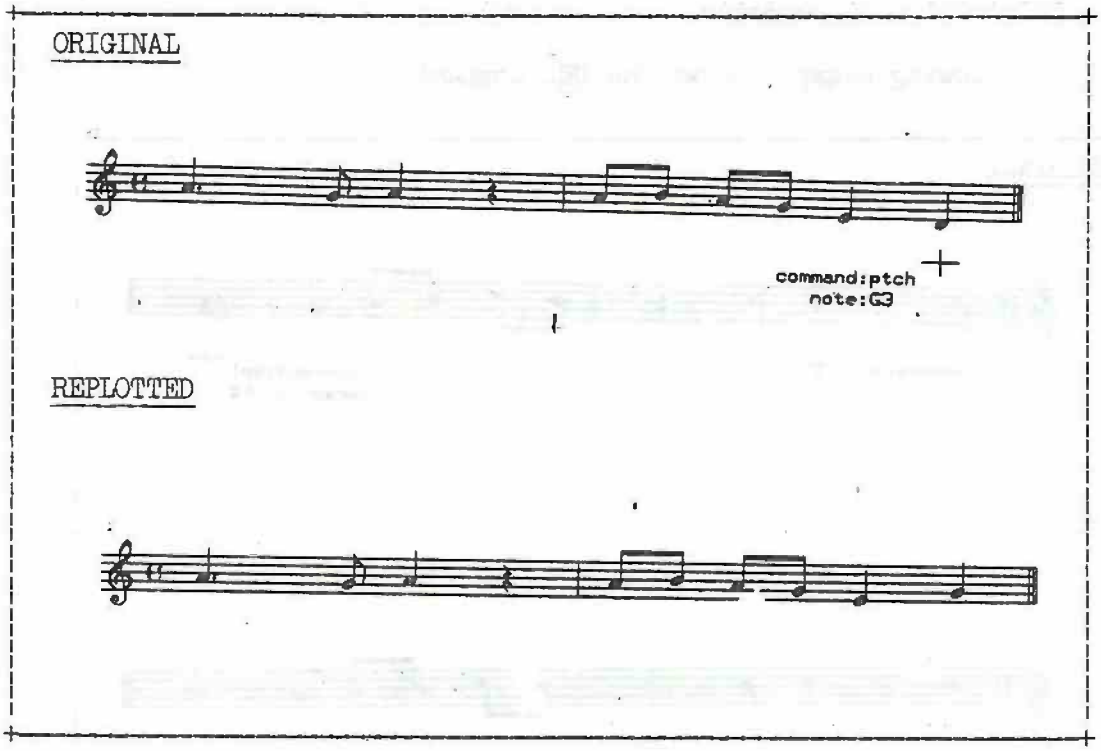


PTCH

The PTCH command is used to correct or change the pitch of a note in the memory recorder as well as its notated pitch on the staff.

Cursor position:	Edit block of the note. If the note is in a chord, you first enter PTCH command, then move the cursor to the correct note with the up and down arrow keys, then press RETURN.
Voice:	Voice selection does not matter.
Prompt:	Note (concert pitch):
Response:	Any SCRIPT pitch. Pitch letter, followed by # (sharp) or F (flat), and/or octave number. Default octave is 3.
Effect:	Changes the pitch of the selected note in the memory recorder.

The following example shows the PTCH command.

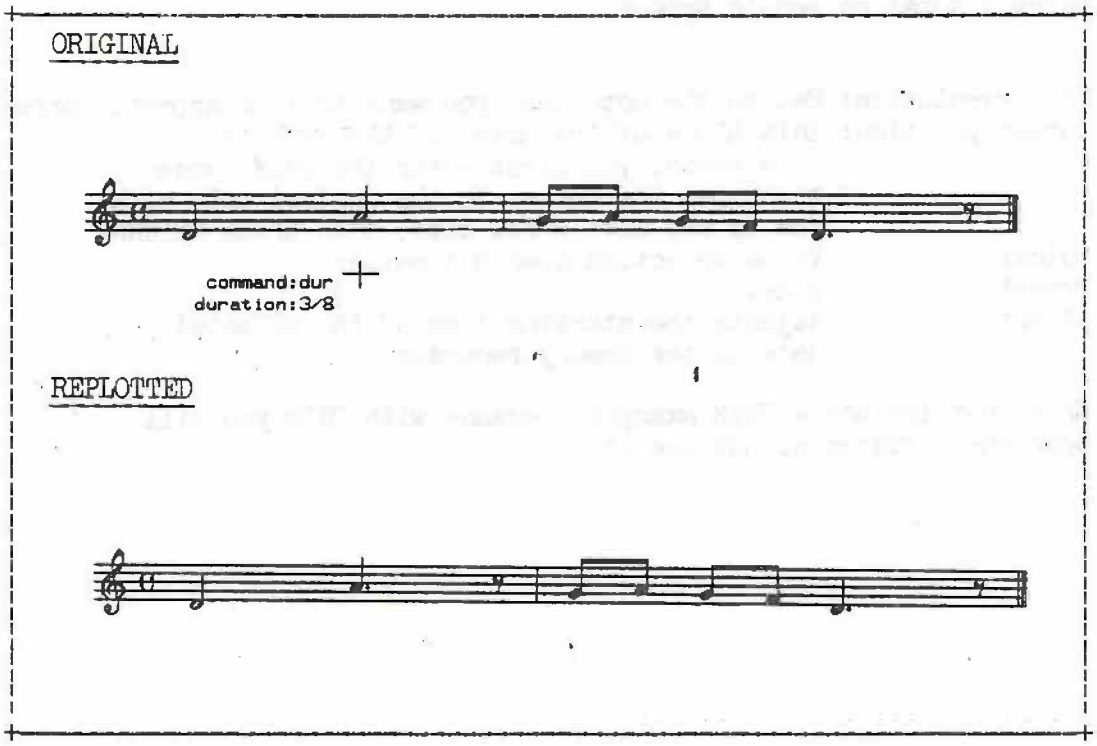


DUR

The DUR command is used to correct or change the duration of a note in the memory recorder as well as its notated duration on the staff.

Cursor position: Edit block of the note. If the note is in a chord, you first enter the DUR command, then move the cursor to the note with the up and down arrow keys, then press RETURN.
Voice: Voice selection does not matter.
Prompt: Enter duration:
Response: A fraction where the denominator is any legitimate note value and the numerator is the number of those units in the note; e.g., 1/4 (quarter note), 3/8 (dotted quarter).
Effect: Changes the duration of the selected note in the memory recorder.

The following example shows the DUR command.



TRIM

The TRIM command is used to square up or justify a note rhythmically with a note resolution block. It is used to square up those notes that are only "off" a little.

First make sure the note appears to start in the right place. (You may need to change the note resolution. As stated previously, the initial note resolution for a part is set on the Score Menu; there is also the RESO command which is used to change the note resolution in the middle of the part. This is described below on page 85.) Then move the cursor to the edit block with the misplayed note and enter the TRIM command. This will square up the starting time of the note in the recorder. The note now will occur at the same exact point in the sequence as in the notation.

Sometimes, due to the starting time of a note, you can enter a DUR command and the note will still not be the correct duration. If you then enter a TRIM command, a note of the correct duration should appear.

Note resolution:	Set so the note that you want to trim appears correct.
Cursor position:	Edit block of the note. If the note is in a chord, you first enter the TRIM command, then move the cursor to the desired note with the up and down arrow keys, then press RETURN.
Voice:	Voice selection does not matter.
Prompt:	None.
Effect:	Adjusts the starting time of the selected note in the memory recorder.

We do not include a TRIM example, because with TRIM you will hear the difference, not see it.

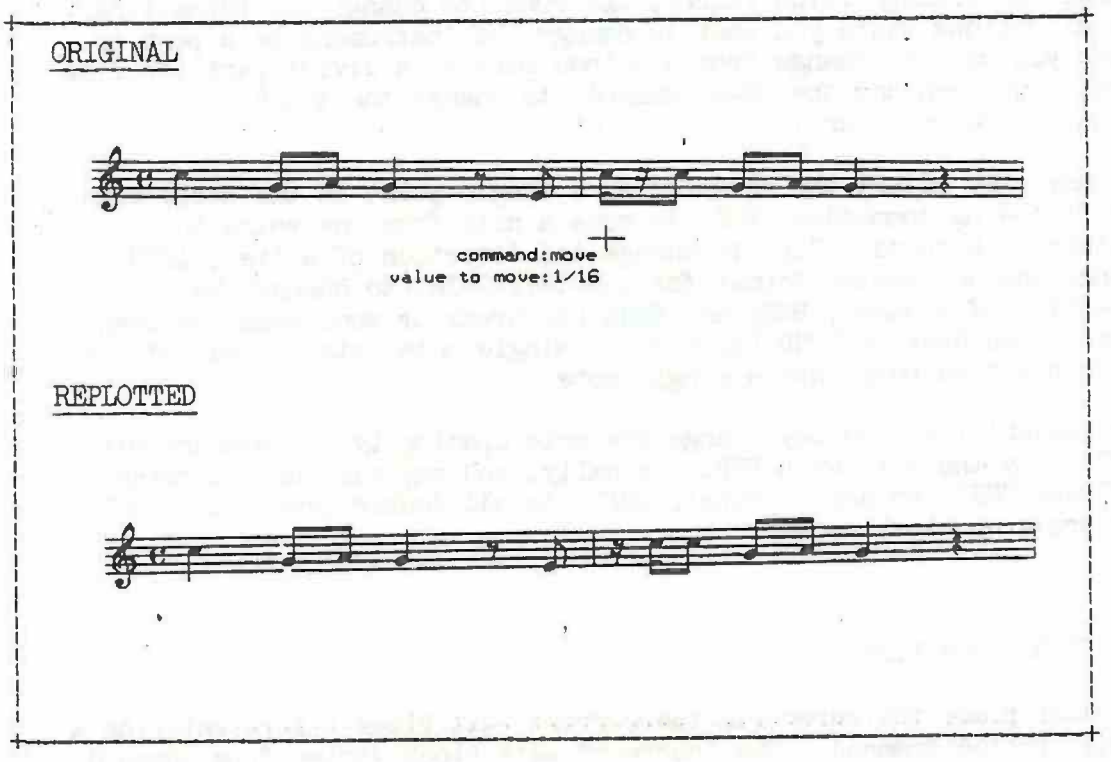
MOVE

The MOVE command is used to change the starting time of a note to a different note resolution block.

Do not move a note beyond the line on the screen or from within to outside of a tuplet.

Cursor position:	Edit block of the note. If the note is in a chord, you first enter the MOVE command, then move the cursor to the note with the up and down arrow keys, then press RETURN.
Voice:	Voice selection does not matter.
Prompt:	Enter value to move:
Response:	A fraction as described above under DUR. To move backward in time, precede fraction with a minus sign.
Effect:	Changes the starting time of the selected note in the memory recorder.

The following example shows the MOVE command:



ADDING TRANSCRIPTION COMMANDS

The transcription parameters specified on the menus determine how a sequence will be transcribed initially. Transcription commands are used to adjust the notation to fit the music throughout and to make localized adjustments in spacing and formatting. They allow you to produce a final copy that is accurate, readable, and of professional quality.

For instance, the rhythmic elements will frequently change in the middle of a piece of music. There are five rhythmic commands that can be used to adjust the transcription of a sequence so that it accurately represents such changes: TIME (to change the time signature), CLIK (to change the click note), MEAS (to create a short measure - such as a pickup measure), RESO (to change the note resolution), and TUP (to transcribe irregular rhythmic groups correctly).

Five other commands can be used to change the way a passage of notes has been notated: CLEF (to change the clef), KEY (to change the key), SPLT (to change the split point on a grand staff), TRAN (to change the transposition value), and FORM (to change the formatting). For situations where you want to change the instrument on a part or where you want to change from a unison part to a divisi part (or vice versa), you can use the TRAK command (to change the track used for either voice on a part).

You may also adjust the notation at a single point in the score with the following commands: VOX (to move a note from one voice to another in a chord), TIE (to change the direction of a tie), ACCD (to change the accidental format for a note), SDIR (to change the direction of a stem), BBRK and BMND (to break or mend beams between notes), and NBRK or NMND (to break a single note into a tied note or to turn a tied note into a single note).

For readability, you may change the note spacing by the measure with NSPC or by the note with BSPC. Finally, you may add the following: OREP and CREP (to add repeats), DBAR (to add double bars), and BRST (to break up block rests).

THE CURSOR POSITION

You must place the cursor in the correct edit block before entering a transcription command. The "correct" edit block varies from command to command, depending on the particular function of the command. Note in particular, there are several "Last Block" commands that must be entered in the last block before the measure where they are to take effect. These are TIME, CLIK, MEAS, RESO, and TRAK.

Other commands must be entered in the edit block of the note, others in the first block in the measure, and so forth. Specific information on cursor position will be presented for each command.

Note that for most commands affecting a tied note, you must place the

cursor under the first note under the tie. Subsequent notes under the tie are not really notes. However, there are two commands (TIE and NMND) where you can address the subsequent notes.

THE CORRECT VOICE

Selecting the correct voice is also important. If you wish to enter a command which will affect the transcription of only one voice (such as TRAN or TRAK), you must select the correct voice, "Lower" or "Upper." For other commands it doesn't matter, either because the command applies to both voices in the part (such as CLEF or KEY) or because the command applies to selected notes only (such as TIE). For still other commands, you may wish to select the Master voice so that the command will be applied to all parts.

Finally, the following commands must be applied to all parts at the same point in the music: TIME, CLIK, MEAS, NSPC, BSPC, OREP, CREP, and DBAR. Hence, whatever voice is currently selected, they will automatically be placed in the master edit list.

Specific information on voice selection will be presented for each command.

ENTERING THE COMMAND

You enter a transcription command just as you would a sequence command, by pressing a symbol key or using the TAB procedure. Then, in response to a prompt, you enter information, such as a key signature in the KEY command or a note resolution value in the RESO command, that establishes a value for the command. If you make a typo in your response, you can erase it by pressing the DELETE key. Complete the response by pressing RETURN.

If you press RETURN without entering any response, the command will simply be aborted. If you press RETURN after entering an unacceptable response, a command will be aborted and there will be an explanatory error message.

REPLOTTING

You must replot the current system before you can see the effect of the command. Remember, press CTRL-R (to replot the current system) or press ENTER (to go the Main Menu) and RETURN (to replot from the beginning). If you move to the next system by pressing KP 0, you will not see the effect of any commands that have not been replotted. Thus, if you add a command to change the time signature and then press KP 0 without replotting the current system, the next system will not be plotted with the new time signature.

Normally when you are editing a score, you will insert several editing commands before replotting. But, until you are familiar with the commands, you should replot each time you insert a command so that you can see the results clearly.

DELETING COMMANDS

You can delete any transcription command with CTRL-D. Do not enter the opposite command, since then both commands would be stored on the edit list and it would be somewhat a matter of chance which one would be obeyed. For example, if you have entered a BBRK command to break the beam between two eighth notes, do not enter the BMND command to reconnect the beam. Simply erase the BBRK command with CTRL-D.

When you press CTRL-D you will remove all editing from the edit block. This includes the commands in the lower and upper voices, as well as any text or symbols.

If a command is stored in the master edit list, you must be in the master voice to delete it. This includes all commands that are automatically applied to the master edit list, even in a single instrumental part. That is, to delete TIME, CLIK, MEAS, NSPC, BSPC, OREP, CREP, and AR commands, you must be in the master voice.

ORDER OF EDITING

Soon you will develop your own editing "style". However, since Music Printing transcribes the score on a measure by measure basis, you should, as a rule, edit on a measure by measure basis as well. That is, you should edit a measure, replot it if necessary, and then proceed to the next measure.

Moreover, there are a few specific rules regarding the order in which you must enter VOX, ACCD, TIE, RESO and TUP commands. These rules are described along with the commands.

Also in general, you should do all editing that changes note spacing first (i.e., add all transcription and sequence commands), then print a rough draft, and then add symbols. This way long symbols, etc., will be correctly drawn.

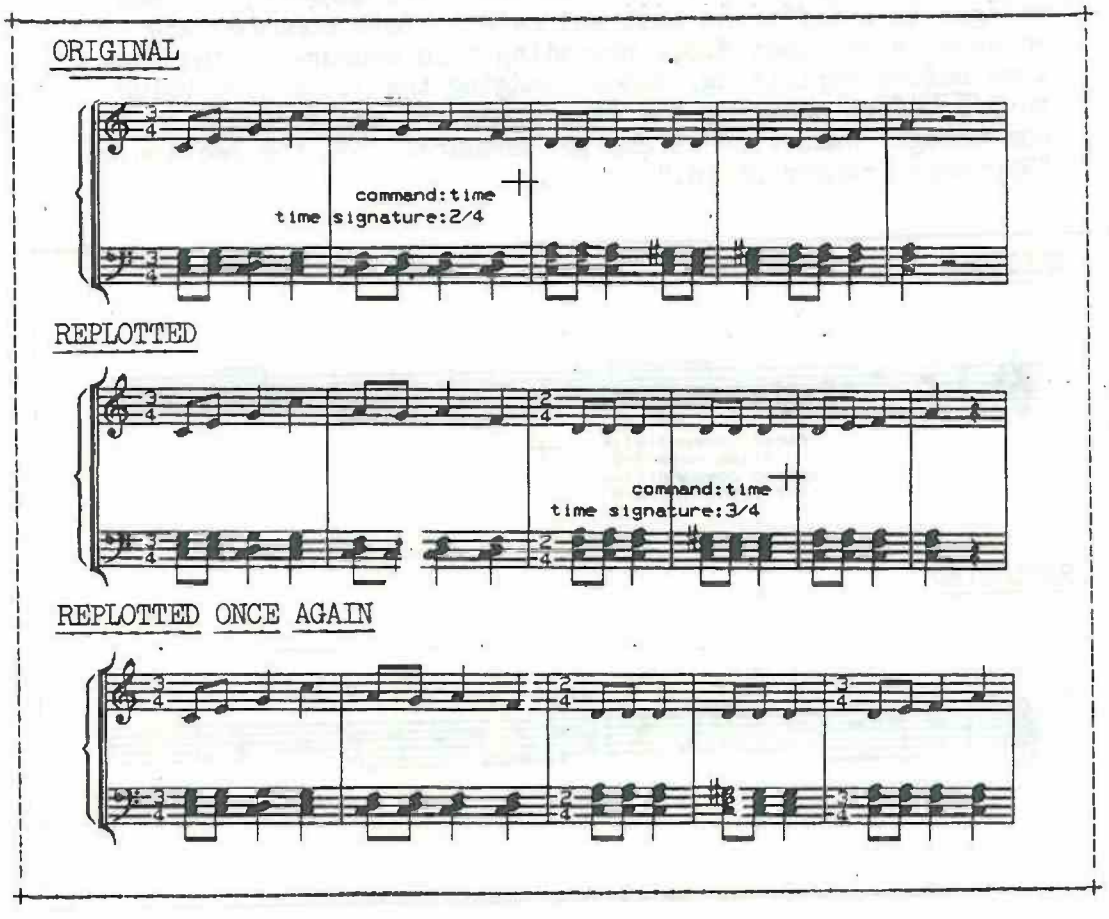
TIME

The TIME command is used to change the time signature in the middle of the piece.

Cursor position:	Last Block preceding the measure with a new time signature.
Voice:	Voice selection does not matter. (The TIME command will automatically be stored in the master edit list.)
Prompt:	Time signature:
Response:	Any time signature fraction as described under Time Signature on the Main Menu. Do not violate any of the rhythmic relationships specified in the section "Rhythmic Transcription."
Effect:	Changes time signature for subsequent measures. If this command occurs during a block rest, it will break the block rest.

NOTE: You must be in the master voice to delete a TIME command.

The following excerpt (Bartok, For Children) shows a series of TIME commands.



CLIK

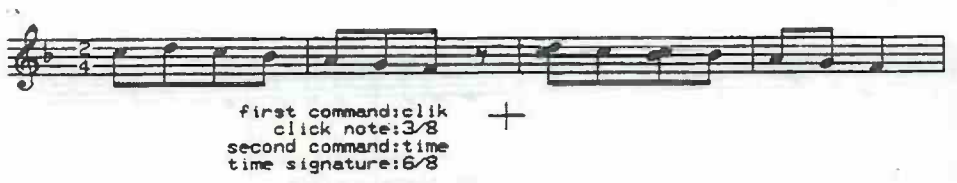
The CLIK command is used to change the value of the click note.

Cursor position:	Last block preceding the measure with a new click note.
Voice:	Voice selection does not matter. (The CLIK command will automatically be stored in the master edit list.)
Prompt:	Click note:
Response:	Any click note fraction as described under Click Note on the Main Menu. Do not violate any of the rhythmic relationships specified on in the section on "Rhythmic Transcription."
Effect:	Changes rhythmic values of all subsequent notes by changing the relationship of the beat to the click.

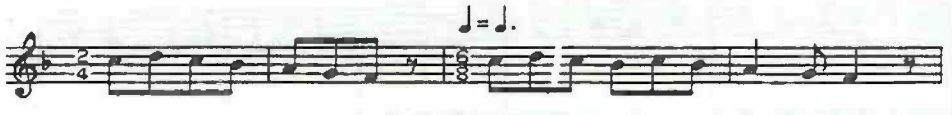
NOTE: You must be in the master voice to delete a CLIK command.

The following example shows the CLIK command as well as the TIME command. The example begins with a click note of 1/4 and a time signature of 2/4. At the third measure, the music changes to a different beat and meter. Both commands are entered in the Last Block preceding this measure at the same time before replotting, since changing the click note value to 3/8 before changing the time signature would result in a non-integer number of clicks per measure. See the section on "Rhythmic Transcription."

ORIGINAL



REPLOTTED



MEAS

The MEAS command is used to change the number of beats in a single measure. The notation will then continue with the established time signature. Mostly, this command is used to establish "pickup" measures. It can also be used to set up the short measures at the end of a piece or anywhere else.

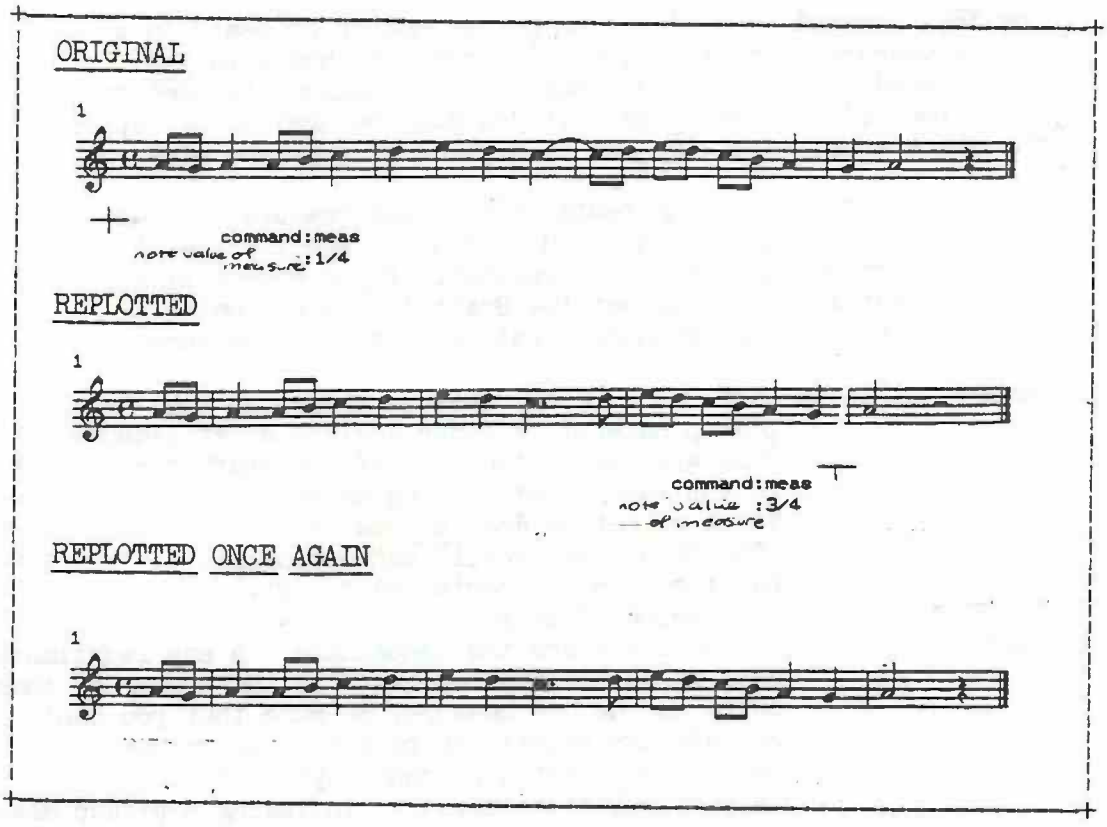
To get rid of the leading rests in a pickup measure, you use the Start at Click item on the Main Menu to specify the click of the first actual note. For example, if you have a pickup note on beat 4, you would set the Start to Click item to 4 and then enter a MEAS command creating a one note measure.

Cursor position:	Last Block in the measure preceding the pickup note(s) or other desired short measure. This will be to the left of the staff for a pickup measure at the beginning.
Voice:	Voice selection does not matter. (The MEAS command will automatically be stored in the master edit list.)
Prompt:	Note value of measure.
Response:	A fraction where the denominator is any legitimate note value and the numerator is the number of those units in the new measure. Be sure that you don't violate the relationships described in the section on "Rhythmic Transcription." In particular, no measure, including a pickup measure, can have a non-integer number of clicks. Thus, if you're planning on a pickup measure with a single eighth note or three eighth notes, you should set the click rate at one click for every eighth note before recording.
Effect:	Changes the length of the next measure to equal the specified note value. The measure after the short one will have the established time signature.

NOTE: You must be in the master voice to delete a MEAS command.

(More on MEAS on next page.)

The following example shows two MEAS commands.



RESO

The RESO command is used to change the note resolution value in the middle of the piece.

Cursor position: Last Block preceding the measure in which a new note resolution is desired.
Voice: Voice selection does matter. Select:
a) Lower to change lower voice resolution
b) Upper to change upper voice resolution
c) Master to change resolution on all parts
Prompt: Resolution:
Response: Legitimate note value.
Do not violate any of the rhythmic relationships specified on in the section on "Rhythmic Transcription." Also, if this number is greater than that specified for the Edit Resolution, the note resolution will be changed to equal the edit resolution.
Effect: Changes the shortest note value to be notated.

The following example shows the RESO command.

ORIGINAL

REPLOTTED

Note that it is possible to temporarily "lose" a note between two measures if you change from a smaller to larger note resolution value. Consider a situation where you are changing from quarter note to sixteenth note resolution. In this case, a note could fall into a "hole" because its starting time is too late to be rounded off to the last quarter note in the first measure and also too early to be rounded off to the first sixteenth note in the second

measure. If a note disappears when you make a RESO change, return to the original resolution. The missing note will reappear. Then, move the cursor to the edit block with the note and enter the TRIM command as described above. This will square the starting time of the note to the note resolution block. Now you may change the resolution in the second measure and the note will not disappear.

It is possible to have different RESO commands in the upper and lower voices. However, if both voices come from the same track, you must enter the RESO commands for both voices first before you enter any VOX or ACCD commands. Then turn off the upper voice at the Main Menu (unless you have used a TRAK command to change the track somewhere), go to the measure, and enter the VOX and ACCD commands as described on pages 99 and 102 respectively. Then turn on the upper voice again.

TUP

(Note that this explanation is fairly long. For a summary, turn ahead four pages.)

If your sequence contains irregular rhythmic groups of notes, such as triplets and quintuplets, the computer will initially round them off into the note blocks set up by the current note resolution and time signature. The TUP command is used to fit additional blocks into the measure so the notes will be transcribed correctly. You tell the computer the type of tuplet you want and the total duration of the tuplet.

Suppose your sequence has a passage of eighth-note triplets. If your note resolution is 16 and your time signature is 4/4, they will be initially plotted as follows (if the Modern notation style is selected on the Score Menu):

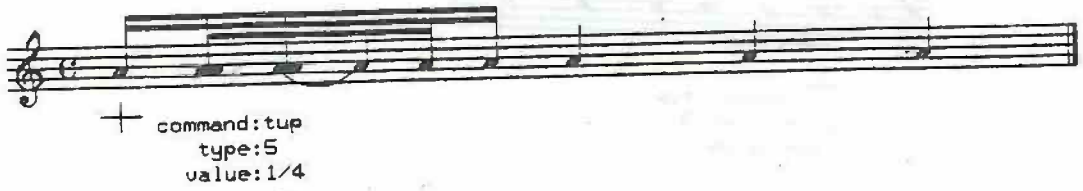
The first and last eighth notes in the triplet will be forced into sixteenth note resolution blocks. You can use a TUP command to change those sixteenth notes into eighth note triplets. After entering the TUP command, you specify 3 (for triplet) for tuplet type and 1/4 (for quarter note) for tuplet length. Replotting will add additional note resolution blocks to the measure and turn the sixteenth notes into eighth notes:

Once you have created your tuplet, you can use the TBAR symbol to draw a numbered or unnumbered bar over the tuplet; see page 68.

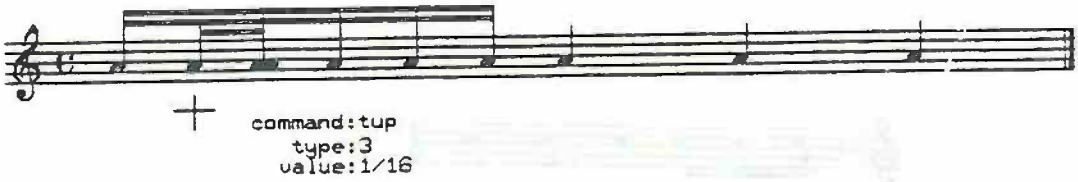
Nested Tuplets

Sometimes your music will have tuplets within tuplets. Music Printing allows for nesting of up to three levels of tuplets. Each time you enter the TUP command on the first note of the tuplet, specify the type of tuplet, and the length in terms of the note values of the level you are currently on. You cannot enter a nested tuplet until you have replotted the system with the TUP command for the tuplet in which it is nested.

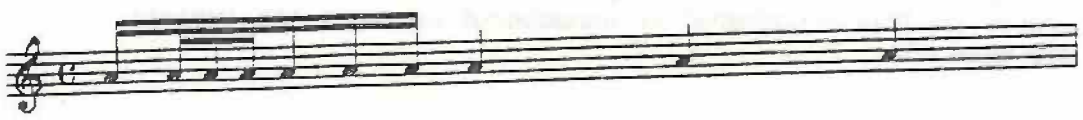
The figures below shows how to create a triplet within a quintuplet. The first figure shows the way the notes will originally be transcribed. The note resolution is 32 in this example. The quintuplet is created by adding a TUP command in the first edit block. The type is 5 for quintuplet. The length is 1/4 because the quintuplet is as long as a quarter note.



The next figure shows the replotting of this command. At this point, the triplet is created by adding another TUP command. The type is 3 for triplet. Since the three notes occur during one sixteenth note in the quintuplet, the specified length is 1/16.



The next figure shows the triplet nested within the quintuplet.

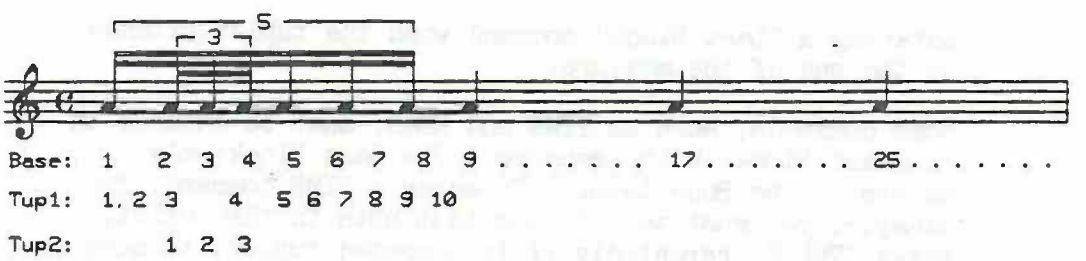


Editing Levels in Tuplets

Each tuplet has its own editing "level." This level consists of a set of additional edit blocks which allow you to move to and edit each note in the tuplet.

The original edit blocks in the measure are in the Base editing level. The first tuplet is in the Tup1 level. A tuplet within this tuplet is in the Tup2 level, and so on. You automatically enter the correct level whenever you move the cursor into the tuplet and move down a level when you move the cursor out of the tuplet.

The figure below shows the different edit levels and edit blocks for our previous example.



Note that, just as the edit blocks are counted from 1 at the beginning of the measure, they are also counted from 1 within each tuplet.

The Master voice is always in the Base level and cannot have tuplets.

Sometimes you will want to move through a tuplet in the Base level or in a lower level in a nested tuplet. Press CTRL-V to force the editing level down one level. You will stay in the lower level until you leave the tuplet and then re-enter it.

There are three major situations when you will want to be in a lower level.

1. Deleting a tuplet command.

   Each TUP command is stored in the level in which the command was entered in the edit block of the first note in the tuplet. To remove the command, you must move to the first note in the tuplet, press CTRL-V to move down a level, and then press CTRL-D. Note that when you do this, you will erase not only the TUP command but also all the editing that you have added within the tuplet.

2. Adding a long symbol which extends beyond the boundaries of the tuplet (long symbols are described on page 65).

   For example, to add a slur linking a tuplet with other notes, you should press CTRL-V to move down to the Base level. Then position the cursor and add the SLUR symbol; move to the end of the slur and add the END command. If the end of the slur happens to be in a different tuplet, be sure to press CTRL-V again to move down to the Base level. Remember, you can use the PF3 and PF4 keys for fine horizontal adjustments.

3. Entering a "Last Block" command when the tuplet extends to the end of the measure.

   Some commands, such as TIME and MEAS, must be entered in the Last Block in the measure. The Last Block only exists in the Base level. To enter a TIME command, for example, you must move to the last note in the tuplet, press CTRL-V, repeatedly if in a nested tuplet, to move down to the Base level. Then press the right arrow key until LAST BLOCK appears. At this time you can enter the TIME command.

   Note: Whenever you move the cursor to the left of the staff, you will be in the Last Block before the first measure on the line and in the Base level.

Tuplets in Two Voices

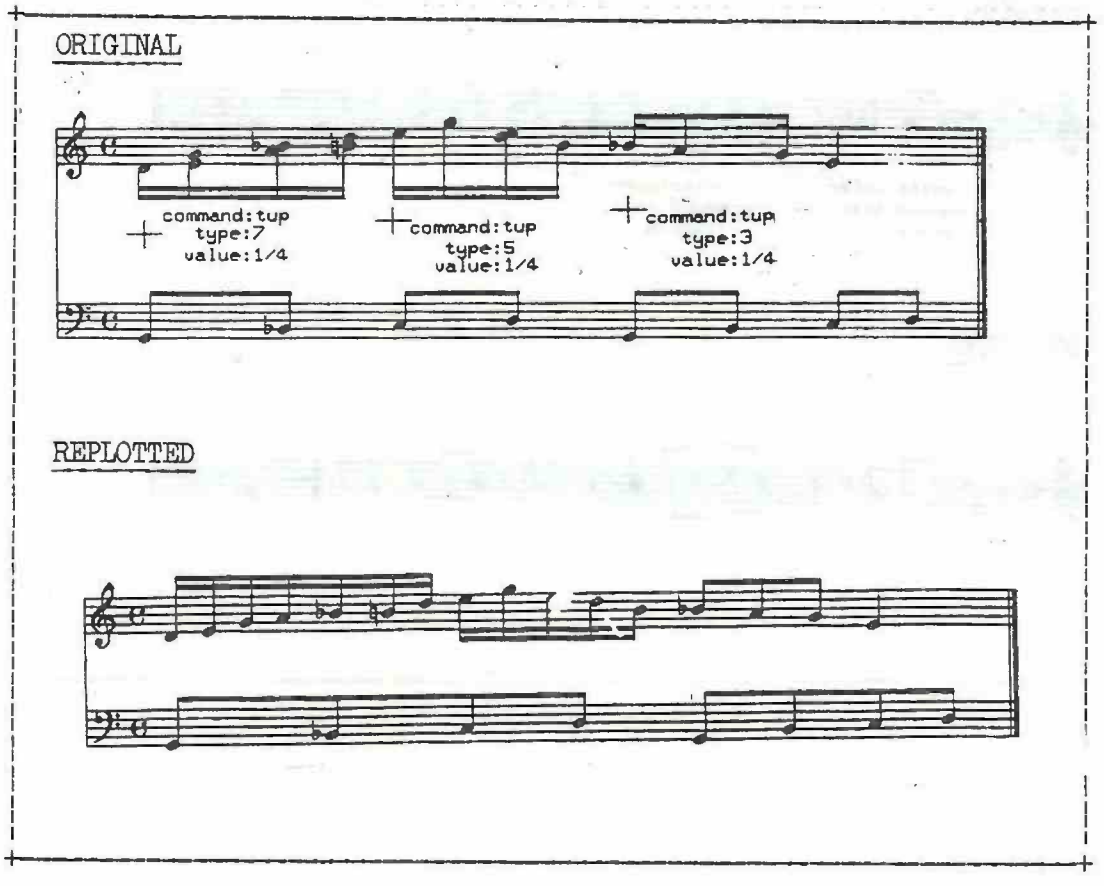
Music Printing also allows you to set up different rhythmic structures on the upper and lower voices in the same part. If there are two voices, simply select the correct voice before you enter your TUP command or commands. Deleting (with CTRL-D in the Base level) will erase tuplets in both the upper and lower voice if they both originate from the same edit block.

If both voices come from the same track and have different tuplet structures, you must enter the TUP commands for both voices before you enter the VOX or ACCD commands. Then turn off the upper voice, either on the Score Menu or with the TRAK command, go to the measure, and enter the VOX and ACCD commands as described on pages 98 and 101 respectively. Then turn on the upper voice again.

To summarize TUP:

Cursor position:	Edit block of the first note in the tuplet.
Voice:	Voice selection does matter. Select: a) Lower to add tuplet to lower voice b) Upper to add tuplet to upper voice Do not select master voice.
Prompt-1:	Tuplet type:
Response:	Number of the type of tuplet you wish to transcribe, e.g., 3 for triplets, 2 for duplets, 5 for quintuplets, 7 for septuplets.
Prompt-2:	Time value:
Response:	A fraction indicating the length of the tuplet group. The denominator is any legitimate note value and the numerator is the number of those units in the segment. For example, you would enter 1/4 if the tuplet is as long as a quarter note; or 1/2 if the tuplet is as long as a half note. The tuplet cannot extend beyond the measure bar.
Effect:	Creates a special rhythmic block of the type and length specified and fits the notes into this block.

The following example shows the TUP command.



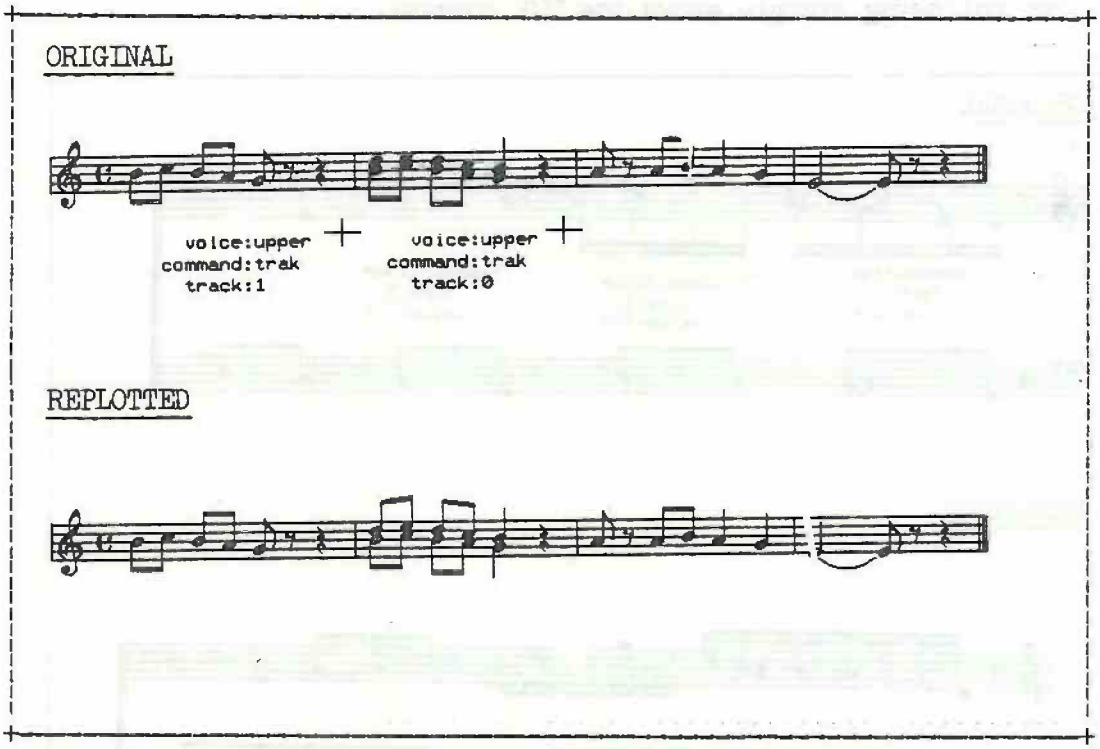
TRAK

The TRAK command is used to change the track specified for one of the voices on the part.

Cursor position: Last Block before the measure where you want a different track.
Voice: Voice selection does matter. Select:
a) Lower to change track for lower voice
b) Upper to change track for upper voice
Prompt: Track:
Response: For the lower voice, you may specify a number from 1 to 16. For the upper voice, you may specify a number from 0 to 16; specifying 0 will remove the upper voice.
Effect: Changes the track for the voice.

NOTE: If the upper voice is silent for a measure or more, you can use the TRAK command to turn off the upper voice.

The following example shows the use of the TRAK command to create a Divisi part and then to return to a Unison part.

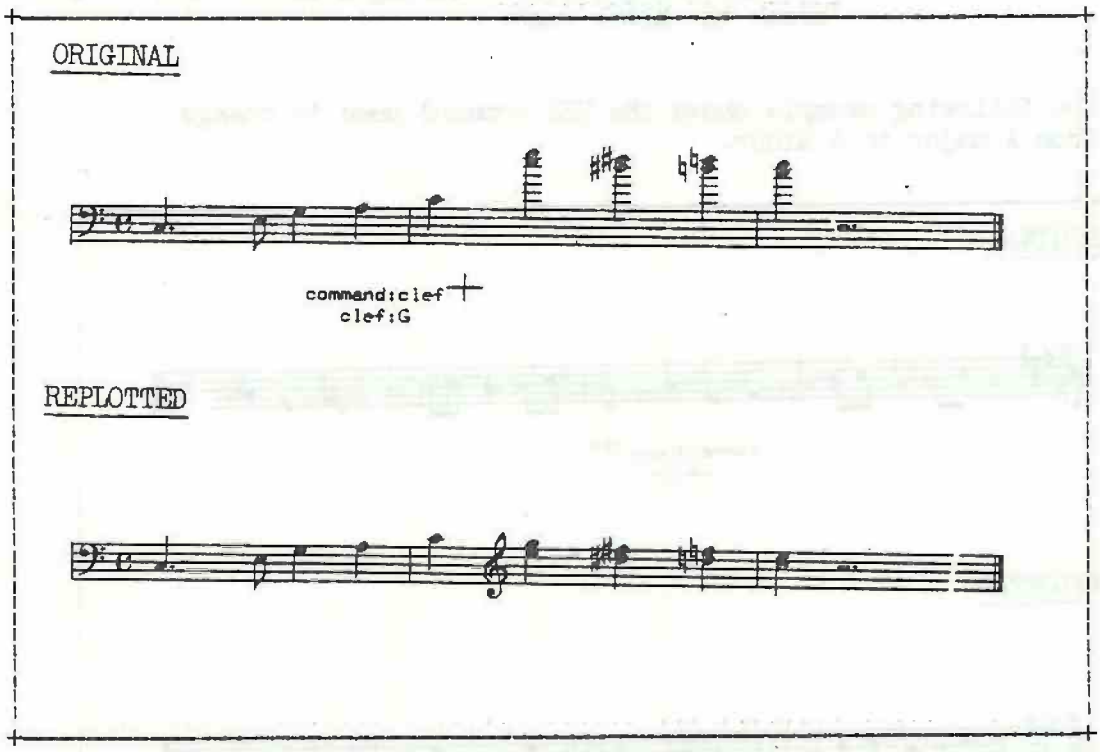


CLEF

The CLEF command is used change the clef for a part.

Cursor position: Last edit block before change. (Go to the edit block where you want the change and then move back one edit block.)
Voice: Voice selection does matter. Select:
a) Either Lower or Upper to change clef for the part
b) Master to change clef on all parts
Prompt: Clef:
Response: G, A, T, or F
Effect: Adds a clef. Changes the notation of all subsequent notes.

The following example shows the CLEF command.



KEY

The KEY command is used to change the key signature used for a part.

Cursor position: Last edit block before the new key. (Go to the edit block where you want the change to take place and then move back one edit block.)

Voice: Voice selection does matter. Select:
a) Either Lower or Upper to change key on part
b) Master to change key on all parts

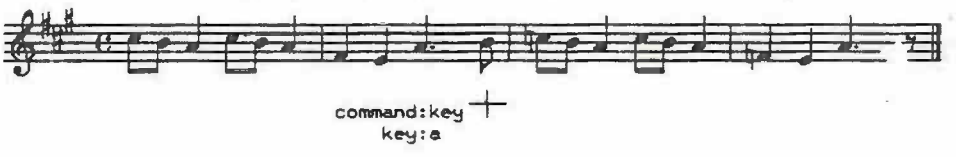
Prompt: Key:

Reply: Any key signature as on Score Menu. Use upper case for major; lower case for minor; F for flats: # for sharps.

Effect: Adds a different key signature. Changes the notation of all subsequent notes.
If this command occurs during a block rest, it will break the block rest.

The following example shows the KEY command used to change from A major to A minor.

ORIGINAL



REPLOTTED

SPLT

The computer automatically uses middle C for a split point when plotting notes on the U and L halves of a grand staff. On the U staff, all notes below middle C will be left out of the plotting. On the L staff, all notes from middle C up will be left out.

The SPLT command is used to change the split point. To move a note from one staff to the other, you must enter the command on both parts. However, if there is only one grand staff in the score, you can put the SPLT command in the master edit list to avoid having to enter it twice.

Cursor position: Edit block of the first note to be moved to a different staff.

Voice: Voice selection does matter. Select:
a) Either Lower or Upper to change split point on part
b) Master to change split point on all parts

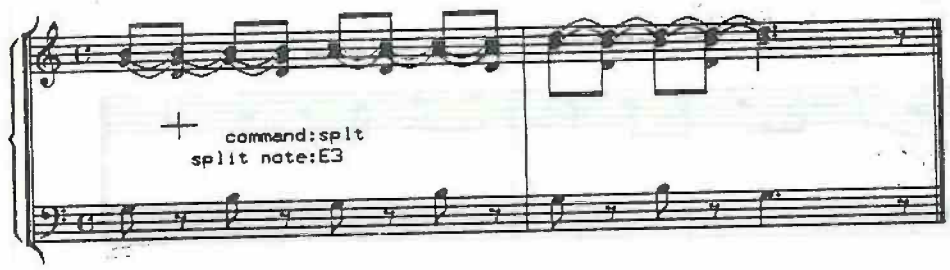
Prompt: Split note (concert pitch).

Response: Any SCRIPT pitch. Pitch letter, followed by # (sharp) or F (flat), and/or octave number. Default octave is 3.

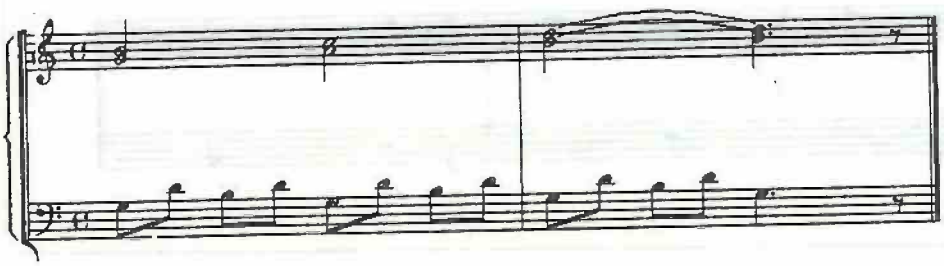
Effect: In the U part, omits all subsequent notes lower than this value. In the L part, omits all subsequent notes of this value and higher.

The following example shows the SPLT command.

ORIGINAL



REPLOTTED



TRAN

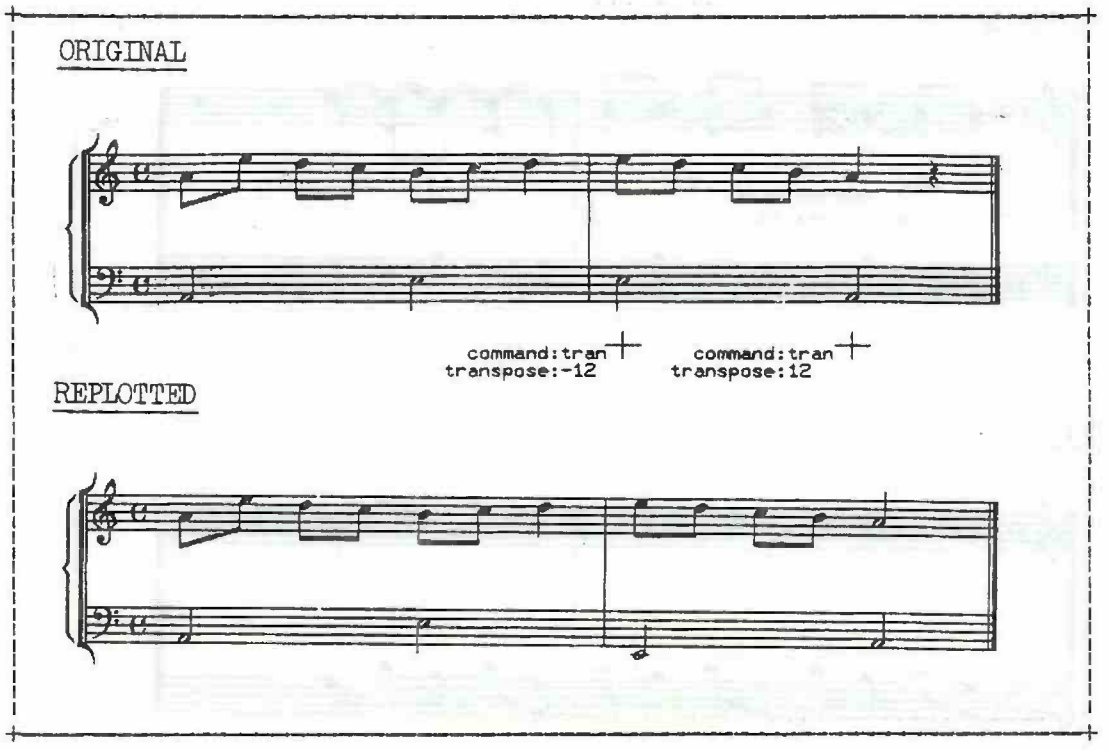
The TRAN command is used to transpose the notes. It can be used to transpose a single voice if different tracks are specified for the different voices.

Cursor position: Edit block of the first note to be transposed.
Voice: Voice selection does matter. Select:
a) Lower to change lower voice transposition
b) Upper to change upper voice transposition

NOTE: If these two are different, the lower voice will determine the key signature. If both voices use the same track, the lower transposition will be used for both voices.

c) Master to change transposition on all parts
Prompt: Transpose:
Response: A number in semitones. Negative numbers (to -64) to transpose down; positive numbers (to 64) transpose up. The transpose value is always relative to the previous setting.
Effect: Transposes the note(s) in the edit block and all subsequent notes by specified interval.

The following example shows the TRAN command used to transpose a note and then to return to the original.



FORM

The FORM command is used to reset the format functions that have been set on the Score Menu: grand staff, pitch bend, natural notation, accidentals, and syncopation. The new formats will be used for the note or notes in the edit block where the cursor was located when you entered the command and for subsequent notes as well.

NOTE: When you use this command to change one format function, you must be sure to set all the others correctly as well.

Cursor position: Edit block of first note to be formatted differently.
Voice: Voice selection does matter. Select:
a) Either Lower or Upper to change formatting on part
b) Master to change formatting on all parts
Prompt: ——#M
Reply: The FORMAT query consists of a set of five separate items that must be set each time you enter the command. You move the cursor between the items by pressing the right and left arrow keys. Then you use the TAB, 1, 2, and 3 keys to toggle between different options for the item.

The first item is used to select the grand staff function.

Press 1 to display a U; then only the notes at the split point and above will be notated.
U—#M
Press 2 to display an L; then only the notes below the split point will be notated.
L—#M
Press TAB to return the hyphen default; then all notes on the track will be notated.
——#M

The second item is used to turn on or off the pitch bend function.

Press 1 to display a B; then bends will be notated.
-B-#M
Press TAB to return to the hyphen default; then bends will not be notated.
——#M

The third item is used to turn on or off the natural notation function.

Press 1 to display an n; then natural notation will be used.
—N#M
Press TAB to return to the hyphen default; then natural notation will not be used.
——#M

The fourth column is used to choose between sharps and flats for accidentals.

Press 1 to display an f; then flats will be used for accidentals.
——fM
Press TAB to return to the # default; then sharps will be used for accidentals.
——#M

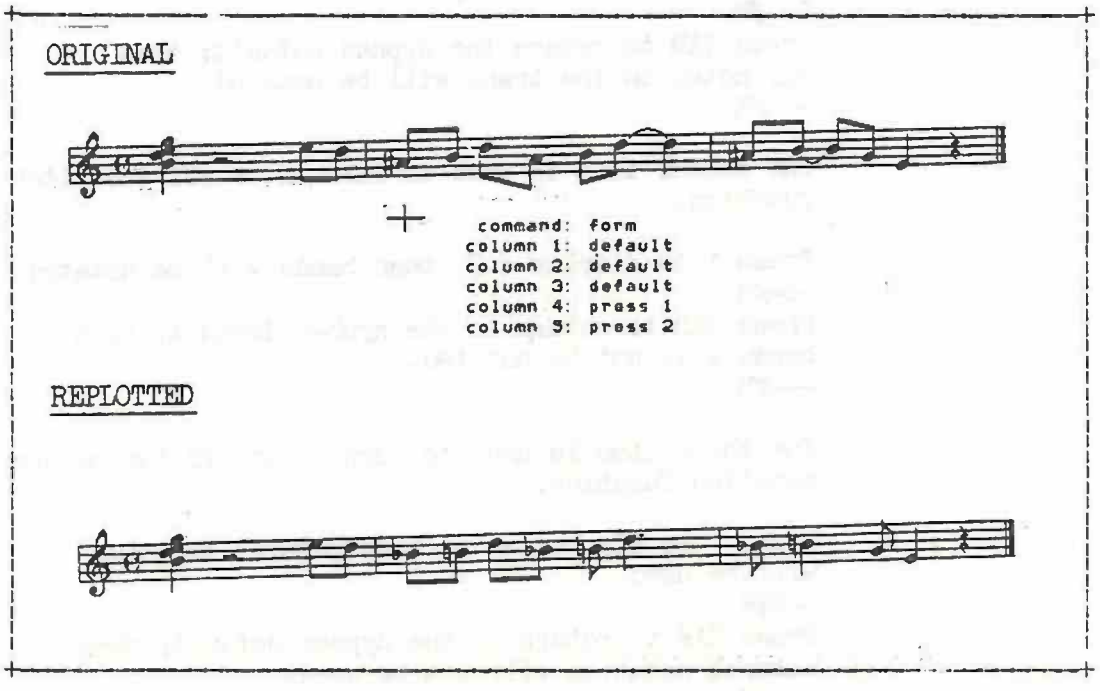
The ~~fourth~~ column is used to choose between syncopation formats.

Press 1 to display an M; then the modern form of notation will be used.
——#M
Press 2 to display a J; then the jazz form of notation will be used.
——#J
Press TAB to display a C; then the classical form of notation will be used.
——#C

When each item is set as desired, press RETURN.

Effect: Changes the grand staff, pitch bend, natural notation, accidental, and syncopation formats for the note in the edit block and all subsequent notes.

The following example shows the FORM command used to change the accidental and jazz format.



VOX

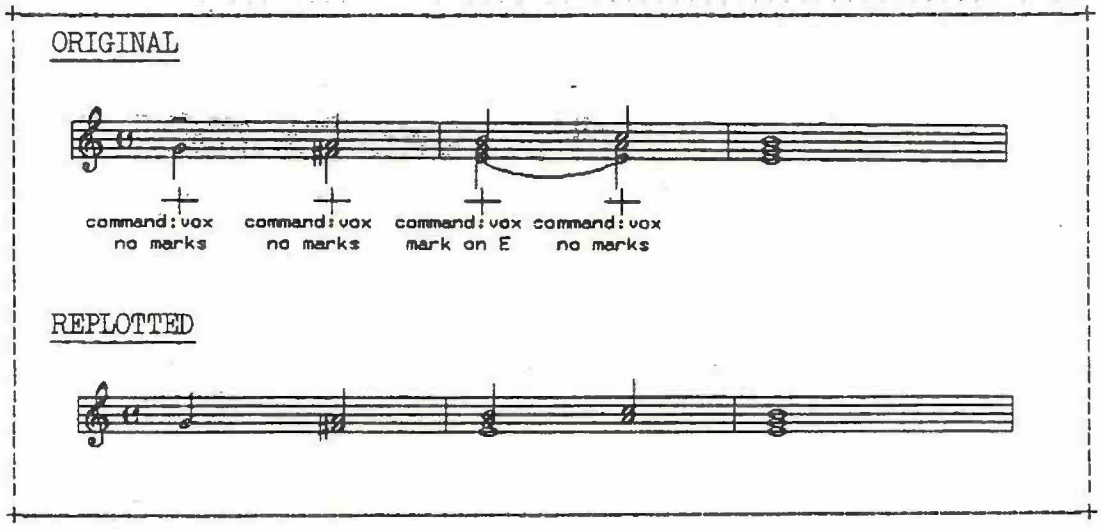
When the same track is specified for upper and lower voices for a part, the computer will decide which notes to place in which voice according to the largest interval in each chord. If there is only one note beginning at a given point, it will always be placed in the upper voice.

The VOX command is used to change this voicing and move notes from one voice to the other. You move through a chord and leave "marks" on those notes which you want in the lower voice. All unmarked notes will be placed in the upper voice. You can only use this command if the same track is specified for both voices.

Tied notes are voiced by a command in the edit block of the first note under the tie.

Cursor position:	On edit block of note or notes to be revoiced.
Voice:	Lower voice must be selected.
Prompt:	Mark lower voice.
Marking:	Cursor will be placed on highest note in chord (or on single note). Move cursor through chord with up and down arrows. Press any key to leave mark on any note or notes you want in the lower voice. To erase a mark, press the spacebar. When done marking, press RETURN.
Effect:	Any note(s) with the mark will be put in lower voice. Any note(s) without the mark will be put in upper voice.

The following example shows several VOX commands. Note that in the second measure the G and the A are moved to the upper voice. The tied E's are kept in the lower voice by marking only the first E under the tie.



(More on VOX on next page.)

For correct voicing when the note resolutions or tuplet structure are different for the two voices in a given measure, you must follow a special procedure.

First set up the different resolutions and/or tuplets for the two voices. Then, turn off the upper voice, either from the Score Menu or with the TRAK command. Next, with all the notes plotted in the same voice (the notes from the upper voice will temporarily be in the wrong resolution and/or tuplets), enter the VOX command and mark the notes for the lower voice. Finally, turn back on the upper voice and replot.

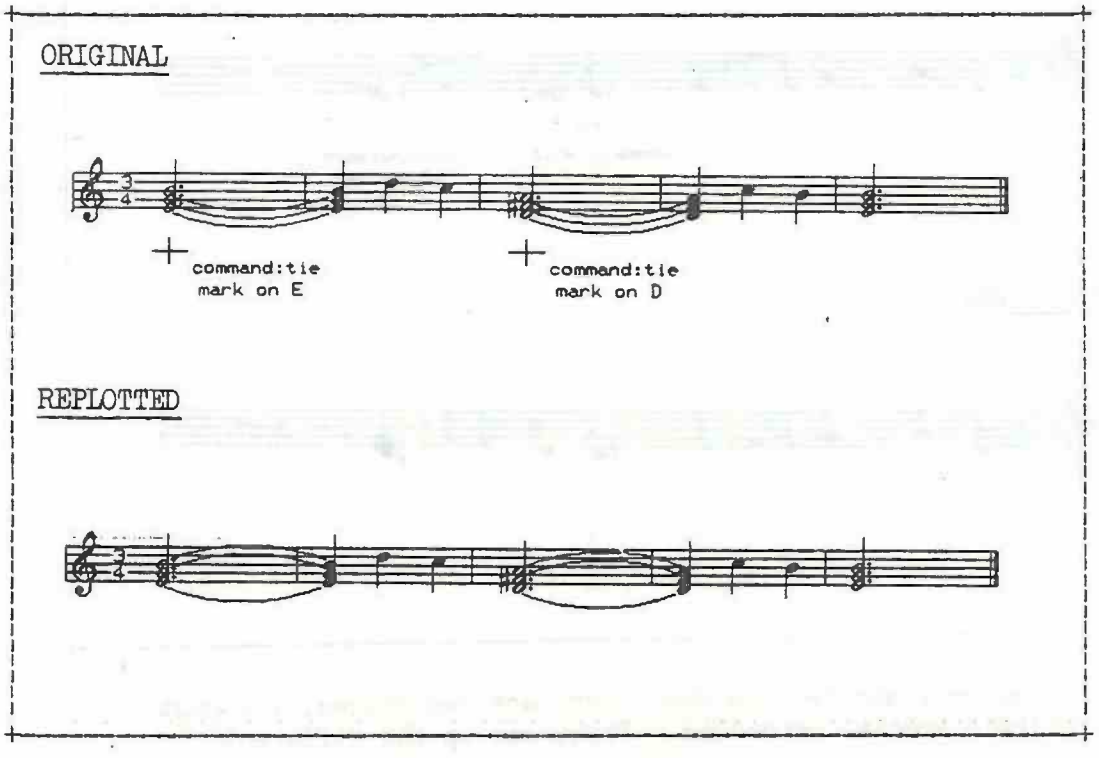
TIE

When there is one voice on a part, each tie will face in the opposite direction from the stem of the first note in the tie. When there are two voices, the ties of notes in upper voice will face up and the ties in the lower voice will face down . You can use the TIE command to change the direction of any tie. You move through the chord and place "marks" on any notes which you want to have the tie face down.

If there is a series of notes tied together (e.g., a half note tied to a quarter note tied to an eighth note), a TIE command will change all ties to the right. You can have the ties going in different directions by adding additional TIE commands in the series of notes.

Cursor position:	Edit block of left-hand note in the tie to be changed.
Voice:	Select either lower or upper voice to change ties on part.
Prompt:	Mark down tie.
Marking:	Cursor will be placed on highest note in chord (or on single note). Move cursor through chord with up and down arrows. Press any key to leave mark on any note or notes where you want the tie to face down. To erase a mark, press the spacebar. When done marking, press RETURN.
Effect:	Any note(s) with the mark will have tie facing down. Any note(s) without the mark will have tie facing up.

The following example shows the TIE command.



ACCD

The ACCD command is used to change the accidental for a single note, without changing the overall format for subsequent notes. You can use this command to add redundant sharps, flats and naturals if desired, as well as double sharps and flats.

Cursor position: Edit block of note with accidental. If the note is in a chord, you first enter the ACCD command, then move cursor to the note with up and down arrow keys, then press RETURN. There are no marks as only one accidental may be changed at a time.

Voice: Lower voice must be selected.

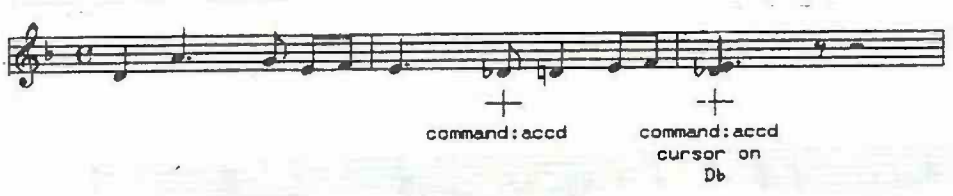
Prompt: Natural

Response: Select the correct format with the down and up arrow keys.
Press the down arrow key to change from "Natural" to "Flat" to "Double Flat".
Press the up arrow key to change from "Natural" to "Sharp" to "Double Sharp".
Then press RETURN.

Effect: Changes the notation of the note to desired accidental. If your selection was inappropriate, the nearest correct interpretation will be used.

The following example shows the ACCD command.

ORIGINAL



REPLOTTED

For correct accidentals when there are two voices, you must follow a special procedure. First set up the different

resolutions and tuplets for the two voices. Then, turn off the upper voice, either from the Score Menu or with the TRAK command. Next, with all the notes plotted in the same voice (the notes from the upper voice will temporarily be in the wrong resolution and/or wrong tuplet group), enter the ACCD commands for the appropriate notes. Finally turn back on the upper voice and replot.

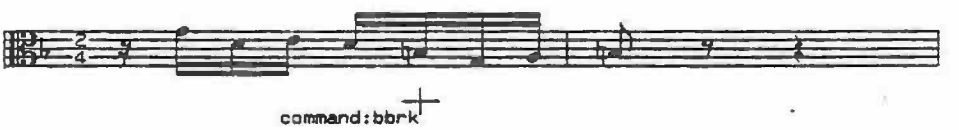
BBRK

The BBRK command is used to break the beam between two notes.

Cursor position: Edit block of the first note after the desired break.
Voice: Voice selection does matter. Select:
a) Lower to break beam in lower voice
b) Upper to break beam in upper voice
c) Master to break beam in all parts
Prompt: None.
Effect: Breaks the beam between two notes.

The following excerpt (Beethoven, Quartet #16, Op.135) shows the BBRK command. The third staff shows some added slurs.

ORIGINAL



REPLOTTED

AND SOME SLURS ADDED

BMND

The BMND command is used to insert a beam between two notes.

Cursor position: Edit block of the note you want to connect to a preceding note.
Voice: Voice selection does matter. Select:
a) Lower to insert beam in lower voice
b) Upper to insert beam in upper voice
c) Master to insert beam in all parts
Prompt: None.
Effect: Draws a beam to the preceding note.

The following excerpt (Beethoven, Sonate Pathetique, Op.13) shows the BMND command.

ORIGINAL

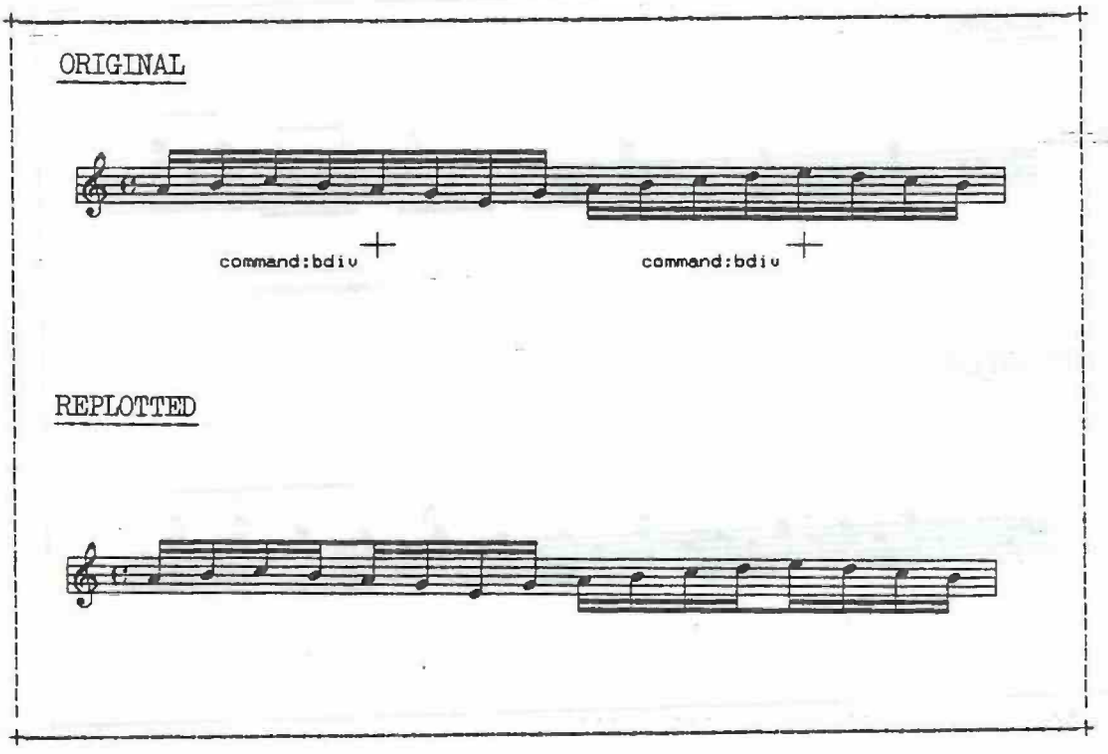
REPLOTTED

BDIV

The BDIV command is used to break the beams between two 16, 32, 64, or 128 notes, while maintaining a single eighth note beam. Thus, it divides the notes into readable groups but keeps them connected.

Cursor position: Edit block of the first note after the desired break.
Voice: Voice selection does matter. Select:
a) Lower to divide beams in lower voice
b) Upper to divide beams in upper voice
c) Master to divide beams in all parts
Prompt: None.
Effect: Breaks beams down to the eighth note beam.

The following example shows the BDIV command.

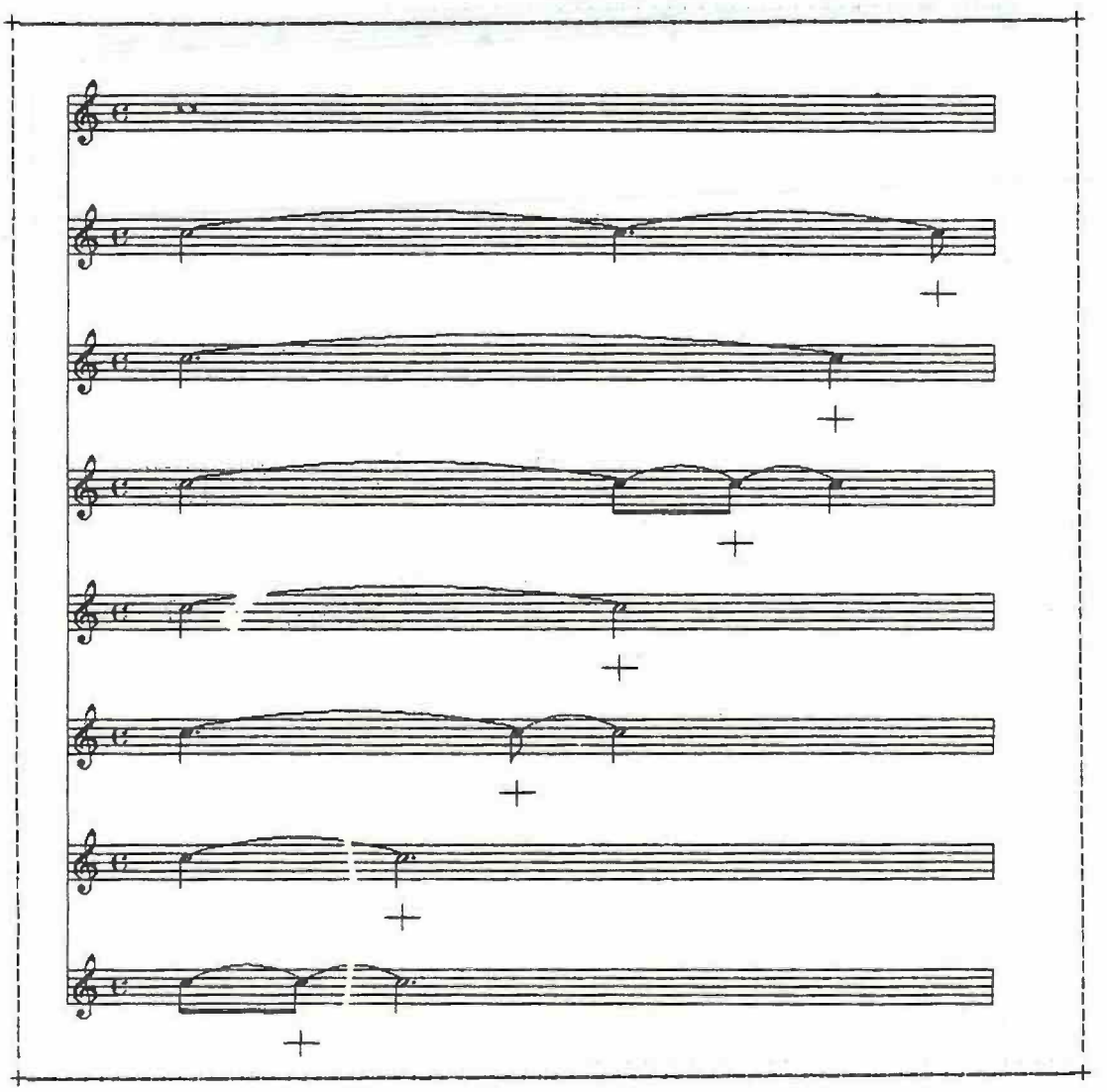


NBRK

The NBRK command is used to break a single note into a tied note. Through cursor placement, you can determine where the note will be divided. You can also use it to divide rests into smaller rests.

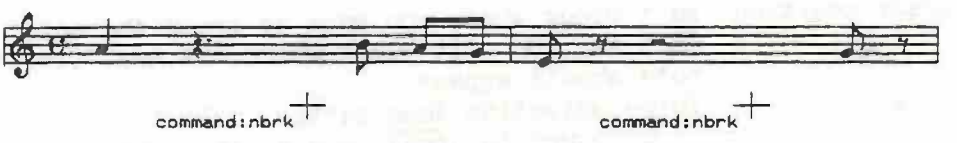
Cursor position:	Edit block where you want to break the note. That is, the edit block where the new "tied to" note should appear.
Voice:	Voice selection does matter. Select: a) Lower to break note(s) in lower voice b) Upper to break note(s) in upper voice
Prompt:	None.
Effect:	Divides a single note into a tied note.

The following example shows where the cursor has been placed to break a whole note in different ways. (The note resolution is 8).



The following example shows how you can use NBRK command to break a rest.

ORIGINAL



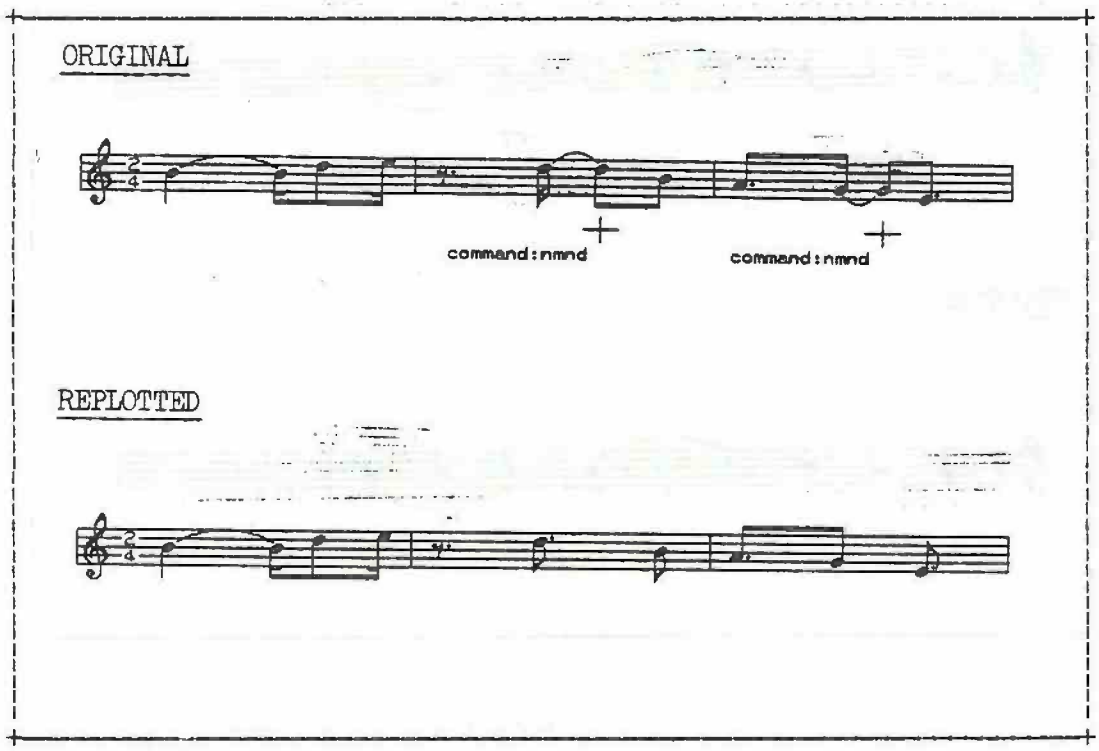
REPLOTTED

NMND

The NMND command is used to turn a tied note into a single note. It can also be used to join two rests into a single rest.

Cursor position: Edit block of the note on the right end of the tie that you wish to remove.
Voice: Voice selection does matter. Select:
a) Lower to mend note(s) in lower voice
b) Upper to mend note(s) in upper voice
Prompt: None.
Effect: Renotates as a single note usually. Some notes cannot be notated singly (e.g., any note that would appear tied in jazz notation).

The following example shows the NMND command.

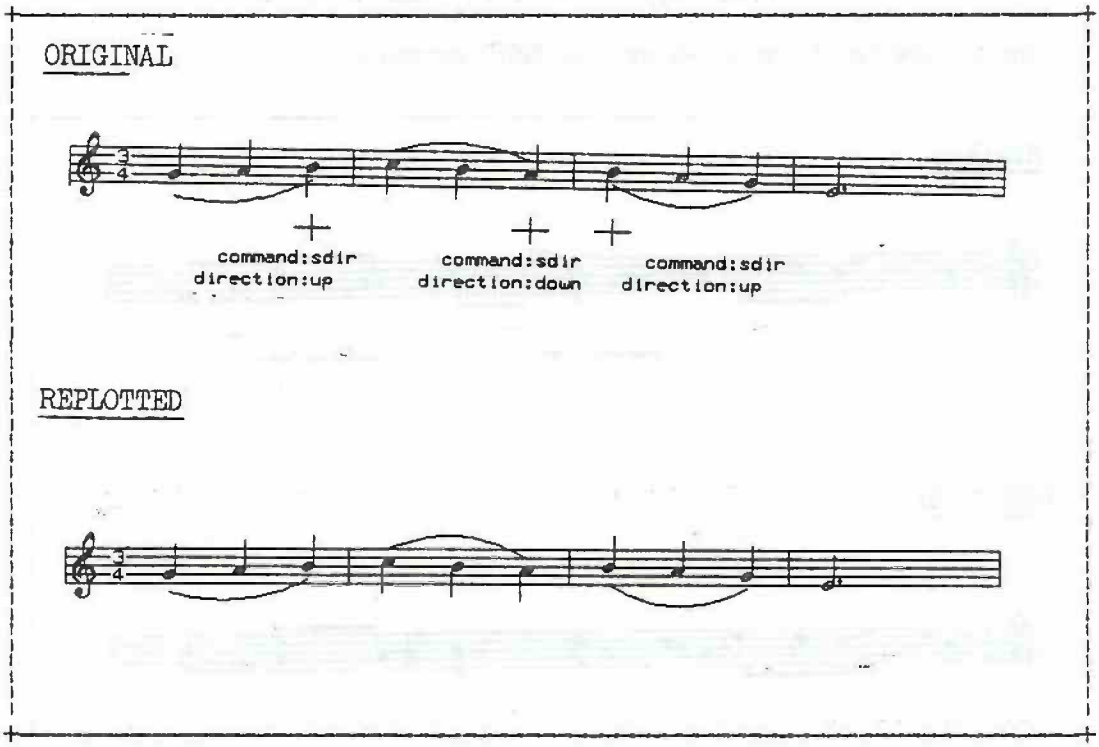


SDIR

The SDIR command simply changes the direction of the stem of a note. It does not affect the voicing.

Cursor position: Edit block of note to be changed.
Voice: Voice selection does matter. Select:
a) Lower to change stem direction in lower voice
b) Upper to change stem direction in upper voice
Prompt: Direction:
Response: Press up arrow key for up stem; press down arrow key for down stem.

The following example shows the SDIR command.



OREP

The OREP command is used to add an opening repeat sign.

Cursor position: Last edit block before the measure bar.
Voice: Voice selection does not matter.
(The OREP command will automatically be stored in the master edit list.)
Prompt: None.
Effect: Draws an opening repeat sign on all parts.
If this command occurs during a block rest, it will break the block rest.

CREP

The CREP command is used to add a closing repeat sign.

Cursor position: Last edit block before the measure bar.
Voice: Voice selection does not matter.
(The CREP command will automatically be stored in the master edit list.)
Prompt: None.
Effect: Draws closing repeat sign on all parts.
If this command occurs during a block rest, it will break the block rest.

NOTE: You must be in the master voice to delete the OREP and CREP commands.

The following (John Barleycorn) shows the OREP and CREP commands.

ORIGINAL

REPLOTTED

DBAR

The DBAR command is used to add a double bar.

Cursor position: Last edit block before the measure bar.
Voice: Voice selection does not matter.
(The DBAR command will automatically be stored in the master edit list.)
Prompt: None.
Effect: Draws a double bar sign on all parts.
If this command occurs during a block rest, it will break the block rest.

NOTE: You must be in the master voice to delete a DBAR command.

The following example shows the DBAR command.

ORIGINAL

REPLOTTED

BRST

As described in the section on the Page Menu, you may specify on the Page Menu that numbered block rests should be used whenever there are simultaneous rests in all parts.

You can use the BRST command to break a block rest into shorter blocks. To enter the command, the block rest function must be turned off first, so that you can move to the actual measure where you want the block rest to be broken. After the BRST command has been entered, you can turn on the block rest function and the single block rest will be divided into two block rests.

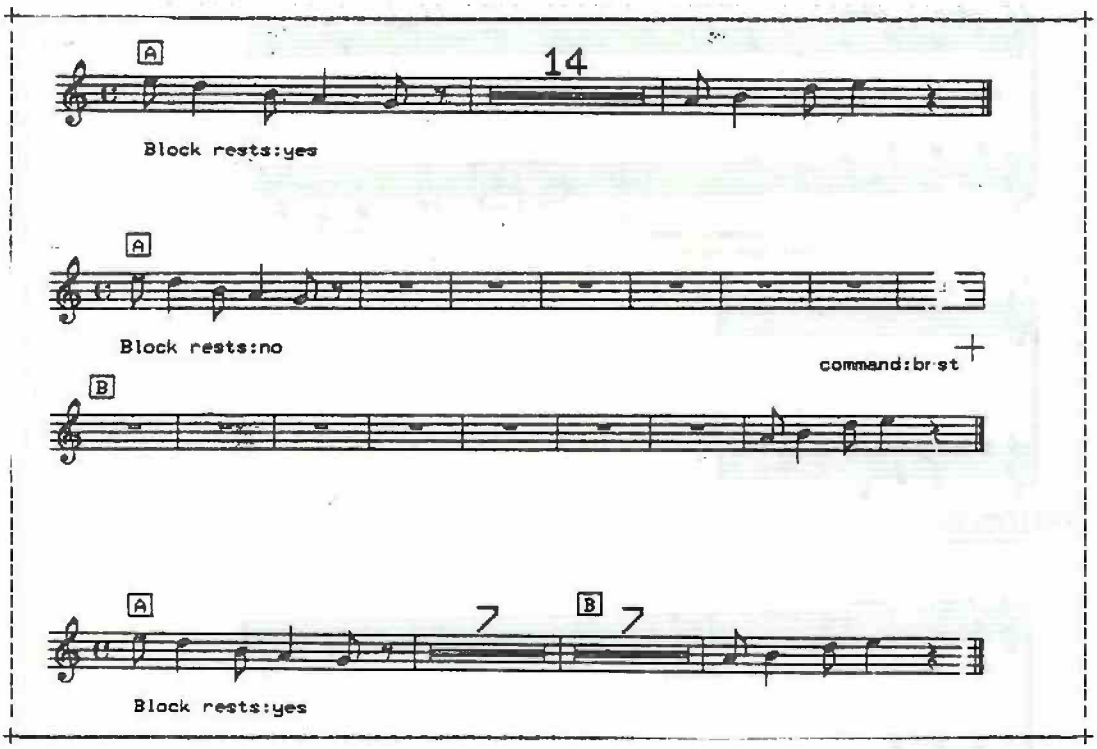
Cursor position: Last edit block in the last measure before the desired break in the block rest.

Voice: Voice selection does matter. Select:
a) Either Lower or Upper to break block rest on part
b) Master to break block rests on all parts
Note that if there is a BRST command on one part, all parts printed with it will break at the same point. If the parts are separately printed, only the part with the BRST command will have a broken block rest.

Prompt: None.

Effect: Breaks the block rest.

The following example shows the BRST command.



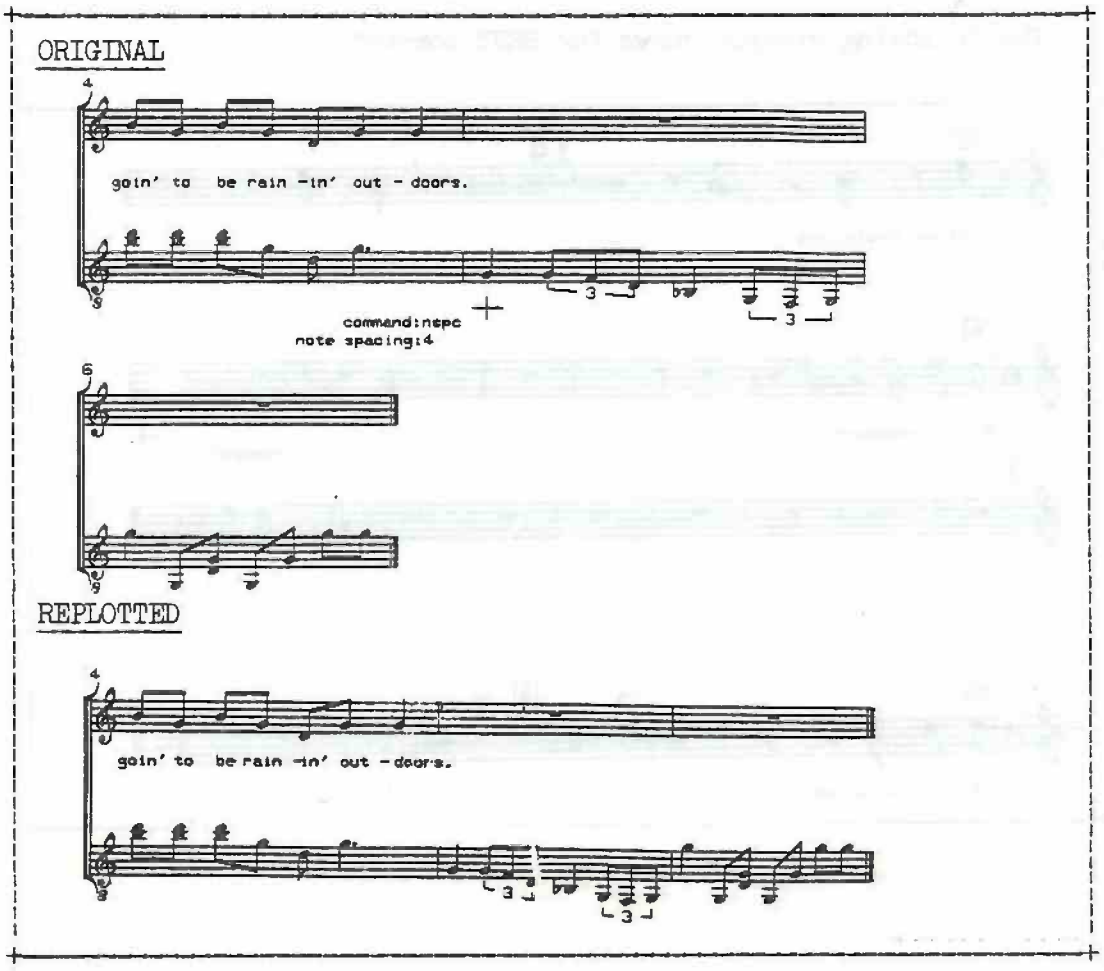
NSPC

The NSPC command is used to change the note spacing on a measure by measure basis. This can be used to adjust the spacing of measures for page turns, for added text, for symbols such as slurs, etc.

Cursor position:	First edit block in the measure where the change in spacing is desired.
Voice:	Voice selection does not matter. (The NSPC command will automatically be stored in the master edit list.)
Prompt:	Note spacing:
Response:	A number of half noteheads as described on Page Menu.
Effect:	Changes the minimum spacing between notes for current and following measures.

NOTE: You must be in the master voice to delete a NPSC command.

The following excerpt ("Come On In My Kitchen Blues," Robert Johnson) shows the NSPC command used to compress the spacing for a guitar interlude.



BSPC

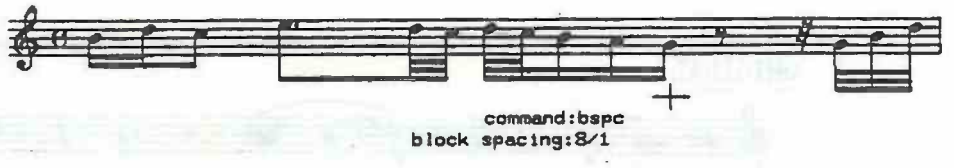
The BSPC command is used to expand (not shrink) the note spacing around a particular note. You can add space either to the left or the right or both. This command can be used to make space for a grace note or for lyrics.

Cursor position: Edit block of the note you want to add space around.
Voice: Voice selection does not matter. (The BSPC command will automatically be stored in the master edit list.)
Prompt: Block spacing (left/right):
Response: Minimum number of half noteheads to the left and right. Use a fraction where the numerator represents the left spacing and the denominator represents the right spacing. These values must be larger than the current note spacing or they will be ignored.
Effect: Adds space as desired.

NOTE: You must be in the master voice to delete a BSPC command.

The following excerpt (Quantz, Flute Sonata) shows the BSPC command.

ORIGINAL



REPLOTTED

REPLOTTED WITH GRACE NOTE ADDED

POFF

The POFF command is used to leave the notation of notes and rests off the staff. You can leave out as short a segment of notation as that corresponding to a single edit block.

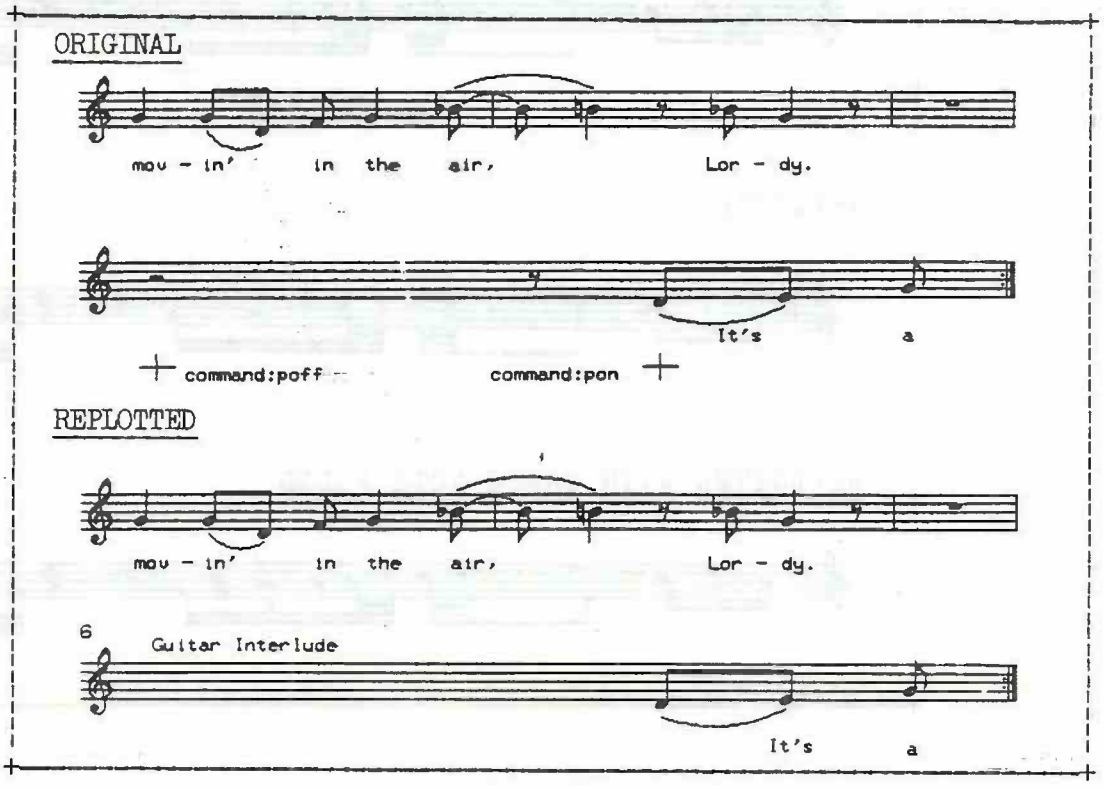
Cursor position: Edit block of the first note you want to leave out.
Voice: Voice selection does matter. Select:
a) Either Lower or Upper to leave out music on part
b) Master to leave out music on all parts
Prompt: None.
Effect: Leaves out the notes and rests, but not the editing.

PON

The PON command is used after a POFF command to start drawing the notes and rests again.

Cursor position: Edit block of the first note you want to draw.
Voice: Voice selection does matter. Select:
a) Either Lower or Upper to start plotting music on part
b) Master to start plotting music on all parts
Prompt: None.
Effect: Starts drawing notes.

The following excerpt ("Boll Weevil Blues," Charlie Patton) shows the POFF and PON commands used to take out some rests for a guitar interlude.



BOFF

The BOFF command is used to leave out the bar lines.

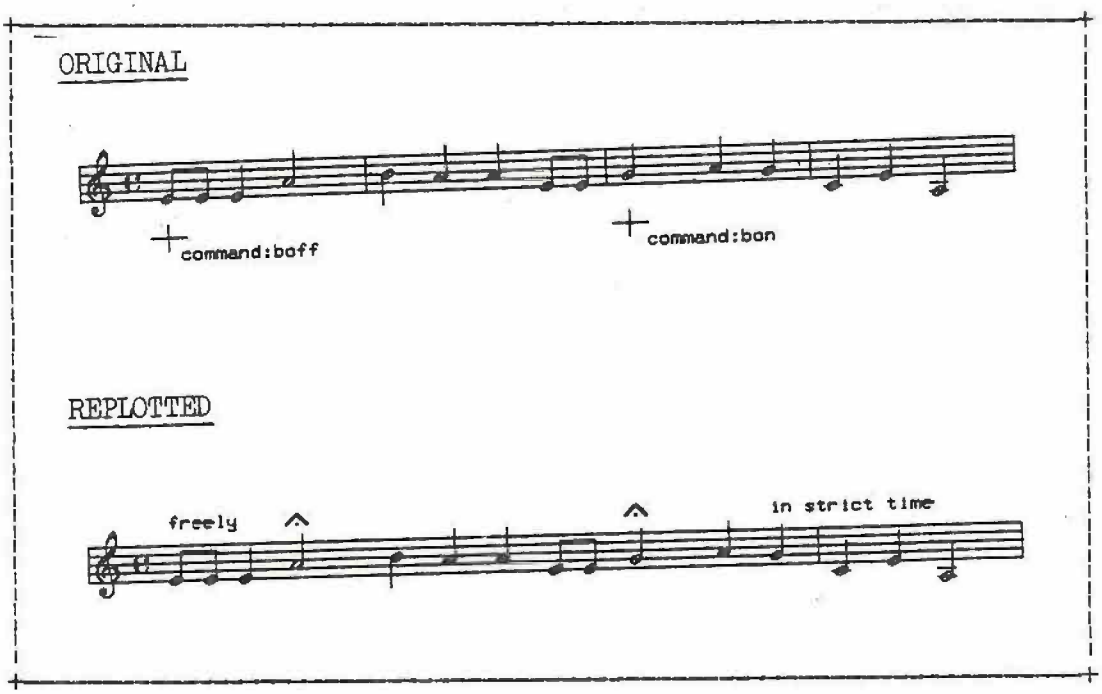
Cursor position: First edit block in
the measure before the first bar
line you want to leave out.
Voice: Voice selection does matter. Select:
a) Either Lower or Upper to leave out bars on part
b) Master to leave out bars on all parts
Prompt: None.
Effect: Leaves out bar lines.

BON

The BON command is used after a BOFF command to start drawing the bar lines again.

Cursor position: First edit in the measure before
the first bar line you want to draw.
Voice: Voice selection does matter. Select:
a) Either Lower or Upper to start drawing bars on part
b) Master to start drawing bars on all parts
Prompt: None.
Effect: Starts drawing bar lines.

The following excerpt ("The Cuckoo," Appalachian Folksong) shows the BOFF and BON commands.



NOTE: By using both BOFF and POFF, you can make your own score paper!

SECTION VI:
PRINTING THE SCORE

On the Main Menu, select Hardcopy and press RETURN.

Instructions on setting up the Prism Printer and aligning the paper are included in the Synclavier Installation and Setup Manual.

After editing, you may need to recall the Score Menu and turn on the asterisk for all parts you wish to print together. Then make sure the text and settings on the Page Menu are set as you want them. Finally, return to the Main Menu, select the Hardcopy Operation Mode and press RETURN. To interrupt printing at any time, press the spacebar, a few times if necessary.

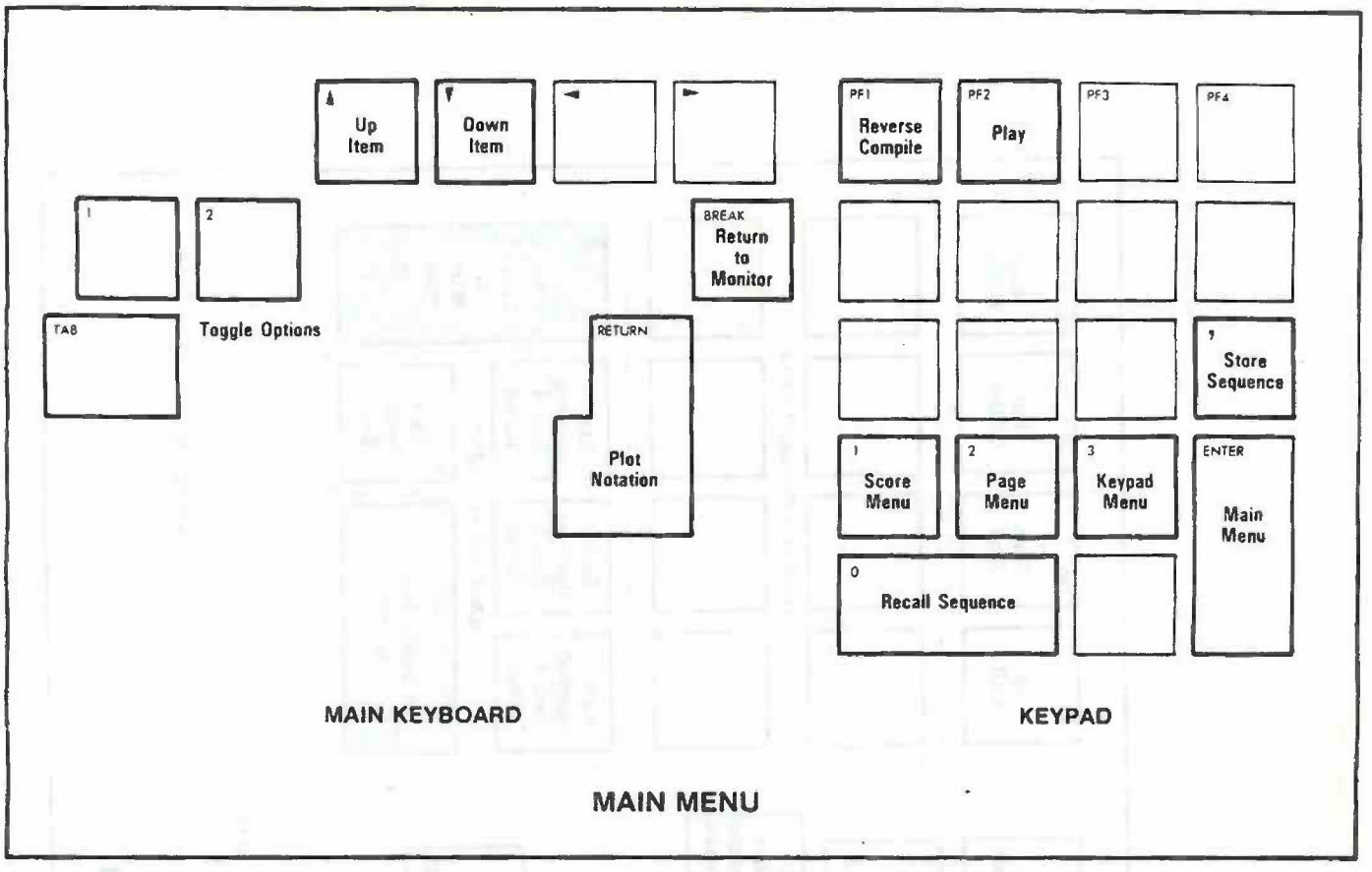
When the page size is eight inches or less, the notation that is printed will be exactly the same as that on the screen during editing. If your page size is wider than eight inches, however, the notation on the screen will not be the same as that on the paper. This means that measures that are on the end of the line on the screen may not be on the end of the line on the paper. And vice versa. A measure that is in the middle of the line on the screen may end up on the end of the line on the paper.

With wide scores, you should do a rough draft on paper after you have added everything that will affect the width of the measures. Then you can see how they will line up on the paper before you starting adding long symbols or long lines of text that might be broken. Once you see how the notation will look on paper, you can use the Jump to Measure setting to advance the measures on the screen. Then you can add the symbols as desired for correct printing.

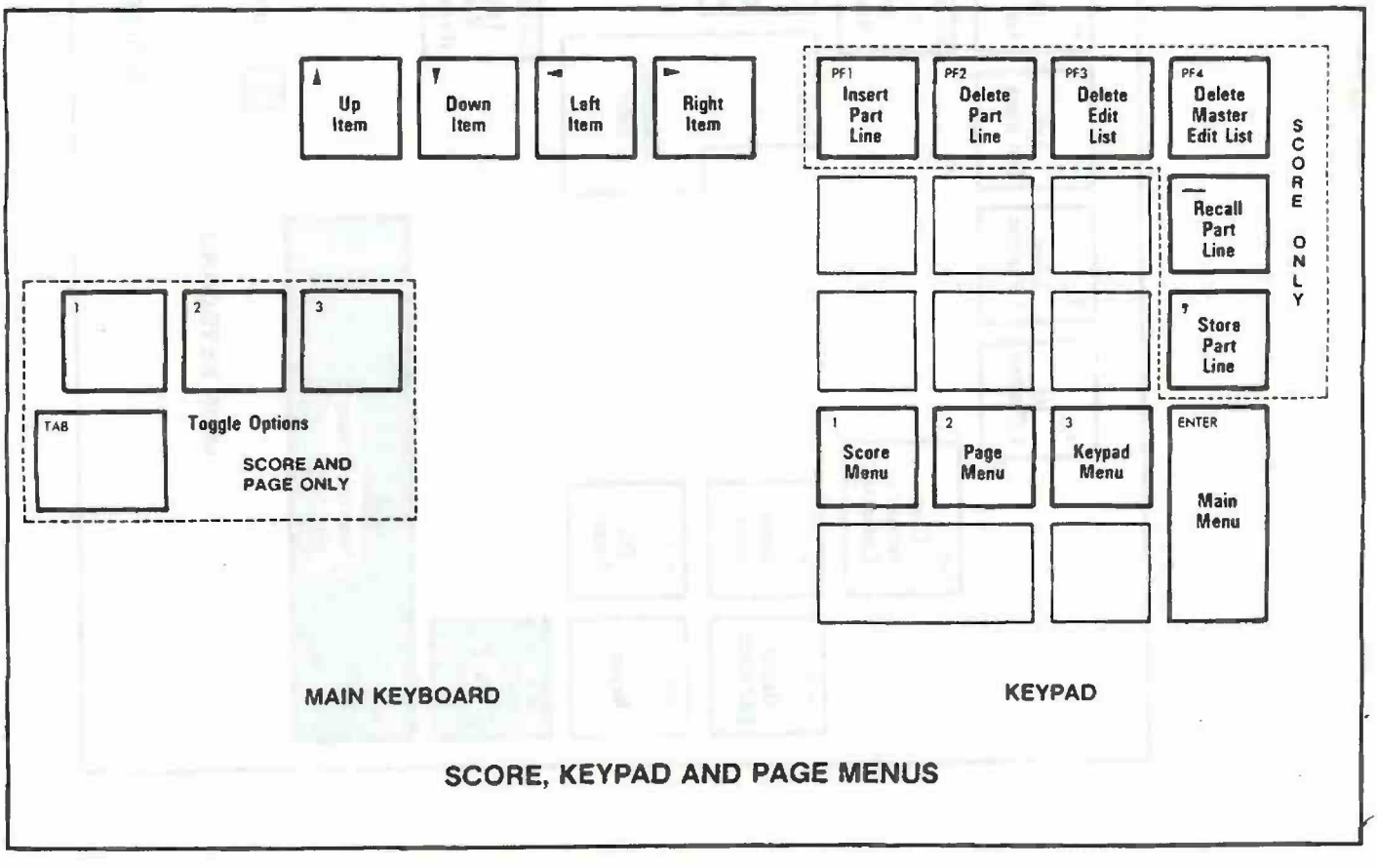
In addition, you can use the NSPC and BSPC commands to stretch or condense your measures so that the line breaks and page breaks occur where you want them to.

APPENDICES

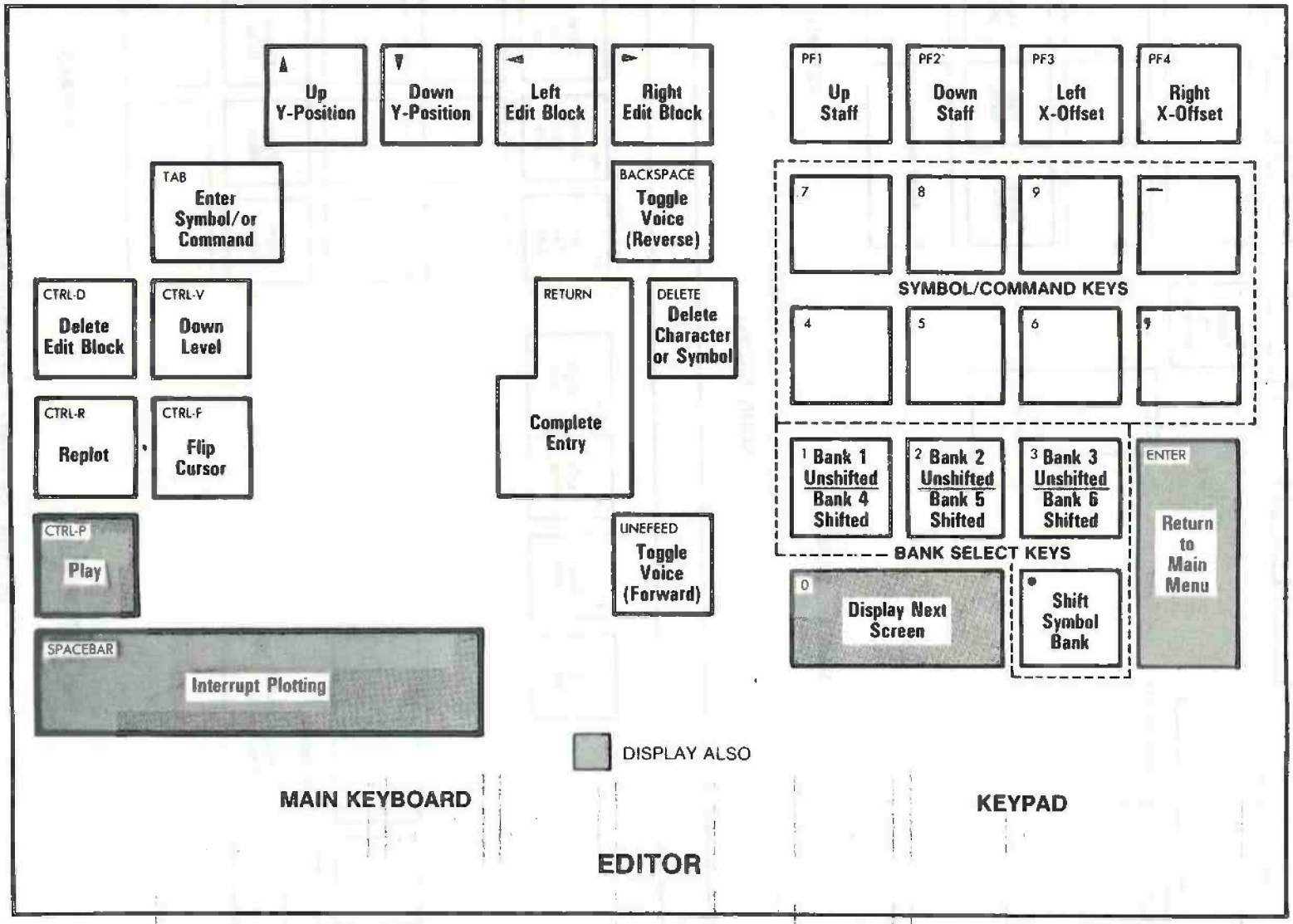
These appendices contain a summary of all the keystroke commands for the various menus and for the Editor. They also contain a summary and index of all transcription parameters on the menus and a list of all symbols and editing commands. Finally they include a list of system limitations.



MAIN MENU



SCORE, KEYPAD AND PAGE MENUS


▲ Up Y-Position
▼ Down Y-Position
◄ Left Edit Block
► Right Edit Block
TAB Enter Symbol/or Command
BACKSPACE Toggle Voice (Reverse)
CTRL-D Delete Edit Block
CTRL-V Down Level
RETURN Complete Entry
DELETE Delete Character or Symbol
CTRL-R Replot
CTRL-F Flip Cursor
CTRL-P Play
UNFEED Toggle Voice (Forward)
SPACEBAR Interrupt Plotting
DISPLAY ALSO
MAIN KEYBOARD
PF1 Up Staff
PF2 Down Staff
PF3 Left X-Offset
PF4 Right X-Offset
7
8
9
—
SYMBOL/COMMAND KEYS
4
5
6
,
1 Bank 1 Unshifted Bank 4 Shifted
2 Bank 2 Unshifted Bank 5 Shifted
3 Bank 3 Unshifted Bank 6 Shifted
BANK SELECT KEYS
ENTER Return to Main Menu
0 Display Next Screen
• Shift Symbol Bank
KEYPAD
EDITOR

APPENDIX B: TRANSCRIPTION PARAMETERS

Overall Transcription Parameters on the Main Menu

page	parameter	operation	function
23	Operation mode:	TAB (Display)	Select display mode
		1 (Edit)	Select editor mode
		2 (Hardcopy)	Select printer mode
23	Jump to measure number:	Number from 1	Start notation at selected measure
24	Start at click:	Number from 1	Start notation at at selected click
24	Click track:	TAB (Click)	Use click track or
		Number from 1-16	Use memory recorder track for base for notation
24	Click note:	Fraction	Use specified rhythmic value for click
25	Time signature:	Fraction	Start notation with specified time sig.
24	Edit resolution:	Note value of shortest note (1,2,4,16,32, 64,128)	Create edit block for each possible shortest note

Part Parameters on the Score Menu

page	parameter	operation	function
30	Part No.		Automatic numbering, E appears if part has been edited.
30	Inst. Name	Up to 16 characters, DELETE to erase	On multiple part scores, print instrument name at the beginning of part.
			On single parts, print name at top of each page.
31	Format		
31	P	TAB (no symbol)	Do not plot part
		1 (*)	Plot part
31	{	TAB (no symbol)	Do not draw brace
		1 (⌜)	Draw top of brace
		2 (⊏)	Draw individual bracket
		3 (⌞)	Draw bottom of brace
32	[	TAB (no symbol)	Do not draw bracket
		1 (⌜)	Draw top of bracket
		2 (|)	Draw middle of bracket
		3 (⌞)	Draw bottom of bracket
32	¦	TAB (|)	Connect bars between part and part above
	¦	1 (⊤)	Do not connect bars between part and part above
34	G	TAB (no symbol)	Do not leave out any note
		1 (U)	Leave out notes below split point (middle C default)
	,	2 (L)	Leave out notes at split point and above
35	B	TAB (no symbol)	Display first note of bend
		1 (B)	Display complete bends

35	n	TAB (no symbol)	Notate in normal style
		1 (n)	Display natural sign for any note that is not sharp or flat
36	#	TAB (#)	Use sharp for accidentals
		1 (f)	Use flat for accidentals
36	S	TAB (C)	Use classical syncopation
		1 (M)	Use modern syncopation
		2 (J)	Use jazz syncopation
37	Vert. Space	Number of half-space units	Adjust space between staff and staff above
38	Clef	G	Begin notation of part with G (or treble) clef
		A	Begin notation of part with alto (or C) clef
		T	Begin notation of part with tenor clef
		F	Begin notation of part with F (or bass) clef
38	Key Sig	Key letter upper case - major lower case - minor Use # for sharp. Use F for flat.	Begin notation of part with selected key signature

The following are set separately for the Upper and Lower Voice

39	Trk	Track number	Selects track for notes on voice
			If lower track only is specified, then only one voice on part.
			If same track for lower and upper voices, notes on track will be split into two voices on same part.
			If different tracks for lower and upper voices, notes from track will be stems up and no notes from lower track will be stem down.
		DELETE	Remove upper voice.

40	Trn	Number in semitones	Transpose notes in voice by specified interval. Sets following parameter.
40	Key	Any major key	Transpose notes in voice for instrument pitched in specified key. Sets previous parameter.
41	Note Res	Legitimate note value (1,2,4,8, 16,32,64,128)	Begin notation of voice with shortest possible note as specified.

Printing Parameters on the Page Menu

Title and text lines:

page	line	operation	function
43	Title line:	Up to 80 characters	Center on top of first page in double width characters
43	Left subtitle:	Up to 80 characters	Print left justified under title
43	Right subtitle:	Up to 80 characters	Print right justified under title
43	Copyright line:	Up to 80 characters	Center at bottom of first page
		@	Inserts a copyright symbol

Page Format Specifications:

page	parameter	operation	function
44	Page Width:	Number	Set width in inches
		Number, space, number	Set width in inches and quarter inches
44	Page Length:	Number	Set length in inches
		Number, space, number	Set length in inches and quarter inches
45	Note Spacing:	Number	Set minimum space between notes in 1/2 notehead widths
45	Staff Spacing:	Number of staves per page	Calculate and set default vertical spacing for Score Menu
46	Starting Page Number:	Number	Start numbering of pages with specified number
		TAB (Off)	Do not number pages
46	Starting Measure Number:	Number	Start numbering of measures with specified number
		TAB (Off)	Do not number measures

46	Final Measure Number:	Number	Sets number of measures in notation.
		TAB (Off)	Number of measures determined by longest part.
47	End of Piece:	TAB Off	Extend last line across page; leave out double bars
		1 On	Do not extend last line across page; add double bars
48	Block Rests:	TAB Off	Do not use block rests
		1 On	Use block rests

APPENDIX C: MUSIC PRINTING SYMBOLS

(Commands indicated by an asterisk are also included under the heading, "Complex Symbols.")

Clefs

	GCLF	G clef
	CCLF	C clef (alto)
	FCLF	F clef

Notes and Rests

	NOTE	*Note
	GNOT	*Grace Note
	REST	*Rest

Accidentals

	DSHR	Double Sharp
	SHRP	Sharp
	NATR	Natural
	FLAT	Flat
	DFLT	Double Flat

Chord Symbols

Δ	MAJ	Major
o	DIM	Diminished
ϕ	HDIM	Half Diminished
b	CFLT	Flatted (also use for flat in text)
♮	CNAT	Natural (also use for natural in text)

Musical Form Symbols

𝄎	MREP	Measure Repeat
𝄍	BREP	Beat Repeat
𝄋	SGNO	Dal Segno
𝄌	CODA	Coda

Expression Symbols

p	P	Piano
m	M	Mezzo
f	F	Forte
⌒	SLUR	*Slur
<	HPIN	*Hairpin (for crescendo, diminuendo)
^ v	SFOR	Sforzando (up, down)
s	S	S for Sforzando
z	Z	Z for Sforzando
▼ ▲	STAC	Staccato (up, down)

Expression Symbols

	TENU	Tenuto
	MARC	Marcato
	FERM	Long Fermata (up, down)
	MFRM	Medium Fermata (up, down)
	SFRM	Short Fermata (up, down)
	GRUP	Grupetto (up, down)
	MORD	Mordant
	SMRD	Short Mordant
	TR	Trill
	SLSH	Stem Slash
//	RRTK	Pause (Full Stop)
	PED	Pedal Down
	STAR	Pedal Up

String Symbols

	DBOW	Down Bow
V	UBOW	Up Bow
	SPIZ	Snap Pizzicato
o	HARM	Harmonic
◇	DIAM	Harmonic Diamond

Other Symbols

8	8VA	8 for 8va
ø	OO	Lower Case O-slash
Æ	CAE	Upper Case AE
æ	AE	Lower Case AE

Complex Symbols

The following symbols require several steps to execute. After the symbol is entered, you will get one or more queries for more information. For a detailed explanation, see pages 00-00.

	SLUR	Slur (used with up arrow and END command)
	SLUR	Slur (used with down arrow and END command)
	HPIN	Hairpin (used with right arrow and END command)
	HPIN	Hairpin (used with left arrow and END command)
⌜ 3 ⌝	TBAR	Tuplet Bar (used with up arrow, 3, and END command)
⌞ 5 ⌟	TBAR	Tuplet Bar (used with down arrow, 5, and END command)
	NOTE	Note (used with 4 and up arrow)
	NOTE	Note (used with 8 and down arrow)
	GNOT	Grace Note (used with 16 and up arrow)
	GNOT	Grace Note (used with 32 and down arrow)
	REST	Rest (used with 4)
	REST	Rest (used with 2)
	LINE	Line (used with PF4 key and END command)
	LINE	Line (used with up arrow and END command)
	MID	Mid (use for midpoint of SLUR command)
	END	End (use for end of SLUR, HPIN, LINE, and TBAR commands

APPENDIX D: MUSIC PRINTING EDITING COMMANDS

V = affects one voice
L = must be entered in Last Block
M = automatically stored in master edit list

Sequence Commands - Affect notes in memory recorder

page				command	function
72				ADD	Add a new note
73				DEL	Delete a note
74				PTCH	Change pitch of a note
75				DUR	Change duration of a note
76				TRIM	Square a note with a note resolution block
77				MOVE	Move a note to different note resolution block

Transcription Commands - Affect transcription of notes

81		L	M	TIME	Change time signature
82		L	M	CLIK	Change click note
83		L	M	MEAS	Create short measure
85	V	L		RESO	Change note resolution
87	V			TUP	Create a tuplet
92	V	L		TRAK	Change track
93				CLEF	Change clef
94				KEY	Change key
95				SPLT	Change grand staff split point
96	V			TRAN	Change transpose value
97				FORM	Change format (B,N,#,S)
99	V			VOX	Voice a chord (add in lower voice only)
101	V			TIE	Change tie directions of a chord
102	V			ACCD	Change accidental (add in lower voice only)
104	V			BBRK	Break a beam
105	V			BMND	Mend a beam
106	V			BDIV	Divides beaming
107	V			NBRK	Break a note
109	V			NMND	Mend a note
110	V			SDIR	Change stem direction on a note
111			M	OREP	Insert opening repeat sign
111			M	CREP	Insert closing repeat sign
112			M	DBAR	Insert double bar
113				BRST	Break a block rest
114			M	NSPC	Change note spacing for measure
115			M	BSPC	Change note spacing for note
116				POFF	Switch off plotting
116				PON	Switch on plotting
117				BOFF	Switch off bar lines
117				BON	Switch on bar lines

APPENDIX E: SYSTEM LIMITATIONS

This section describes the most, the least, the widest, the smallest, the largest, and other limits to what you can do.

1. Each score can have no more than 16 staves.

2. The following are legitimate note values:

1	whole note
2	half note
4	quarter note
8	eighth note
16	sixteenth note
32	thirty-second note
64	sixty-fourth note
128	one hundred and twenty-eighth note

   You use these values when specifying the click note and note resolution, and in the denominator for the time signature and for note durations in the DUR, ADD, and MOVE commands and in the NOTE, REST, and GRAC symbols.

3. A score can be no longer than 32,000 pages.

4. The shortest tuplet is a 255th "uplet".

5. No measure can be longer than 163 seconds.

6. The first measure must start before 163 seconds after the start of the piece.