



The Music Studio 3.0TM

*For IBM,[®] IBM-compatible, and
Tandy[®] 1000 Series Computers*

Designed and Developed by
Audio Light, Inc.

ACTIVISION

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Important Notice for Tandy 1000 SL and TL Owners

Be sure to load DeskMate directly from your computer's ROM. Do not use the Runtime version supplied with The Music Studio 3.0.

PD-946-129

Update

The Music Studio 3.0

for Tandy, IBM and other MS-DOS computers

This *Update* serves to clarify and correct certain information provided in the user's guide. Tandy 1000SL owners, be sure to read the section titled "Note to Tandy 1000SL Owners." All other users should read the information contained in the sections "Additional Information" and "Corrections."

NOTE TO TANDY 1000SL OWNERS

512K of memory is recommended for full featured use of *The Music Studio 3.0*. If you wish to operate with 384K RAM, follow the steps listed below:

1. Be sure your system configuration contains no loadable drivers not supported by DeskMate; i.e., mouse devices or joystick drivers. These require extra memory which will take away functionality of *The Music Studio 3.0*.
2. Load DeskMate from the D: drive. Always use the version of DeskMate resident in ROM and accessible through drive D (D:). Do not use the runtime version supplied with *The Music Studio 3.0*.
3. Insert the *Music Studio 3.0* program disk into drive A:.
4. From the DeskMate directory menu, select **Change Directory**.
5. Type A:\ into the directory dialog box and press **Return**.
6. From the DeskMate Program List Box, double click on **MSTUDIO.PDM** to start *The Music Studio 3.0* program.
7. You're now ready to begin the Guided Tour in the user's guide starting on page 17.

NOTE: If you're using a display or printer device that is not supported by the DeskMate drivers-- for example, an EGA or VGA video display card--you'll get the following message:

Unable to locate file 'XXX.RES'.

Press Enter to search the entire system, or Esc to cancel...

<0>K, <C>ancel...

Press C to cancel and follow the steps below to use the drivers supplied with *The Music Studio 3.0*.

You'll need to copy the runtime drivers from the DeskMate Runtime disk onto another floppy or your hard disk. However, the 1000SL version of DeskMate does not recognize the file extension of the runtime drivers. Before running DeskMate from the D: drive, insert the DeskMate Runtime disk into drive A:. At the A: prompt, type in one of these commands:

If you're using a floppy disk (have a formatted disk on hand) use this command:
Copy A:*.RRS B:*.RES

If you're using a hard drive, you can copy the extensions to the C: drive using this command:
Copy A:*.RRS C:*.RES

Now you're ready to load DeskMate and *The Music Studio 3.0* as described in steps 1 through 7 above.

ADDITIONAL INFORMATION FOR ALL USERS

Song Scroll Bar (page 45)

Using the keyboard arrows allows you to scroll the separate staves of a song independent of one another. The scroll arrows at the bottom left and right of your screen scroll the staves in unison.

Column Numbers (pages 45-46)

A repeat symbol, inserted volume, inserted tempo, and inserted measure bar are all assigned a column number; therefore, the length of a song (in columns) will increase if any of these items are added.

MIDI Record - Metronome (pages 36, 78)

When using the metronome for recording from an attached MIDI instrument, a note recorded on the metronome beat will always be displayed as a quarter note. Even if the time signature is set to 2/2, you must play one note for two metronome beats to get for example, a half note.

NOTE: Notes performed legato (with no time space between notes or overlapping start times) during a MIDI record are displayed with a rest placed over each note value.

Open Style (page 55)

If you have a song with one staff and you open a style that is saved with more than one staff, the extra staves will be added to your song. However, if a style that you open has fewer staves than your current song, the number of staves will remain the

same.

Print (page 56)

When you print a song with multiple staves that includes inserted and numbered measures, only the first staff will be printed with measure numbers.

Select Instruments (page 62)

If digitized sounds are selected from the Option Menu, the instrument names will change to reflect the names of the three digitized sounds and will not be saved. It's a good idea to save a style file with all 15 instrument names so you can use those names when the digitized sounds are turned off.

Note Filters

Edit Filters - Range boxes (page 67)

The range of the Edit Filter is from A0 to G8.

Delete Filter (page 68)

Using the Edit Filter to delete notes or instruments in a long song can take up to several hours to complete. When using this command, it's best to work on small edit blocks so the operation time can be reduced.

Duration Filter (page 69)

Applying the Edit Filter quantization on a marked block will change the duration of filtered notes but will *not* change the start time of filtered notes.

Design Sounds - Frequency Box (page 71)

The frequency box will accept only numbers between four and 4400.

MIDI Settings - Presets (page 76-77)

The Music Studio 3.0 allows for preset numbers 1 - 127. If your MIDI keyboard begins at preset 00, preset number 01 on *The Music Studio 3.0* will address that setting and all subsequent numbers will be off by one.

MIDI Settings - Assigning Instruments (page 77)

If you enter S in the volume settings, the song will play at the volume associated with each note; i.e., a song recorded from a volume-sensitive keyboard or notes pasted with changes in the volume slider. This is useful when preserving the volume information of a MIDI recording and when note volumes are changed using the filter.

NOTE: If a section of music is pasted into a song and the MIDI volume setting is set to S, the notes will be performed at the volumes of the original song and not at the volume of the target song.

If you enter V in the volume settings, the song will play back using the volume slider setting, inserted volume changes, and crescendo/diminuendo notation.

Notation Menu - Crescendo/Diminuendo (page 82)

A crescendo or diminuendo can only be heard if a song is played with the MIDI option and the MIDI keyboard and preset are velocity sensitive.

Auto-Insert Measures (page 84)

When editing a song that has measure bars auto-inserted, you must select the Auto-Insert Measures command after making an editing change in order for the measures to be recalculated and accurately displayed.

Slur (page 84)

Notes that are slurred will delete a staccato or accent marking.

Tie (page 84)

With digitized sounds, only the first tied note will play, followed by silence for the remaining duration.

Init Files

When *The Music Studio 3.0* loads, it looks for init files for default settings. You can create these files directly:

INIT.SND - Save a sound file as **INIT.SND** in the **Design Sound** dialog box. This will be the default sound whenever *The Music Studio 3.0* cannot find a digitized sound.

INIT0.STY - Save a style file as **INIT0.STY** with the **Save Style As** command in the File Menu. This will be the default style setting for song one when you first load the program (see "Save Style As", pages 55 - 56).

INIT1.STY - Save a style file as **INIT1.STY** with the **Save Style As** command in the File Menu. This will be the default style setting for song two when you first load the program (see "Save Style As", pages 55 - 56).

Volume Changes

Volume changes on an attached MIDI instrument will be active only if:

- the keyboard is velocity sensitive (volume-sensitive) *and*
- the specific preset (sound) is velocity sensitive.

CORRECTIONS

Volume (page 50)

All sound options (internal, digitized, and MIDI sounds) respond to the volume slider setting and to inserted volume changes.

The.
Music
Studio
3.0TM

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An Introduction to *The Music Studio 3.0*

Features of The Music Studio 3.0

The Music Studio 3.0 is a fast, fun, creative way to compose, edit, orchestrate, record, and play music on your IBM PC or Tandy 1000 computer.

Use its powerful tools to select instrumentation and place notes on the staff to compose a tune. You may change instruments, alter their sounds, speed up or slow down the tempo, change keys, and play back what you've written. Record your own performance on an attached MIDI instrument, and look at the score on the screen when you're finished. If you have the Tandy sound feature in your computer, use a microphone to create your own sampled sound instruments to use in your songs. Save your work on a disk to retrieve at any time.

The Music Studio 3.0 offers a number of special features for composing and playing back your musical compositions:

- standard musical notation including notes, rests, key and time signatures, accidentals, repeats, and more
- mouse or joystick operation, using intuitive "point and click" tools for note entry
- powerful editing tools that move, repeat, or copy sections of a song and transpose passages up or down
- two different songs in memory at once for easy cutting and pasting between songs
- Up to 15 different instruments for orchestrating songs
- Real-time recording for recording music directly from a MIDI-equipped instrument
- MIDI compatibility to play back songs through MIDI-compatible instruments
- a full-featured waveform editor that edits and creates sampled sound instruments

How to Use This Guide

This guide has three sections:

- “Setting Up *The Music Studio 3.0*,” which describes all the necessary hardware and software and shows you how to set up and run *The Music Studio 3.0*.
- “A Guided Tour of *The Music Studio 3.0*,” which takes you through all the basic features of *The Music Studio 3.0*. The tour makes stops along the way so you can experiment with the program and get a feel for how it works.
- The “Reference” section, which covers every aspect of *The Music Studio 3.0*, including those not covered in the guided tour. The “Reference” section is organized by the way things appear on the screen: the work area, controls, and menu commands are covered in turn.

Important: Be sure to read through “Setting Up *The Music Studio 3.0*” to make sure everything is set up properly on your computer to run *The Music Studio 3.0*. You can then read through the guided tour at your leisure for an easy introduction to *The Music Studio 3.0*. When you have a general understanding of how *The Music Studio 3.0* works, take time to go through the “Reference” section to learn about the features not covered in the guided tour.

If you’re adventuresome and prefer to explore *The Music Studio 3.0* on your own instead of following the guided tour, go ahead! Just be sure to read the setup section first. Once you’re set up, experiment: *The Music Studio 3.0* is simple and straightforward and works the way you’d expect it to. You can always turn to any part of the “Reference” section for details on a specific operation. (The “Reference” section table of contents is on page 39.) You can also find specific information by using the index at the back of this guide.

What You Need to Know Before Using This Manual

Before you start using this manual, you should know the fundamentals of running your computer. Because *The Music Studio 3.0* includes a run-time version of DeskMate® (an interface program used on the Tandy 1000 computer that works also with IBM and IBM-compatible computers), you should know how to start your computer and how to run DeskMate using a

mouse or joystick. This manual teaches you enough about DeskMate to run *The Music Studio 3.0*; if you want to learn more, read the DeskMate manual that comes with the full version of DeskMate. Tandy 1000 owners receive DeskMate free with their computer; if you own an IBM or IBM-compatible computer, you can buy DeskMate at a nearby Radio Shack store; however, *The Music Studio 3.0* includes a run-time version of DeskMate.

If you can read music and understand the basics of MIDI (the Musical Instrument Digital Interface) and sampled sounds, you'll find this knowledge useful as you use *The Music Studio 3.0*. If you don't know anything about these topics, don't worry! You can learn a lot just by taking the guided tour from start to finish, and you can still use *The Music Studio 3.0* to good effect. You'll find short explanations of MIDI and sampled sounds in the "Reference" section.

A Note on Instructions and Type Styles

In this guide, **boldface** type shows words and messages that appear on the screen. Boldface also shows words for you to type or keys for you to press. For example,

Press **Esc**

means that you press the key that has the word *Esc* printed on it. The instruction "enter" asks you to type in the text that follows it and then press the **Enter** key to enter the text. For example,

Enter **cd mstudio**

means that you type the command **cd mstudio** and then press the **Enter** key.

Keyboard accelerators are key combinations that perform a function. These combinations are shown with pluses between the key names. For example,

Ctrl+P

means that you press the **Ctrl** and **P** keys simultaneously.

Mouse and joystick instructions often ask you to click the button. If you have a mouse or joystick with more than one button, click any button. If you're using a joystick and the instructions ask you to move the mouse to the left or right, or drag it down, push or pull the joystick in the corresponding direction.

Now that you know how the manual works, read on to find out how *The Music Studio 3.0* works.

Setting Up *The Music Studio 3.0*

To run *The Music Studio 3.0* you must first be sure that you have all the necessary equipment and disks. You should then copy your original *The Music Studio 3.0* disks and set them aside for safekeeping. With copies in hand, you turn on your computer, run DeskMate, and then open *The Music Studio 3.0*. This section shows you how.

Required Hardware

To run *The Music Studio 3.0* on your computer, you must have the following equipment:

- An IBM, IBM-compatible, or Tandy 1000 series computer with CGA, EGA, Hercules monochrome, or VGA graphics capabilities and a monitor capable of displaying those graphics.
- A mouse or joystick.
- Three blank 3 1/2-inch floppy disks, double-sided and double-density, if your computer has a 3 1/2-inch disk drive; OR four blank 5 1/4-inch floppy disks, double-sided and double-density if your computer has a 5 1/4-inch disk drive. Use these blank disks for storing songs and instruments and for making working copies of *The Music Studio 3.0* disks.

You may also want to use the following additional equipment to make your work easier and to improve the sound of your songs:

- An attached MIDI instrument (or several MIDI instruments) such as a keyboard synthesizer to play back songs and to play performances into *The Music Studio 3.0* for recording.
- A MIDI adaptor card to connect external MIDI instruments. *The Music Studio 3.0* works with the Roland™ MPU-401 MIDI card (or a compatible) or the Mellotron™ MUART card.
- The Tandy sound feature in the 1000 SL and TL series Tandy computers. This capability adds a realistic sampled sound voice to the Tandy 1000.

- A Tandy DMP 105, 200, 420 or 430 printer, an IBM-compatible graphics printer, or a Hewlett-Packard LaserJet® or LaserJet-compatible printer.
- A hard disk drive to speed up saving and opening songs and instruments.

Required Software

To run *The Music Studio 3.0*, you need MS-DOS®3.2 or later, DeskMate, *The Music Studio 3.0* program, and accompanying files. Most IBM or IBM-compatible computers should come with MS-DOS. DeskMate comes with the Tandy 1000 computer. If you don't have DeskMate, *The Music Studio 3.0* comes with a small run-time version of DeskMate.

If you have a 5 1/4-inch disk drive, *The Music Studio 3.0* supplies these disks:

- *The Music Studio 3.0* Program disk
- *The Music Studio 3.0* DeskMate Runtime disk
- *The Music Studio 3.0* DeskMate Sounds and Songs disk

If you have a 3 1/2-inch disk drive, *The Music Studio 3.0* supplies these disks:

- *The Music Studio 3.0* Program and DeskMate Runtime disk
- *The Music Studio 3.0* Sounds and Songs disk

Copying Your Original Disks

Before you do anything with *The Music Studio 3.0* disks, take a few minutes to make copies of them to use as working disks and put the originals away for safekeeping. That way if anything happens to ruin your working disks, you can make another copy from the original. Remember that any copies you make are for your personal use only, and not for distribution to others.

Copying to Floppy Disks

If you have a computer with a disk drive, follow these instructions to copy *The Music Studio 3.0* disks. (If you have a hard disk drive, skip to the next section.)

1. Look at the write-protect notch in the corner of each *The Music Studio 3.0* disk. For 3 1/2-inch disks, if the notch isn't open, slide the black tab *so you can see through the notch*. For 5 1/4-inch disks, if the notch is open, put a piece of write-protect tape over the notch *so you can't see through the notch*. This write-protects the original disks so you can't accidentally erase them or write over them.

2. Insert the MS-DOS disk in disk drive A and turn on the computer.

When MS-DOS is loaded, the disk drive light goes out, and you see an A:> prompt on the screen.

3. If you have a single disk drive, continue with these instructions to copy your disks. If you have two disk drives, move on to the alternate instructions that follow these.
4. Enter **diskcopy**. MS-DOS gives you instructions for inserting disks; use *The Music Studio 3.0* Program disk as the source disk and a formatted blank disk as the destination disk.
5. Follow the MS-DOS disk-swapping instructions to make a copy. When MS-DOS asks if you want to make another copy, eject the disk that's in the drive (be sure the drive light is out first) and label the copy disk as *The Music Studio 3.0* Program disk.
6. Enter **Y** to make another disk copy, and follow the same procedure to copy the other *The Music Studio 3.0* disks.
7. Enter **N** at the MS-DOS copy query when you've finished copying all the disks. The A:> prompt returns to the screen.

If you have two disk drives, use these instructions to make disk copies:

1. Follow steps 1 and 2 in the preceding instructions.
2. Enter **diskcopy a: b:**. MS-DOS gives you instructions for inserting disks; use *The Music Studio 3.0* Program disk as the source disk in drive A and a formatted blank disk as the destination disk in drive B.

3. Press **Enter** to start copying. When the copy is finished and MS-DOS asks if you want to make another copy, eject the disks in the drives (be sure the drive lights are out first) and label the copy disk as *The Music Studio 3.0* Program disk.
4. Enter **Y** to make another disk copy, and follow the same procedure to copy the other *The Music Studio 3.0* disks.
5. Enter **N** at the MS-DOS copy query when you've finished copying all the disks. The **A:>** prompt returns to the screen.

Copying to a Hard Disk without DeskMate

If you have a hard disk installed in your computer and don't have DeskMate already installed, follow these instructions to copy the contents of *The Music Studio 3.0* disks onto your hard disk.

Note: It is a good idea to make backup floppy disks as described in the previous section even though you have a hard disk.

1. Look at the write-protect notch in the corner of each *The Music Studio 3.0* disk. For 3 1/2-inch disks, if the notch isn't open, slide the black tab down *so you can see through the notch*. For 5 1/4-inch disks, if the notch is open, put a piece of write-protect tape over the notch *so you can't see through the notch*. This write-protects the original disks so you can't accidentally erase them or write over them.
2. Turn on your computer. A **C:** prompt appears on the screen.
3. Enter **md mstudio** to create a new directory named MSTUDIO on the hard disk.
4. Enter **cd mstudio** to change to the MSTUDIO directory.
5. Insert *The Music Studio 3.0* Program disk in drive A.
6. Enter **copy a:*. * c:** to start copying. MS-DOS copies all the files from *The Music Studio 3.0* Program disk to the MSTUDIO directory on the hard disk drive.
7. When the disk file copy is finished and the floppy disk drive light is out, eject *The Music Studio 3.0* Program disk and repeat steps 5 and 6 to copy the contents of the other *The Music Studio 3.0* disks onto the hard disk drive.

8. When you've finished copying the contents of all the disks, enter `c:\` to return to the hard disk drive root directory, then eject any remaining *The Music Studio 3.0* disks.

You have just copied *The Music Studio 3.0* program and its associated files into its own directory. Any time you run *The Music Studio 3.0* from the hard disk, you must enter the MSTUDIO directory first.

Copying to a Hard Disk with DeskMate

If you have a hard disk installed in your computer and have DeskMate already installed, follow these instructions to copy the contents of *The Music Studio 3.0* disks onto your hard disk.

1. Follow steps 1 through 5 in "Copying to a Hard Disk without DeskMate."
2. From the Program and Sound and Song disks, copy only the Program file (MSTUDIO.PDM), Configuration file (*.CFG), Sound file (*.SND), and Song file (*.MSS).

Creating a Blank Disk for Song Storage

If you don't have a hard disk drive, format a blank disk that you can use later to save songs and instruments you create in *The Music Studio 3.0*.

1. Place a blank disk in drive A.
2. Enter **format a:**. MS-DOS asks you to insert the disk you want formatted in drive A.
3. Insert the blank disk in drive A and press **Enter** to start formatting. MS-DOS tells you its progress as it formats the disk, and when finished asks if you want to format another disk.
4. Enter **n** to stop the formatting process.
5. Eject your newly formatted disk (be sure the drive light is out first) and label it as a Song and Instrument Storage disk.

Once you've copied *The Music Studio 3.0* disks, you can run DeskMate and *The Music Studio 3.0* from your copies and put away the original disks for safekeeping.

Running The Music Studio 3.0

The instructions that follow are for four different situations:

- Working from 3 1/2-inch floppy disks or 5 1/4-inch floppy disks if you don't have DeskMate
- Working from 3 1/2-inch floppy disks or 5 1/4-inch floppy disks if you do have DeskMate
- Working from a hard disk drive if you don't have DeskMate
- Working from a hard disk drive if you do have DeskMate

Follow the set of instructions appropriate to your situation.

Working from Floppy Disks without DeskMate

1. Insert the DeskMate Runtime Software disk in drive A.
2. Enter **Music** to start DeskMate.
3. You'll be asked to insert a disk containing MSTUDIO.PDM. Insert the Program disk in any drive (if you have 3 1/2-inch disks, keep in the same disk.)

Working from Floppy Disks with DeskMate

1. Bring up DeskMate by typing **desk** or booting DeskMate from ROM.
2. Pull down the **Desktop** menu and select **Install**.

DeskMate will create a window called MUS STUDIO on the Desktop screen.

3. Select **Music Studio** from the MUS STUDIO window by pointing to it with the cursor and clicking the mouse or joystick button.

Working from a Hard Disk Drive without DeskMate

1. If you haven't already done so, copy your disks and create a Music Studio directory as described in the "Copying to a Hard Disk without DeskMate" section earlier in this manual.

2. Change to the **MSTUDIO** directory if you're not already in that directory. (Use the command **cd mstudio** if you just turned on your computer.)
3. Enter **Music** to start the run-time version of DeskMate. *The Music Studio 3.0* opens on the screen.

Working from a Hard Disk Drive with DeskMate

1. If you haven't already done so, copy your disks and create a Music Studio directory as described in the "Copying to a Hard Disk with DeskMate" section earlier in this manual.
2. Bring up DeskMate by typing **desk** or booting DeskMate from ROM.
3. Pull down the **Desktop** menu and select **Install**.

DeskMate will create a window called **MUS STUDIO** on the Desktop screen.

4. Select **Music Studio** from the **MUS STUDIO** window by pointing to it with the cursor and clicking the mouse or joystick button.

Quitting The Music Studio 3.0

To quit *The Music Studio 3.0* and return to the Desktop, press **Esc** or choose **Exit** from the **File** menu.

Note that if you did any work in *The Music Studio 3.0*, it asks you if you want to save your work before you return to the Desktop. Answer **No** to quit the program without saving anything you entered. (If you've created something you really want to save, answer **Yes**. You can find directions in the "Reference" section of this manual for using the **Save File** dialog box that appears.)

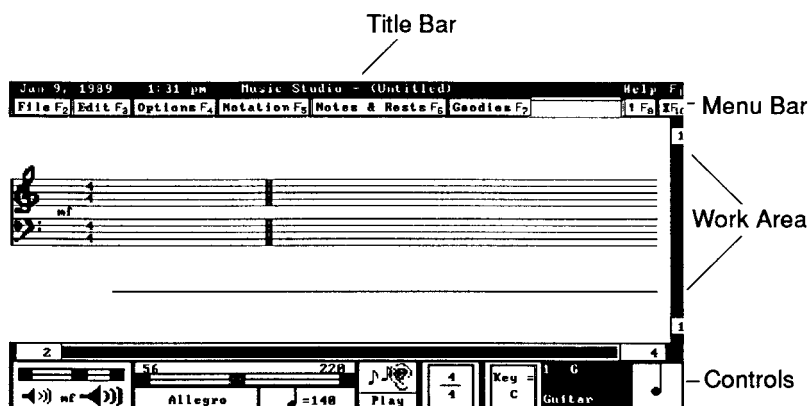
A Guided Tour of *The Music Studio 3.0*

Chapter 1—

A Look Around *The Music Studio 3.0*

Now that you have everything set up, open *The Music Studio 3.0* to take a look around.

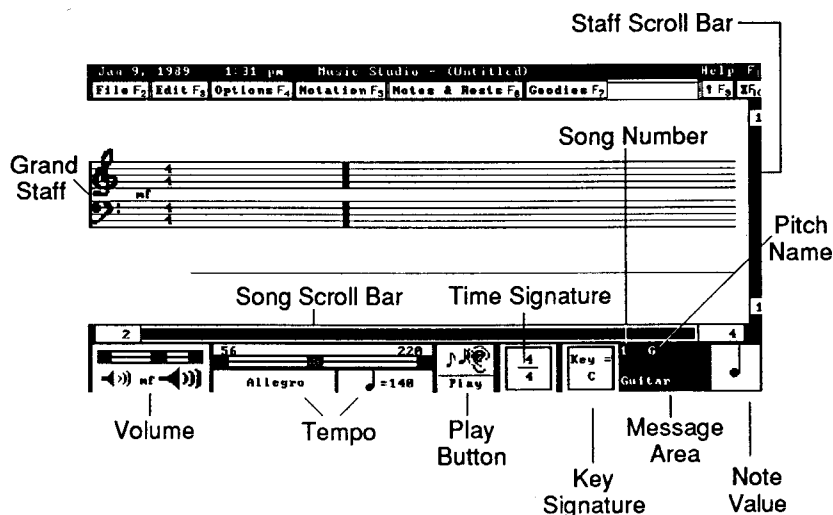
The Music Studio 3.0 Screen



The Music Studio 3.0 screen has four main sections:

- the **work area** where you create songs by entering notes on musical staves
- the **controls** that you use to control song playback
- the **menu bar** that contains menu commands you use to compose, record, edit, play, and save songs
- the **title bar** that tells you the name of the song or file you're working on

The Work Area



The grand staff, made of the upper staff (in treble clef) and the lower staff (in bass clef), is in the middle of the work area. Although you see only the grand staff when you first open *The Music Studio 3.0*, you can add as many as seven more staves. As you move the pointer over the staves, it turns into a note shape called the *note pointer*. You place notes in a song by positioning the note pointer on a staff and clicking the mouse or joystick button.

Note: The instructions in the rest of this manual refer only to the mouse. If you're using a joystick and the instructions ask you to move the mouse to the left or right, or drag it down, push or pull the joystick in the corresponding direction.

Two scroll bars control the view in the work area: the *song scroll bar* along the bottom of the work area and the *staff scroll bar* along the right side of the work area. The song scroll bar scrolls horizontally through music on the staves; the staff scroll bar scrolls vertically through staves in the work area.

The message area in the bottom righthand side of the work area shows the current instrument name and the pitch at the current location of the note pointer.

The Controls

The controls below the work area control song playback. They are:

Play Button - starts song playback

Key Signature - sets the key for your songs

Time Signature - sets the time signature for your songs

Tempo - sets playback tempo from slow (56 beats per minute) to fast (220 beats per minute)

Volume - sets playback volume of newly entered notes from soft (pp) to loud (ff)

Note Value - sets the duration value of the new notes or rests you insert in a staff

The Menus

The menus in the menu bar contain commands that work on your songs:

The File menu commands save and open songs and *The Music Studio 3.0* settings from disk. They also print out a song on an attached printer and quit *The Music Studio 3.0* when you're finished working.

The Edit menu commands cut, copy, and paste music within a song and/or between songs. They also switch between two songs and perform sophisticated filter editing.

The Options menu commands contain some of *The Music Studio 3.0*'s most powerful tools. They add new staves, create, alter, and set instruments, record performances from attached MIDI instruments, and set MIDI parameters for playback on MIDI instruments. They also set the voices that play songs and perform other important functions.

The Notation menu commands add important musical notation such as crescendi, diminuendi, repeats, measure bars, beams, ties, and slurs to a song.

The Notes & Rests menu commands change the type of notes and rests you add to a song by adding dots, accents, staccato marks, accidentals, and triplet markings. One command changes the note pointer to a rest pointer for inserting rests in a song.

The Goodies menu commands perform most of the operations of the controls below the work area—changing tempo, volume, time signature, key signature, and performing other operations.

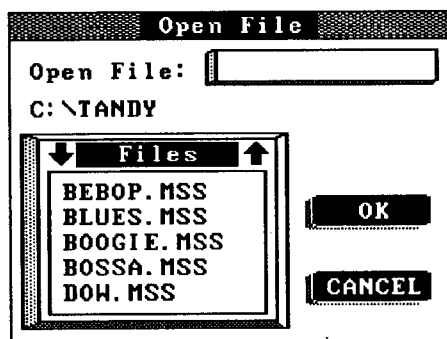
Chapter 2—Playing a Song

Playing a song in *The Music Studio 3.0* is a simple matter of opening a song from disk and clicking the **Play** button. Voila! Music plays.... To make playback even more entertaining, you can set the controls below the work area to change playback tempo or volume.

Opening a Song

The *Music Studio 3.0* Sounds and Songs disk includes several sample songs you can open and play to hear what *The Music Studio 3.0* can do. First make sure *The Music Studio 3.0* is open (open it again if you quit it previously). Then:

1. Insert the Sounds and Songs disk in drive A (this isn't necessary if you copied the Sounds and Songs disk onto your hard disk).
2. Choose **Open** from the **File** menu. (To choose a command from a menu, move the pointer to the menu name you want on the menu bar. Once there, hold down the mouse button to open the menu, then drag the pointer down the list of commands in the menu until you point to the one you want. Release the button to choose the command under the pointer. The menu closes and *The Music Studio 3.0* executes your command.) When you choose **Open** from the **File** menu, the Open File dialog box appears.



3. Click the **Open File:** box, then type **A:** in the box and press **Enter**. The Files list box shows all the songs available on the Sounds and Songs disk. (*The Music Studio 3.0* song filenames all end in .MSS.)

Note: If you have a hard disk drive, you don't need to enter **A:** to change drives. You copied all the songs to the hard disk in the last section; they should already appear in the Files list box.

4. Point to the song **BLUES.MSS** and double-click the mouse button. (Double-click means to move the pointer over the song name to highlight it, and then click the mouse button twice in rapid succession.) The dialog box closes and the song **BLUES** appears in the work area.

Playing a Song

You can play the song by clicking the **Play** button; the song plays through to the end unless you press a keyboard key to stop it.

1. Click the **Play** button. **BLUES** starts to play, and a message on the screen tells you to press the space bar to stop playback.
2. Press the space bar to stop playback. The sound stops.
3. Click the **Play** button once again, and listen to the entire song. Playback stops at the end of the song.

Note that the Tandy 1000 L series of computers has different playback voices you can use to play back songs. The "Reference" section of this manual tells you how to turn on these voices.

Changing Tempo

Changing the playback tempo (the speed of playback) is a fun way to change the way the song plays back. Use the tempo control:

1. Move the pointer to the block in the center of the tempo control's slider. Hold down the button and drag the slider to the right. As you do so, the tempo value below the slider increases. Release the button when the value reads 200 (or close to it).
2. Click the **Play** button. The song plays back at a much faster tempo.
3. Listen to the whole song, or press the space bar to stop playback.

Chapter 3—Composing a Song

Composing music from scratch is easy with *The Music Studio 3.0*. You enter the notes and rests of your song on the staves in the work area and then listen to the song immediately by clicking the **Play** button. If you want to add more music, delete some notes, or rework your entire song, you can use the commands on the **Edit** menu and the note pointer to change what you wrote, and then play it back to see if you like your changes.

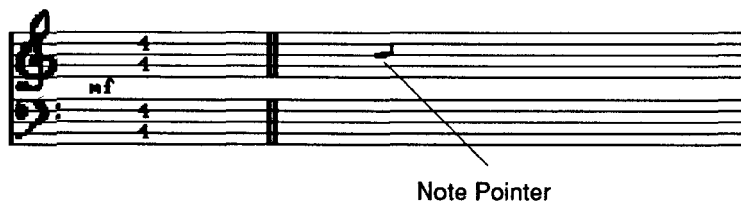
This chapter shows you how to write a song from scratch. You won't actually compose your own song this time; instead you recreate an old standby—"Frere Jacques."

If you quit *The Music Studio 3.0* after the last chapter, open it now and find the blank, formatted disk you created earlier; you need it to save the song you create.

Placing Notes on the Staff

To create music in the work area, you place notes on the staff. If there are already notes in the work area, clear them, and then enter the first notes of "Frere Jacques":

1. Choose **New** from the **File** menu to clear the work area. A dialog box asks if you want to save any changes in the song. Click the **NO** button to close the dialog box without saving any changes.
2. Pull down the **Options** menu and look at the **Note Sound Off** option. If there is a check before it (which means the note sound is off), choose **Note Sound Off** to remove the check and turn the note sound on. (**Note Sound On** asks *The Music Studio 3.0* to sound pitches as you move the note pointer up and down on the staff.)
3. Point to the grand staff—the pointer changes to the note pointer. Pitches sound as you move up and down the grand staff; each line and space in the staff has its own pitch. As you move left and right on the staff, the note pointer jumps from space to space. Each horizontal position it holds on the staff is called a *column*.



4. Move the head of the note pointer (the circular part of the note) exactly between the two staves in the first column (the left side of the work area). This pitch position is middle C. (Read the pitch name to the right of the key control to make sure you are at the right pitch.)
5. Click the mouse button to place a quarter note at middle C in the first column.
6. Move the note pointer to the next column to the right and then up a step to the pitch just below the bottom line of the upper staff (a **D** pitch). Click the mouse button to place a quarter note here.
7. Move the note pointer again one column to the right and one pitch up to the bottom line of the upper staff. Click again. An **E** quarter note appears.
8. Move the note pointer to the right of the **E** and down two steps to middle C again. Click to place the note. The four notes (**C, D, E, C**) you've entered are the first four-beat measure of "Frere Jacques."
9. Click the **Play** button to play the notes.



Deleting and Changing Notes

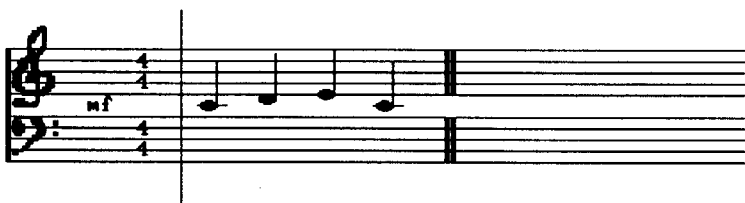
If you accidentally place a wrong note on the staff, move the head of the note pointer over the head of the note and click the mouse button: the wrong note disappears from the staff. You can now enter the correct note.

Selecting a Music Block

“Frere Jacques” has four repeating measures of music—each measure plays twice. If you enter a measure and then copy it to produce a second identical measure, you save a lot of work in note entry. To do so, you must first select a section of music in the work area called a *music block*. Once you select a music block, the editing commands you choose from the **Edit** menu work on just that music block.

To select a music block, you move the pointer to the upper or lower edge of the work area; a vertical line called a *block selector* appears on the staff. As you move the pointer left and right along the edge of the work area, the block selector moves left and right. You click the mouse button to place the block selector at the location you want, and then repeat the procedure to put a second block selector in the song. The two selectors define a music block. Try it on the four-note measure you just entered:

1. Point to the bottom of the work area just above the scroll bar and below the first note in your song. A block selector appears. Move it just to the left of the first note.



2. Click the mouse button. The block selector is set before the first note.
3. Point to the bottom of the work area below the last note in the four-note measure. A second block selector appears. Move it just to the right of the last note.
4. Click the mouse button. The music between the two block selectors appears highlighted: these four notes are now selected as a music block.

If you didn't set the music block properly, remove it by moving the pointer to the top or bottom edge of the work area and clicking to set a new block selector. The music block disappears. Set a second block selector to define a new music block.

Copying a Music Block

Once you select a music block, you can use the commands on the **Edit** menu to perform an editing action on the block. The **Copy** command copies the contents of the music block into a section of memory called the *clipboard* without disturbing the music in the song. The **Paste** command inserts whatever music is stored in the clipboard into the song. Use both of these commands to copy the four-beat measure you just selected as a music block:

1. Choose **Copy** from the **Edit** menu to copy the measure to the clipboard. A **C** appears to the right of the song scroll bar, indicating there's something in the clipboard.
2. Set a new block selector at the end of the measure by moving the pointer to the location along the top edge of the work area and then clicking the mouse button. The music block disappears and a single block selector appears on the staff.
3. Choose the **Paste** command from the **Edit** menu to copy the contents of the clipboard to the song at the location of the block selector. A copy of the measure appears next to the original measure.
4. Select **Auto-Insert Measures** from the **Notation** menu. Measure bars are automatically inserted in the proper places.
5. Click the **Play** button to hear both measures play.

Changing Note Values

The third measure of "Frere Jacques" has three notes: two quarter notes followed by a half note. (A half note plays twice as long as a quarter note and looks like a quarter note with a hollow note head.) Enter the two quarter notes on the staff, then change the note value to a half note and enter a half note:



1. Enter a quarter note **E** (on the bottom line of the top staff) immediately following the last note of the staff.
2. Enter a quarter note **F** (on the space above the **E**) in the column following the **E**.
3. Move the pointer to the staff to enter a **G** note (on the second line from the bottom of the top staff) immediately after the **F** note. Hold down the mouse button while rolling the mouse up or down to change the note value. The value is shown in the note value control box in the lower right corner of the screen. When the note value control box shows a half note, release the mouse button.
4. To create the fourth measure, copy the three notes you've just entered by selecting them as a music block and then choosing **Copy** from the **Edit** menu.
5. Paste the copied notes back in the song by setting a single block selector at the end of the song and choosing **Paste** from the **Edit** menu.
6. Select **Auto-Insert Measures** to organize the newly entered notes into two measures. The fourth measure, the copy of the notes in the third measure, appears.
7. Click the **Play** button to play the song. You can hear the first four measures — half of the song!

Scrolling through a Song

The first four measures of "Frere Jacques" fill up the work area with notes and leave little room to add new notes at the end of the song. The left and right edges of the work area (just inside the staff scroll bar) are scroll zones. When you place the pointer in a scroll zone, small arrows appear in the corners of the work area to show you which direction you will scroll. You then click the mouse button and the song scrolls one column in that direction. Hold the mouse button down to continually scroll in that direction.

Try scrolling right to open up more space to the right of the notes you just entered:

1. Move the pointer to the right end of the staff. Small right arrows appear at the upper and lower right corners of the work area.

2. Hold down the mouse button to scroll to the right until only the last note shows on the left of the staff.
3. Release the mouse button to stop scrolling.

If you scroll too far, move the pointer to the left end of the staff and scroll left until the last note shows on the staff.

Adding Dotted Notes

The next measure begins with a dotted eighth note. (An eighth note is half the length of a quarter note. A dot added to a note means the note plays half again as long as it usually does, so a dotted eighth note plays one and a half times as long as a regular eighth note.) The notes that follow are a sixteenth note, another dotted eighth note, another sixteenth note, and two quarter notes. Enter them at the end of the last measure in the song:



1. Use the note value control box to choose an eighth note (which looks like a quarter note with a single flag on its stem): Move the pointer to the note value control box, press the mouse button, drag the mouse up or down until the eighth note appears, then release the mouse button.
2. Choose **Dotted** from the **Notes & Rests** menu. A dot appears after the note in the note value control box.
3. Move the pointer to the staff and place a G note following the end of the fourth measure. (G is the second line from the bottom of the top staff.)
4. Move the pointer over two columns to the right and place another dotted G note.
5. Choose **Dotted** once more from the **Notes & Rests** menu. The dot disappears from the note value control box.

6. Use the note value control box to choose a sixteenth note (a note with two flags on its stem).
7. Move the pointer to the empty column between the two dotted G notes you just placed and place an A sixteenth note. (Use the second space from the bottom of the top staff).
8. Point past the second dotted G note and place an F. (Use the first space from the bottom of the top staff).
9. Select a quarter note in the note value control box.
10. Enter a quarter note E followed by a quarter note C to finish the measure.
11. Copy the six-note measure using the **Copy** command, then paste it at the end of the song using the **Paste** command.
12. Select **Auto-Insert Measures** to organize the newly entered notes into the fifth and sixth measures.
13. Now, on your own, add these last two measures to the song:



14. Click the **Play** button to play the entire song.

Saving Your Work

After you create a song, you'll want to save it to disk so you can open it and play it later. If you don't have a hard disk drive, save the song to the blank disk you created earlier:

1. Insert the blank disk in drive A. (Eject the disk there, if necessary.)
2. Choose **Save Song as** from the **File** menu. A **Save File** dialog box appears.
3. Type the name **A:FRERES** in the **Save Song as** box to name the song **FRERES** and save it on drive A.

4. Press **Enter** to save the song to disk. The **Save** command automatically adds the file extension **.MSS** to the name and saves the song.

If you have a hard disk drive, save the song to the hard disk:

1. Choose **Save Song as** from the **File** menu. A **Save File** dialog box appears.
2. Type the name **FRERES** in the **Save Song as** box to name the song **FRERES** and save it on the currently selected drive—the hard disk drive.
3. Press **Enter** to save the song to disk. The **Save** command automatically adds the file extension **.MSS** to the name and saves the song.

Once you save a song with the **Save** command, the file name you enter appears in the title bar. If you choose the **Save** command instead of **Save Song as**, *The Music Studio 3.0* replaces the old (last saved) version of your song with the current version that's on the screen. To save a previously saved song as a new file with a new name, or to save different versions of the same song, choose **Save Song as** from the **File** menu. The **Save File** dialog box appears, and you can enter a new name and specify a new disk drive if you want.

It's a good idea to save your song frequently while you work on it. Then if the power goes out or some other mishap occurs, you always have some of your work saved on disk. If you save every 15 minutes, then you can't lose more than 15 minutes of work.

Chapter 4—Using MIDI

If you have a MIDI instrument such as a synthesizer or a drum machine, you can use *The Music Studio 3.0* to play songs on the instrument, or you can record your performances on the instrument as a song in *The Music Studio 3.0*. First you must connect the instrument to your computer with MIDI cables and a MIDI interface card. The beginning of this manual lists the interface cards that work with *The Music Studio 3.0*; once you have the card, you must install it in the computer following the instructions that come with the card. Using MIDI cables, plug your MIDI instrument into the card.

Once your MIDI instrument is connected, you can specify instrument changes within a song to play back the song over the MIDI instrument using the instrument's different sounds (usually called *patches*). You then set *The Music Studio 3.0* to communicate with your MIDI instrument over the proper MIDI channels using the preset numbers you want.

Note: If some of the MIDI terms are confusing to you, see the brief MIDI tutorial in the “Reference” section that introduces you to some of MIDI’s fundamental concepts.

Making MIDI Connections

Although different MIDI instruments have different MIDI ports on them, most have a MIDI In port and a MIDI Out port. To make connections with the MIDI interface card, you use one MIDI cable to connect the MIDI In port of the instrument to the MIDI Out port of the interface card. You use a second MIDI cable to connect the MIDI Out port of the instrument to the MIDI In port of the interface card. Connecting the instrument MIDI Out to the interface card MIDI In is necessary if you want to record your performances as a song. Connecting the interface card MIDI Out to the instrument MIDI In is necessary to play back your songs on the MIDI instrument. For more information on connections, read the manuals that came with your interface card and your MIDI instrument.

Using Different Instruments During Note Entry

When you enter notes on a staff in the work area, the message area to the right of the **Key** button lists an instrument name. All notes you enter play back using that instrument. *The Music Studio 3.0* has 14 other instruments you can use to enter notes. When you choose a new instrument, the

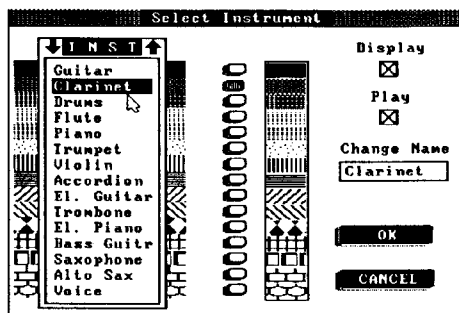
instrument's name appears in the message area, and all notes you enter play back using the new instrument. To help you see where different instruments are used for note entry, each instrument has its own texture (or color, if you're using a color system). Notes entered with one instrument have a note head made of a different texture (or color) than notes entered with a different instrument.

Try using four different instruments as you re-enter "Frere Jacques":

1. If you have music in the work area, choose **New** from the **File** menu to clear the work area.
2. Enter the first two measures of "Frere Jacques" (shown below). The instrument you're using to enter notes is Guitar, the instrument listed in the message area. The notes representing the Guitar appear in solid black.



3. Choose **Select Instrument** from the **Options** menu. The **Select Instrument** Dialog box opens. The instrument list on the left of the box shows the name of each instrument available beside the texture or color of the instrument.



- Click the name **Clarinet**, then click **OK** to close the dialog box. The dialog box closes and the note in the note value control box, which now represents the Clarinet, turns an evenly textured gray or blue.

Note: The specific colors indicated in this manual are what are seen in EGA color or Tandy 16 color modes only. The colors on a VGA or CGA monitor may differ.

- Enter the next two measures of “Frere Jacques” (shown below). The notes you enter on the staff are an evenly textured gray or blue, indicating that you’ve selected the Clarinet.



- Choose **Select Instrument** from the **Options** menu and select **Violin** as a new instrument.
- Enter the next two measures of “Frere Jacques” (shown below). The notes you enter for the Violin appear as vertical bars or are red in color.



- Select **Piano** as a new instrument and enter the last two measures of “Frere Jacques” (shown below). The notes representing the Piano are a lightly textured gray or pink in color.



9. Use the **Save Song as** command to save the song to disk and name it **FRERE2** so you can keep it safe for playback over your MIDI instrument.

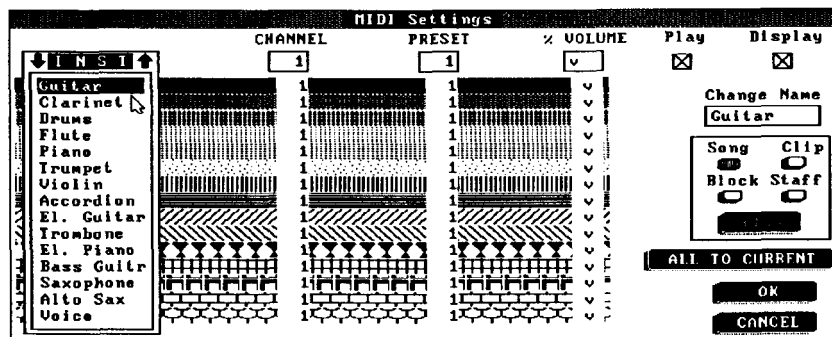
Note that you can change instruments as you enter notes without using the Select Instrument dialog box: Press any of these keys: **1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, or F**. These 15 speed keys correspond to the 15 instruments in the Select Instrument dialog box. For example, if you press **2**, the instrument changes to Clarinet (the second instrument on the list); if you press **F**, you get Voice (the fifteenth instrument on the list).

Choosing MIDI Settings

To play back your composition using the different patches on your MIDI instrument, you must set the way *The Music Studio 3.0* communicates with your instrument. For this example, leave the MIDI channel set to 1 (almost all MIDI instruments receive on channel 1 without any special settings), and use preset numbers 1, 2, 3, and 4 to choose presets on your instrument. These numbers choose the first four presets of your instrument, which could be anything from Fuzz Marimba to Bass Nose Flute. The actual presets don't matter; only the fact that you're using different presets matters.

Set new MIDI settings following these instructions:

1. Open the song **FRERE2** in the work area if it isn't there already.
2. Choose **MIDI Settings** from the **Options** menu. The MIDI Settings dialog box appears.



3. Select **Guitar** from the instrument list. (This is the first of the four instruments you used in "Frere Jacques.") The three boxes at the top of the dialog box list the Guitar's channel as **1**, with its preset as **1**, and its volume as **V**. These settings are what you want, so leave them as they are.
4. Select **Clarinet** from the instrument list. (This is the second of the four instruments.)
5. Select the Preset box at the top of the dialog box by pointing to it and clicking the mouse button, then use the keyboard to erase the current value and enter **2**. This means that the Clarinet voice plays using preset 2.
6. Select **Violin** (the third instrument) from the instrument list. The Channel, Preset, and Volume boxes change to show the Violin settings. The values to the right of the Clarinet name change to show the Violin's new settings.
7. Select the Preset box and enter **3** to choose preset number 3 for the Violin voice.
8. Select **Piano** (the fifth instrument) from the instrument list.
9. Enter the value **4** in the Preset box to choose preset number 4 for the Piano voice.
10. Click **OK** to close the dialog box and accept your settings.

Playing Back a Song via MIDI

Once you have the MIDI settings you want, MIDI playback is simple:

1. Turn on your MIDI instrument and make sure it's set to receive MIDI messages on the channels you're using to transmit. (Most instruments should receive messages on all channels, so you won't have to set anything new. Check your instrument's manual if you're not sure.)
2. Check the **Options** menu to make sure that MIDI is turned on and all the computer's internal voices are turned off.
3. Click the **Play** button. You hear "Frere Jacques" play. The Guitar notes now play using preset 1 on your synthesizer, the Clarinet part uses preset 2, the Violin part uses preset 3, and the Piano part uses preset 4.

Saving MIDI Settings

Once you've chosen the MIDI settings and playback options that you like, you can save them to disk by choosing **Save Config** from the **File** menu. **Save Config** saves the current MIDI settings, instrument settings, playback options, and other settings to disk so that the next time you open *The Music Studio 3.0* the settings are still in effect.

Recording a MIDI Performance

To record a MIDI performance as a song, you first decide on a tempo and then use the **MIDI Record** command:

1. Choose **New** from the **File** menu to clear the work area if there's music already there.
2. Set the tempo slider to the tempo you want to use for the beat in your performance.
3. Choose **MIDI Record** from the **Options** menu to open the MIDI Record dialog box.



4. Point to the box to the right of **Metronome** and click the mouse button, then select **Start Record**. You'll hear clicks from the computer's speaker at the tempo you set with the tempo control.
5. To start recording, play the music you want, following the beat of the metronome.
6. Press the space bar to end recording.

7. Choose **OK** to close the dialog box and look at the song you just recorded. (The **Cancel** button closes the dialog box and forgets the performance you recorded.)
8. Click the **Play** button to hear your performance replayed.

You'll probably find a lot of sixteenth notes and other small note values in the song you just recorded. That's because human performances rarely, if ever, fall directly on the metronome beat, and a direct transcription of the performance yields small note values instead of easily readable longer notes that fall directly on the beat. Select the **Quantize** feature in the MIDI Record Dialog box before you begin to record, or use the **Set Edit Filters** and **Filter** commands to clean up some of these small notes and uneven beats. These options are more thoroughly explained in the "MIDI Record," "Set Edit Filters" and "Filter" entries in the "Reference" section of this manual.

Note that whenever you record a MIDI performance, the **MIDI Record** command appends your new notes to the end of any music already in the work area. Each time you record, you add a new section to the music. If you record something you don't like, use the **Erase** button in the MIDI Record dialog box to erase the section you just recorded.

Reference Contents

This “Reference” section is organized by the way things appear on the screen: It illustrates and explains the work area and the playback tools that appear below the work area. It then goes on to list commands in the menus in the order in which they appear.

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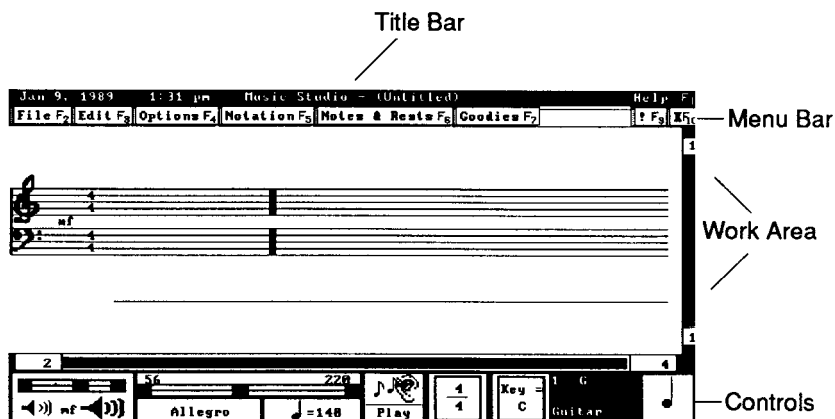
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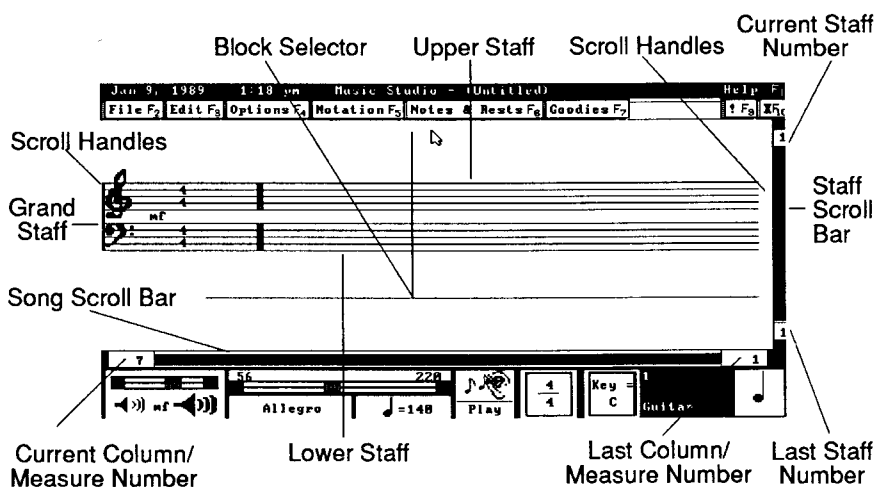
The Music Studio 3.0 Screen



The Music Studio 3.0 screen has four main parts:

- The title bar lists the date and time, the file name of the program (*The Music Studio 3.0*), and the file name of the current song.
- The menu bar contains menus with commands that load, save, edit, and perform other useful functions on the song in the work area.
- The work area displays the contents of a song, and is the place where you enter, delete, and manipulate notes and rests.
- The controls start song playback, and control the tempo and volume of playback (among other things).

The Work Area



Grand Staff

The grand staff is in the middle of the work area, and is made of the upper staff and the lower staff.

To place notes on the grand staff:

- Move the note pointer to the location you want and click the mouse button.

You can place up to 15 notes in a single column. A horizontal line below the grand staff shows the lower limit where you can enter notes. (For more information on adding notes and rests and setting their values, see the “Notes & Rests Menu” entry later in this “Reference” section.)

Note: The screen is limited in the number of notes it will display at one time. If you exceed this number, a dialog box appears saying the display is too complex to fit the screen, and the last few notes you entered won’t appear on the screen. These notes *aren’t* deleted; they just aren’t displayed on the screen at this time. If you want to see these notes, scroll the screen forward until you see the last few columns of notes you entered.

Scroll Handles

To move back and forth through a song:

- Point to the left end of the staff to move toward the beginning of a song.
- Point to the right end of the staff to move toward the end of a song.

Small arrows appear above and below the staff.

- Press the mouse button to begin scrolling.
- Release the mouse button to stop scrolling.

Song Scroll Bar

Use the song scroll bar at the bottom of the work area to quickly move back and forth through the song. The length of the song scroll bar from left to right represents the length of the song visible on the screen: Point to the position you want on the scroll bar and click the mouse button to quickly move to the song location you want.

You can also scroll through a song 16 columns (one screen) at a time by pressing the left and right arrow keys on the keyboard.

Song Slider

The song slider shows your current location in a song. Point to the left edge of the song slider, hold down the mouse button and drag the slider to a new location; the current column/measure number at the left end of the song scroll bar changes as you drag the slider to show you the column or measure number of the slider location.

Current Column/Measure Number

The current column/measure number shows the location of the note pointer as you move the pointer along the staff and the song slider location as you drag the slider. The current column/measure number usually shows location by column, but if you add measure bars to a song and turn on the **Number Measures** option in the **Options** menu, the number shows locations by measure. If there are no measures marked in your song, the current measure number will always be 1.

To jump to the beginning of a song, point to the current column/measure number and click the mouse button.

While you're playing back a song, the notes on the screen don't change to show the song as it's being played; you can tell your position in the song by looking at the current column/measure number. The current column/measure number changes to show the number of each column as it's played. If you press the space bar to stop playback, the current column/measure number changes to show the number of the far left column of notes displayed on the screen. Note that the current column/measure number only applies to the top staff displayed on the screen.

If you press the Esc key to stop playback, the notes on the screen *do* change to display the position of the song where you stopped it. The current column/measure number shows the column in the song where you stopped playback, which is now the first column on the far left of the screen.

Last Column/Measure Number

The last column number shows the number of the last column (or measure if the **Number Measure** option is turned on) in the song. Use it to see how long the song is. Use it also to jump to the end of the song: Point to the number and click the mouse button.

Staff Scroll Bar

Use the staff scroll bar at the right edge of the work area to scroll through the different staves (if you have more than one) in a song. The length of the scroll bar from top to bottom represents the order of staves from top to bottom. To quickly jump to the staff you want, point to the position you want on the scroll bar and click the mouse button.

Staff Slider

The staff slider shows you the current vertical position in a song. Use the pointer to drag the staff slider to a new position; the current staff number at the top of the staff scroll bar changes as you drag to show you the number of the current staff.

Current Staff Number

The current staff number shows the number of the staff the note pointer is

on as you move it through the work area. It also shows the staff slider location as you drag the slider. Use the current staff number to jump to the first staff: Point to the number and click the mouse button.

Last Staff Number

The last staff number shows the number of the last staff in the song. Use it to see how many staves there are in the song. Use it also to jump to the last staff: Point to the number and click the mouse button.

Block Selectors and Music Blocks

A single block selector marks a location in a song so you can indicate where you want editing actions such as **Paste** or **Merge** to start. Use two block selectors to define a music block; the section of the song you mark is highlighted. A music block defines a section of the song for editing actions such as **Cut**, **Copy**, or **Filter**.

To set a single block selector in a song:

- Point to the top or bottom edge of the work area just above or below the column where you want the block selector. A block selector (a vertical line) appears on the staff.
- Click the mouse button to leave the block selector in that location.

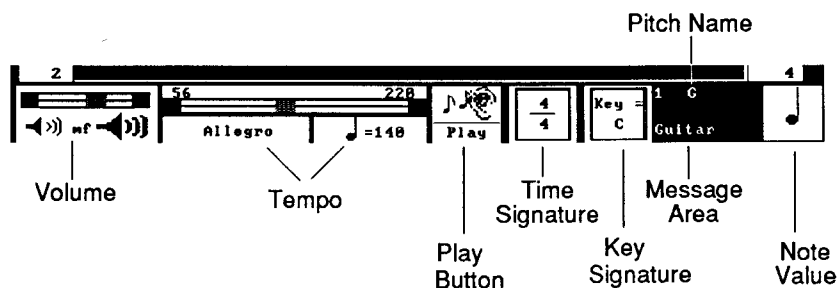
To remove a single block selector in a song:

- Point to the existing block selector and click the mouse button; the existing block selector will disappear.

To set a second block selector and create a music block:

- Move to the last column you want to include in the marked block. Again, point to the top or bottom edge of the work area. A second block selector appears on the staff.
- Click the mouse button to mark the end column. The music block stretches to cover all of the columns in between the block selectors.
- Remove a music block by setting another block selector: The block disappears, replaced by a single block selector.

Controls



Play Button

Click the **Play** button to play the entire song. Press the space bar to stop playback. You can also press Esc to stop playback. The screen changes to display the part of the song where you stopped the playback.

Message Area

The message area lists the name of the instrument you are using to enter notes in the work area. It also shows the current pitch name and lists the number (1 or 2) of the song you are working on. (See the “Switch Song” entry in another part of this “Reference” section.)

Key Signature

Click the mouse button on the key signature button to transpose, insert, or change a new key signature.

To transpose, change, or insert a key signature:

- Click the mouse button on the key signature button. The key signature dialog box appears.
- Select **Transpose** to move the notes of the music block (or the entire song) *up* to the scale of the new key (you can’t transpose *down* a key). If you don’t select **Transpose**, the key changes but the notes remain at the same pitch.

Note: If you do want to transpose down, you can do so by using the **Pitch Range Boxes** and the **Notes Filter** functions in the **Set Edit Filter** dialog box. See the “Set Edit Filter” entry in this “Reference” Section.

- Select **Insert** to insert a new key signature at the left edge of the staff. (You can't insert a key signature in column one.)
- Select **Change** to change the key signature of the entire score.
- Click the mouse button on **OK** to complete the key change or **Cancel** to leave the key as it was.

Time Signature

The time signature is made of two numbers. The upper number represents the number of beats per measure, the lower represents the duration of each beat. For example, 4/4 (the most common time signature) means each measure has four beats, and each beat is a quarter note. 6/8 means each measure has six beats, and each beat is an eighth note. The time signature you set determines how the **Auto-Insert Measures** command places measure bars in a song.

To change the time signature for a whole song:

- Point to the time signature button and click the mouse button. The time signature dialog box opens.
- Select the time signature you want, then select **OK** to change the time signature or **Cancel** to leave the time signature as it is.

Tempo

The tempo of a song is the speed at which it plays back. Tempo is measured in beats per minute (bpm), from a slow tempo of 56 bpm to a fast tempo of 220 bpm. You change tempo by setting the tempo slider in the tempo area. The bottom of the tempo area shows the current tempo setting and the Italian name for that tempo. (Italian names are traditional music markings for tempo.)

To set the tempo for an entire song:

- Point to the tempo slider, hold down the mouse button, and drag the slider to the tempo you want, then release the mouse button.

To insert a tempo change in a song:

- Scroll through the song until the section requiring a tempo change is at the very left edge of the staff.
- Click the Italian name in the tempo change area. A quarter note symbol and the new tempo appear at the left edge of the staff.
- Point to the tempo slider, hold down the mouse button and drag the tempo slider to set a new tempo, then release the mouse button. The tempo indicator changes to reflect your new tempo setting.

You can only make tempo changes to staff #1 (or the top staff). These changes will affect all the staves.

You can place several tempo settings in a song using these same steps. When you play back the song, the tempo changes at each spot where you made a tempo setting change. These tempo changes are saved with your song. To remove one, select the column it's in and use the **Cut** or **Clear** command on the **Edit** menu.

Volume

Drag the sliding control to set the volume of playback from soft (pp) to loud (ff). The two letters shown in the volume area (the dynamic markings) are the traditional music notation for volume. Note that only music played by the sound feature or an attached MIDI instrument responds to volume settings. All other internal voices ignore volume settings.

To set the volume for an entire song:

- Point to the volume control, hold down the mouse button, and drag the slider to the volume you want, then release the mouse button.

To insert a volume change in a song:

- Scroll through the song until the volume change location is at the very left edge of the staff.

- Click the dynamic marking in the volume change area. The marking appears in the song as a new volume indicator, inserted at the left edge of the staff.
- Drag the volume slider to set a new volume, then release. The dynamic marking in the song changes to reflect your new volume setting.

You can place many volume settings in a song using these same steps. When you play back the song, the volume changes at each spot where the volume setting changes. These volume changes are saved with your song. To remove them, select the column they're in and use the **Cut** command on the **Edit** menu.

Pitch Name

The single letter to the right of the key signature button gives the name of the pitch location of the note pointer. As you move the pointer up and down on the staff, the pitch name changes to show you the pitch of each place the pointer indicates.

Note Value

The symbol in this box shows you the value of the note you place on the staff with the note pointer.

To select a new note value:

- Point to the note symbol, hold down the mouse button, and drag the pointer up or down. The note symbol changes to different values. Release the button when you get the note value you want.
- To change the note value with the keyboard, press **ALT+F9** to decrease the value and **ALT+F10** to increase the value.

To place a note on the staff:

- Move the note pointer to the column and pitch you want, then click the mouse button.

To change the note value without returning to the note value box:

- Move the note pointer to the location on the staff you want, then hold down the mouse button and drag the pointer up or down. The note value changes; release the mouse button when you get the value you want.

To erase a note on the staff:

- Move the note pointer over the note, and click the mouse button.

(See the “Notes & Rests Menu” entry later in this “Reference” section for another way to change the note values and to learn how to insert and manipulate rests.)

Menus

The menu bar lists six menus that contain commands and options for *The Music Studio 3.0*. The seventh menu (F10) contains DeskMate accessories you can open if you run the full version of DeskMate. The sections that follow list and explain the commands and options in each of *The Music Studio 3.0*’s six menus.

File Menu

Open the **File** menu by pressing **F2** or by pointing to the word **File** on the menu bar, pressing the mouse button, and dragging down. The commands you find here save and open songs to and from disk, save *The Music Studio 3.0* settings, print your song, and quit *The Music Studio 3.0* to return to DeskMate.

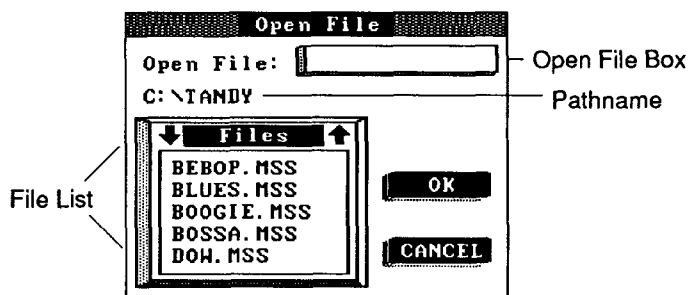
New

Choose **New** to clear all notes, rests, and markings from the work area to start a new song. If you choose **New** when you have notes or other marks in the work area that you haven’t saved, a dialog box asks you if you want to save the changes in the song. Choose **Yes** to save the current song before clearing the work area. Choose **No** to clear the current song from the work area without saving it. Choose **Cancel** to go back to the current song without clearing it from the work area.

Note: The song style (number of staves, instrument setup, note styles, key signature, etc.) doesn't change when you choose **New**. The song style of the new song is the same as the style you set for the old song. To change the style for your new song, select **Open Style** or change it using separate steps (see the "Open Style" entry later in this "Reference" section).

Open Song

Choose **Open Song** to load a song from disk. This dialog box appears:



Open File Box - shows the selected song file. Use it to type in a pathname to a new directory or to type in a filename directly.

Pathname - shows the pathname for the current file directory.

File List - shows the list of songs available in the current directory. (All songs end in the extension .MSS.)

OK - closes the dialog box and opens the selected song file.

Cancel - closes the dialog box without loading a new song.

To open a song file:

- Select the **Open Song** command from the **File** menu. The Open File dialog box opens and shows you the songs and sub-directories available in the current directory.
- Point to the name of the song you want to load and double-click the mouse button. Or, select the name of the song, then select **OK**.

The Load Song Files window closes and the song appears in the work area.

To change the current directory:

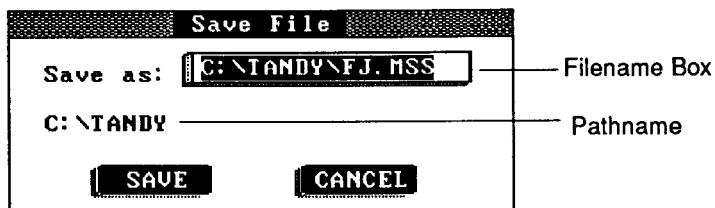
- Select the **Open Song** command from the **File** menu. The Open File dialog box opens.
- To move to a sub-directory, point to the name of the sub-directory you want to move to in the file list and double-click the mouse button. The file list changes to show the contents of the new directory.
- To move to a parent directory, place the cursor in the box to the right of **Open File**, enter two periods (..), and click **OK**. The file list changes to show the contents of the new directory.

Save Song

Choose **Save Song** to once again save a previously saved song to disk. When you choose **Save Song**, the song on the screen is saved to disk with the current song filename, and replaces the old version of the song on disk.

Save Song as

Choose **Save Song as** to give a song a new name and save it to disk under that name. When you choose **Save Song as**, the Save File dialog box appears.



Filename box - shows the current filename of the song (if it has one). Use this box to enter a new filename or a new pathname and filename for the song.

Pathname - shows the pathname for the current directory.

Save - saves the song by the name in the filename box.

Cancel - closes the dialog box without saving the song.

To name (or rename) and save a song:

- Choose **Save Song as** from the **File** menu. The Save File dialog box opens.
- If the song already has a filename, it appears highlighted in the filename box. Press the backspace key or start typing to remove the old filename.
- To save the song in the current directory, type in a filename of eight characters or less. Use standard DeskMate filename conventions. (*The Music Studio 3.0* automatically adds an **.MSS** extension to the name, so don't add an extension to the filename you enter here.)
- To save the song in another directory, type the full pathname for the directory in the filename box followed by the new filename.
- Select **OK** to close the dialog box and save the song under the new name.
- Select **Cancel** to close the dialog box without changing the name of the song or saving the song to disk.

Open Style

Choose **Open Style** to load a style from disk. The Open File dialog box appears; it is the same dialog box you use to open a song.

- Point to the name of the style you want to load and double-click the mouse button. Or, choose the name of the style then select **OK**.

Any style you open affects *The Music Studio 3.0*'s working environment. The description of the **Save Style as** command that follows describes the contents of a style.

Save Style as

Choose **Save Style as** to save a style to disk. The Save File dialog box appears, the same dialog box you use to save a song. Use it to save a style just as you used it to save a song. When you save a style to disk, *The Music Studio 3.0* saves all the current song settings that create the working

environment you're using at the moment. These settings include the song setup (including the number and types of staves you have set), instrument setup, note styles, filter settings, digitized sound settings, MIDI settings, key signature, tempo, time signature, and other settings.

Use **Save Style** as to capture a working environment that works well for you. For example, you might have one set of MIDI settings, staves, key and time signatures, and so on that works well for writing country waltzes. Save these settings under a file named COUNTRY so you can recall them at any time to start a new country waltz.

Save Config

Choose **Save Config** to save *The Music Studio 3.0*'s playback settings. These settings are the toggle options at the bottom of the **Options** menu that determine which speakers and sound devices play back your songs. When you quit *The Music Studio 3.0* and open it again later, the settings you saved previously with the **Save Config** command are all in effect as default settings.

Print

If you have a graphics printer connected to your computer, first choose **Setup** from the **F10** menu and make sure the printer is configured correctly. Then choose **Print** to print your song on paper.

To print a song:

- Make sure your printer is turned on, on-line, and loaded with paper before you print.
- Choose **Print** from the **File** menu. The song prints on paper.

Exit

Choose **Exit** to close *The Music Studio 3.0* and return to DeskMate. If you've made changes to your song, a dialog box appears asking if you want to save your changes. Select **Yes** to save your changes and quit. Select **No** to quit without saving your changes. Select **Cancel** to close the dialog box and return to *The Music Studio 3.0*. You can also quit *The Music Studio 3.0* by pressing the **Esc** key.

Run

Choose **Run** to close *The Music Studio 3.0* and run another DeskMate-compatible program without returning to DeskMate. The standard DeskMate Run dialog box appears where you can enter the program filename you want to run. *The Music Studio 3.0* will be re-entered after your other program is run. (See the DeskMate manual for more information on running other DeskMate programs.)

Edit Menu

Open the **Edit** menu by pressing F3 or by pointing to the word **Edit** on the menu bar, pressing the mouse button, and dragging down. The commands in this menu perform editing functions and switch between songs.

Cut

Choose **Cut** to remove a section of a song and place it in the clipboard. **Cut** removes any music selected by a music block and places the cut section into the clipboard. The newly cut section replaces any previous contents of the clipboard. Use **Paste** to retrieve the cut section of music.

Copy

Choose **Copy** to copy a section of music to the clipboard without removing the section from the song. **Copy** puts a copy of any music selected by a music block in the clipboard. The newly copied section replaces any of the clipboard's previous contents.

Paste

Choose **Paste** to insert the contents of the clipboard into a song. If you have a music block selected, **Paste** replaces the contents of the music block with the contents of the clipboard. If you have a single block selector in a song (instead of a full music block), **Paste** inserts the contents of the clipboard at the block selector's location without erasing any music. **Paste** won't work if you have no block selector set, no music block selected, or an empty clipboard.

Clear

Choose **Clear** to remove a section of a song without placing it in the clipboard. **Clear** removes any music selected by a music block.

Add Column

Choose **Add Column** to insert an empty column into a song. **Add Column** places an empty column at the location of a single block selector or at the beginning of a music block. Use **Add Column** to add empty space to your songs much as you use a space bar to add spaces to text in a word processing program. You can fill the empty columns with notes and rests, or leave them blank.

Add Column has a special feature that lets you enter many columns at once: If you select a music block and then choose **Add Column**, *The Music Studio 3.0* adds to the score as many new columns as you've selected.

Filter

Choose **Filter** to perform a filter edit on a music block. Before you choose **Filter**, use the **Set Edit Filters** command in the **Options** menu to set the filter options you want to use. These filter options include transposing notes, setting note stem directions, changing volume, changing note duration, and substituting instruments. (See the "Set Edit Filters" command in the "Options Menu" entry of this "Reference" section for more information.) Once you set filter options and select the block of music you want to filter, **Filter** performs the filter options on the selected music block.

Merge

Choose **Merge** to add the contents of the clipboard to the existing song that's currently displayed. **Merge** inserts the clipboard music starting at the location of a single block selector or at the left edge of a music block, and extends as far as necessary to fit the clipboard contents. Use **Merge** to add lines of music from other songs or other parts of a song to existing music.

Home Song

Choose **Home Song** to jump to the beginning of a song. **Home Song** performs the same function as pointing to the current column/measure number in the song scroll bar and clicking the mouse button.

Switch Song

The Music Studio 3.0 keeps two songs in memory at one time. Choose **Switch Song** to switch from the song you currently see on the screen to the second song in memory.

If you choose **Switch Song** when you have opened only one song from disk, the second song you see on the screen is displayed as an empty staff. To open a second song from disk, choose **Open** from the **File** menu. The song you open replaces the empty staff on the screen. Use **Switch Song** to switch between the two opened songs stored in memory.

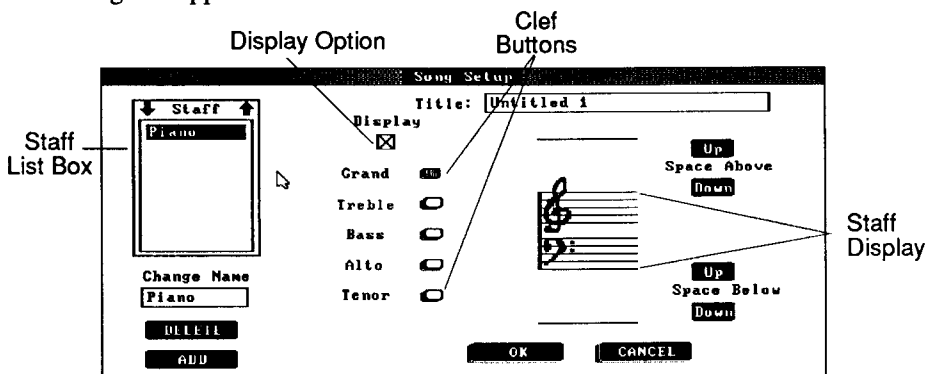
The **Switch Song** command makes it easy to cut and paste between the two songs in memory. You can use one song for “parts”—musical phrases and sections—and the other song as the master song. When you use any of the **File** commands such as **Save Song**, **Save Song as**, **Open Song**, or **New**, the commands affect only the song you currently have on the screen. The second song remains unaffected. You must use **Switch Song** to bring the other song to the screen before the **File** commands will work on the song. The song number you are working on (either 1 or 2) is displayed in the message window at the bottom of the screen.

Options Menu

Open the **Options** menu by pressing **F4** or by pointing to the word **Options** on the menu bar, holding down the mouse button, and dragging down. The first seven commands in the **Options** menu provide some of *The Music Studio 3.0*’s most advanced functions: creating and deleting staves, choosing and creating instruments, setting up MIDI parameters for using an external synthesizer, and other functions. The five toggle options that follow control the way your computer plays songs, and show locations in your songs by columns or measures.

Song Setup

Choose **Song Setup** to create, modify, or delete staves. The Song Setup dialog box appears:



Title Box - lists the name of the song you're setting up. Select this box by pointing to it and clicking the mouse button. Use the keyboard to enter the title you want to give your song.

Note: This title is different from the filename you give your song with **Save Song as**. It doesn't appear in the title bar of the work area screen; it only appears on your song when you print it out.

Staff List Box - lists the staves currently available in the song. Select a staff in the box by pointing to its name and clicking the mouse button. Any staff changes you make in the rest of the dialog box affect the staff selected in this box.

Change Name Box - lists the currently selected staff. Select this box by pointing to it and clicking the mouse button. Use the keyboard to change the name of the selected staff.

Delete - deletes the currently selected staff from the song.

Add - adds a new staff to the song. You can have up to eight staves in a song.

Display Option - displays the currently selected staff in the work area. When this option is turned on, you can see the staff in the work area (although you might have to scroll up or down to see it). When this option is turned off, the staff doesn't appear on the screen at all, and any notes on it are not heard; however, the staff and the notes on it still exist in memory.

Clef Buttons - choose the type of clef used on the currently selected staff.

Staff Display - shows the current staff and clef and the spacing above and below the staff.

Space Above Buttons - set the amount of space above the current staff. The **Up** button moves the space up, the **Down** button moves the space down, and the staff display shows the space as it changes. Use the **Space Above** buttons to control the separation of a staff from the staff immediately above it.

Space Below Buttons - set the amount of space below the current staff. The **Up** button moves the space up, the **Down** button moves the space down, and the staff display shows the space as it changes. Use the **Space Below** buttons to control the separation of a staff from the staff immediately below it.

OK - closes the dialog box and implements the new song setup.

Cancel - closes the dialog box without implementing the new song setup; however, staves added or deleted remain.

To add a new staff to a song:

- Choose **Song Setup** to open the Song Setup dialog box.
- Select the **Add** button. A new staff appears at the top of the staff list box.
- Select the Change Name box, delete **New Staff**, and type in the name you want.
- Choose the clef you want to use for the staff by pointing to the appropriate clef button and clicking the mouse button.
- Use the **Space Above** and **Space Below** buttons to adjust spacing.
- Click **OK** to close the box and see your new staff on the screen.

To delete a staff from a song:

- Choose **Song Setup** to open the Song Setup dialog box.
- Select the staff you want to delete from the staff list box.
- Click the **Delete** button. A dialog box reminds you that you irretrievably lose all the music in the staff when you delete it.
- Click **OK** to delete the staff. The staff name disappears from the staff list box.
- Click **OK** to close the dialog box and return to the work area.

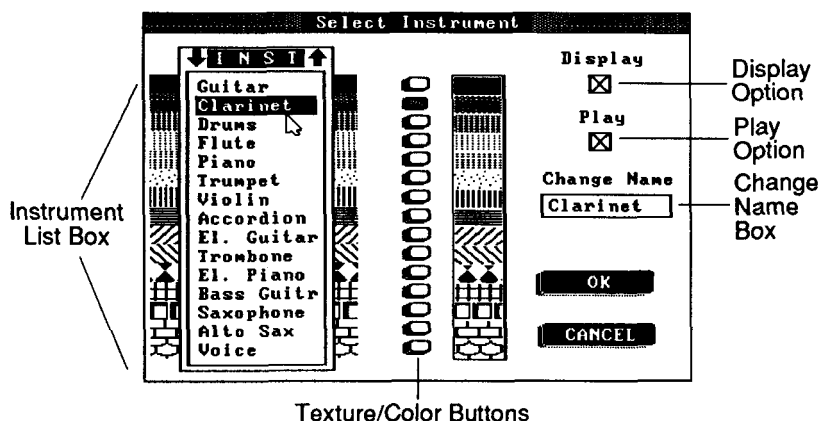
About clefs: Each clef determines the position of middle C on the staff:

- The grand staff puts middle C between two staves.
- The treble clef puts middle C just below a single staff.
- The bass clef puts middle C just above a single staff.
- The alto clef puts middle C on the middle line of a single staff.
- The tenor clef puts middle C on the fourth line up of a single staff.

Select Instrument

You can use different MIDI patches to play notes in a song that add contrasting voices to the song. Each patch has its own unique characteristics, much like acoustic instruments do, and appears visually in a song using notes of a texture or color unique to that instrument. *The Music Studio 3.0* allows you to use up to 15 different instruments in a song. Select one of these instruments with **Select Instrument** before you enter notes to make those notes play back using that instrument.

Choose **Select Instrument** to select the instrument and its texture or color to add notes to a song. The Select Instrument dialog box appears:



Instrument List Box - lists the instruments you can use to add notes to a song. Select an instrument in the box by pointing to it and clicking the mouse button. Any instrument changes you make in the rest of the box affect this instrument. Each instrument name in the box is accompanied by a note texture (or color, if you're using a color system). When you place the notes on the staff, they appear in the texture or color indicated in the Select Instrument box.

Texture/Color Buttons - choose the texture or color representing an instrument on the staff.

Display Option - displays the notes of an instrument in a song. If this option is on, all the selected instrument's notes appear on a staff. If this option is off, the instrument's notes disappear from the song. The notes still exist in memory, and when you turn **Display Option** on again, the notes reappear and can be heard when you play the song.

Play Option - plays the notes of an instrument in a song. If this option is on, all the selected instruments' notes play. If this option is off, the instruments' notes will not play when you play the song.

Change Name Box - lists the currently selected instrument. Select this box and use the keyboard to change the name of the instrument.

OK - closes the dialog box and implements the new instrument selection.

Cancel - closes the dialog box without implementing the new instrument selection.

To select a new instrument:

- Choose **Select Instrument** to open the Select Instrument dialog box.
- Select the instrument you want to use in the Select Instrument box by pointing to it and clicking the mouse button.
- If you don't like the texture or color the instrument uses, point to the texture or color button of the texture or color you prefer and click the mouse button. The note in the Select Instrument box changes to correspond to the new texture or color.
- Choose **OK** to close the dialog box.
- Add new notes to your song. They appear in the texture or color of the new instrument. When you play back the song, the notes play back using the instrument you chose.
- You can also use the speed keys to change instruments without going into the Select Instrument dialog box. Number keys 1 through 9 match instruments 1 through 9. Letter keys A, B, C, D, E, and F match instruments 10-15.

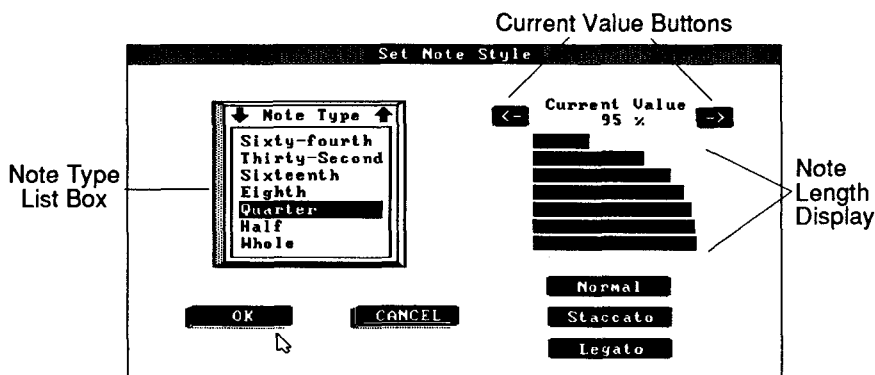
Set Note Style

A note doesn't usually sound continuously from its beginning to the beginning of the note that follows; it usually stops just before the next note starts, which puts some aural "space" between notes. This space separates the notes so you can hear them more clearly. The amount of aural space between notes determines the style of the notes.

Choose **Set Note Style** to control the amount of aural space between notes when they play.

Note: Note styles only affect notes played through the sound feature of a MIDI instrument and only affect notes entered after you've made changes to the original note style.

The Set Note Style dialog box appears:



Note Type List Box - lists the different types of notes in a song. Select a note type in the box by pointing to it and clicking the mouse button. Any note style changes you make in the rest of the box affect this note type.

Current Value Buttons - change the note playback length of the current note type. The left arrow decreases the playback length, the right arrow increases it, and the percentage value between them shows the percentage of the note's "normal" duration that actually sounds.

Note Length Display - shows in graphic form the playback length of each note type. The left side of the display represents 0%, the right side represents 100%.

Normal Button - sets the playback length of the selected note to allow a small space between each note.

Staccato Button - sets the playback length of the selected note so each note sounds very short.

Legato Button - sets the playback length of the selected note to 100%.

OK - closes the dialog box and implements the new note styles.

Cancel - closes the dialog box without implementing the new note styles.

To change a note style:

- Choose **Set Note Style** to open the Set Note Style dialog box.
- Select a type of note from the note type list box by pointing to it and clicking the mouse button. The percentage between the **Current Value** buttons changes to show the playback length of the note type.
- Use the left or right **Current Value** buttons to shorten or lengthen the playback length of the note type to a precise value, or use the **Staccato** or **Legato** buttons to shorten or lengthen the playback length to preset values.
- Choose **OK** to close the dialog box.

Note that the style you set for a note type affects only newly entered notes.

Set Edit Filters

Choose **Set Edit Filters** to set the filters that work on a block of music. Once you set the filters, you must choose **Filter** from the **Edit** menu to make them work on the block of music you select. **Set Edit Filters** opens the Set Filters dialog box:

Set Edit Filters			
Item	Range	Action	Amount
Notes	C8 -C8	No Change	-----
Note Stems	C8 -C8	Up	-----
Volume	C8 -C8	No Change	x 100
Duration	C8 -C8	Quantize	1/32
Instrument	Guitar	Change To	Clarinet

CANCEL
OK

Item - lists the names of the filters you set in this dialog box. Each line of the dialog box is a different filter that includes a range, action, and amount.

Range Boxes - set an instrument or a range of notes by pitch. The filter affects only notes or falling within that pitch range.

Action Boxes - set the type of action a filter takes when it encounters the notes or the instrument that fall within the range set in its range box.

Amount Boxes - set the degree of action the filter takes when it performs an action on notes or an instrument.

OK - closes the dialog box and implements the new filter settings.

Cancel - closes the dialog box without implementing the new filter settings.

To set a pitch range:

Select the appropriate range box and use the keyboard to enter a new range: enter a low pitch name and octave number followed by a dash and a high pitch name and octave number. You must enter three characters for each complete pitch specification.

- Enter each pitch name as a capital letter followed by a lower case *b* for flat pitches, a pound sign (#) for sharp pitches, or a space for natural pitches.
- Include a number from 0 to 8 at the end of each pitch to specify the octave of the pitch. C3 is middle C; octave 0 is three octaves below, octave 8 is five octaves above. Each octave begins at C natural. For example, the range D#2- Ab4 extends from the D sharp below middle C to the second A flat above middle C.

Note that the Instrument Range box doesn't select a pitch range, but a single instrument. Select the instrument in this range box the same way you make choices in the Action and Amount boxes (described below).

To choose actions and amounts in the Action and Amount boxes:

- Point to the Action box and click the mouse button repeatedly. Each time you click, the box changes to a new setting; repeated clicking cycles through all the settings. Leave the box when you have the setting you want.

Note that the Volume Amount box shows a percentage. To change the value there, select the box and use the keyboard. The percentage value must be a number from 0 to 100.

Notes Filter

The notes filter looks for any notes in a selected music block that fall within the pitch range, and then performs one of four actions on those notes:

Up - transposes the notes up in pitch by the amount in the amount box.

Down - transposes the notes down in pitch by the amount in the amount box.

Delete - deletes all the notes from the music block

No Change - leaves all the notes as they are

The amount of transposition can be 1/2, 1, 2, 3, 4, or 5 steps, or a full octave.

Note Stems Filter

The note stems filter looks for any notes in a selected music block that fall within the pitch range, and then performs one of three actions on those notes:

Up - sets all the note stems up from the note head.

Down - sets all the note stems down from the note head.

No Change - leaves all notes stems as they are.

Volume Filter

The volume filter looks for any notes in a selected music block that fall within the pitch range, and then performs one of four actions on those notes:

Up - increases the notes' volumes by the amount set in the percentage box

Down - decreases the notes' volumes by the amount set in the percentage box

Change To - changes the notes' volumes to the exact amount set in the percentage box

No Change - leaves the volumes of all the notes as they are

Note that each note volume is measured as a value from 0% to 100%. When you increase or decrease a volume by the amount in the percentage box, you add the amount in the percentage box to the notes' existing volume. For example, increasing a 50% volume by 10% yields a 60% volume.

Duration Filter

The duration filter looks for any notes in a selected music block that fall within the set range, and then performs one of two actions on those notes:

Quantize - changes the note durations to the duration set in the amount box

No Change - leaves all the notes as they are

Use the duration filter to clean up sloppy sounding performances recorded with the **MIDI Record** command. When you quantize music, the filter changes note duration.

The value you set in the amount box (any note value from 1/64 to 1/2) sets the beat size: If you choose a very small beat—such as 1/64—quantizing only moves notes in very small increments so they fall on sixty-fourth note beats. If you choose a large beat—such as 1/4 or 1/2—quantizing moves notes in large increments and destroys any complex rhythms that take place in less than a quarter note's duration. Choose the value that sounds best.

Note: It's recommended that you save a copy of the song before you use the **Quantize** feature.

Instrument Filter

The instrument filter looks for any notes in a selected music block that play using the instrument selected in the range box, and then performs one of three actions on those notes:

Change To - changes all the notes to play with the instrument set in the amount box.

Delete - deletes all instrument's notes in the music block

No Change - leaves all the notes as they are

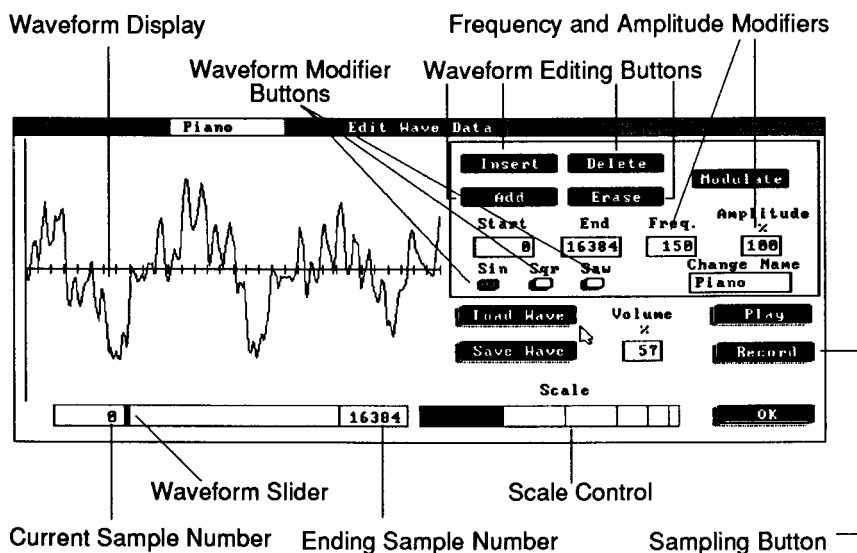
Use the instrument filter to change instruments on notes already in a song, or to get rid of one instrument part entirely.

Design Sound

Choose **Design Sound** to create your own instruments on the Tandy sound feature.

Note: This feature is only available the Tandy 1000SL or TL if you're using a mouse.

You must select **Digitized Sound On** in order to choose **Design Sound**. The Edit Wave Data dialog box appears:



Waveform Display - displays the contents of the currently loaded waveform table

Waveform Slider - changes the view of the waveform display to show different sections of the current waveform

Current Sample Number - displays the number of the sample currently on view at the left edge of the waveform display

Ending Sample Number - displays the number of the sample at the end of the waveform table

Waveform Editing Buttons - perform modifications on the currently selected sample block of the waveform table

Sampling Button - records sampled sounds

Play Button- plays back sampled sounds

Scale Control - changes the scale of the waveform display to show the entire waveform table at once or to zoom in on one section of the waveform table

Start and End Boxes - set the beginning and end of the sample block, a section of the waveform table selected for modification using the Waveform Editing buttons

Freq. and Amplit. Boxes - set the frequency and amplitude of a modifying waveform used to change the waveform table with the Waveform Editing buttons

Waveform Modifier Buttons - choose the shape of the modifying waveform

OK - closes the dialog box and implements the waveform table changes

Load Wave - loads a previously saved digitized sound

Save Wave - saves to disk the current digitized and edited sound

Volume - changes playback volume of sample sound. 0 is no volume, 100 is maximum volume.

Change Name - lists the currently selected sound. Select this box and use the key board to change the name of the sound.

Sampled Instrument Fundamentals

Instruments played on the Tandy sound feature are *sampled sounds*—each instrument is a digital recording of a sound captured through a microphone and stored in the computer's memory or on disk as a series of numbers describing the sound. This conversion process of sound to stored numbers is called *sampling*, and the series of numbers it creates is called a *waveform table*.

When you sample a sound using the **Record** button in the Edit Wave Data dialog box, *The Music Studio 3.0* normally reads the input from the microphone 11,000 times a second. This is called the *sampling rate*. The numbers it creates when it reads the signals are called *samples*.

The waveform table display in the Edit Wave Data dialog box shows in graphical form the waveform table of any instrument you load or record. The table displays the waveform numbers from left to right, in the order they were recorded; therefore the left edge of the waveform table is the beginning of the sampled sound, the right edge is the end. There are a maximum of 64,000 samples in a sampled sound instrument, and they're numbered 0 to 64,000, from left to right, in the waveform table.

Note: If you record a standard sound from an instrument, record middle A (A above middle C). *The Music Studio 3.0* will adjust the frequency value for other notes appropriately.

The Music Studio 3.0 offers waveform editing features. You can modify the existing samples by using standard waveforms to modify the sample waveform. This process is called *modulation*.

A full explanation of sampled sounds and sampled sound editing is beyond the scope of this manual. For further explanation of sampled sounds, a good place to start is *Music Through MIDI* by Michael Boom (Microsoft Press, 1987).

To open a sampled sound instrument:

- Choose the **Load Wave** button to load a new waveform. A standard file input dialog box appears. Choose a file containing the desired waveform.

To save a sampled sound instrument:

- When the the waveform is the way you want it, click the **Save Wave** button. A dialog box appears; enter the appropriate information.

To view the waveform using the scale control:

- Point to the far-right segment of the scale control and click the mouse button to see the whole waveform at once in the waveform display.
- Point to any of the left segments of the scale control and click the mouse button to zoom in and see a magnified section of the waveform. The further left you click, the smaller the section you see in the waveform display.

To change the section on view in the waveform display:

- Point to any section of the waveform slider (between the beginning and ending sample numbers) and click the mouse button. The display jumps to that section of the waveform. Or, point to the waveform slider, hold down the mouse button, and drag the slider to a new position. As you drag the slider, the current sample number changes to show your location at the left edge of the waveform display.
- Point to the current sample number and click the mouse button. Delete that number and enter a new sample number.

To select a sample block for editing:

- Enter the beginning sample number of the block in the **Start** box.
- Enter the ending sample number of the block in the **End** box.

To use the editing buttons on a sample block:

- Choose the **Delete Block** button to delete the block from the waveform table.
- Click the **Erase Block** button to set all the samples in the block to 0. (This leaves a flat line at that spot in the waveform.)
- Click the **Insert Block** button to insert a block of flat line (this indicates silence and equals 0 amplitude) into the waveform using scale at the location marked in the **Start** box.

- Click the **Add Block** button to add the samples of the selected waveform to the samples in the sample block.
- Click the **Modulate Block** button to multiply the modulation waveform against the sampled wave. This is amplitude modulation.

To set a modifying waveform:

- Click one of the three waveform buttons to set a shape: the **Sin** button creates a sine wave, the **Sqr** button creates a square wave, and the **Saw** button creates a sawtooth wave.
- Set the waveform frequency by typing a value in the **Freq.** box. (The frequency is measured in cycles per second.)
- Set the waveform percent amplitude by typing a value from 0 to 100 in the **Amplit.** box. (0 is no amplitude, 100 is maximum amplitude.)

To record a sampled sound:

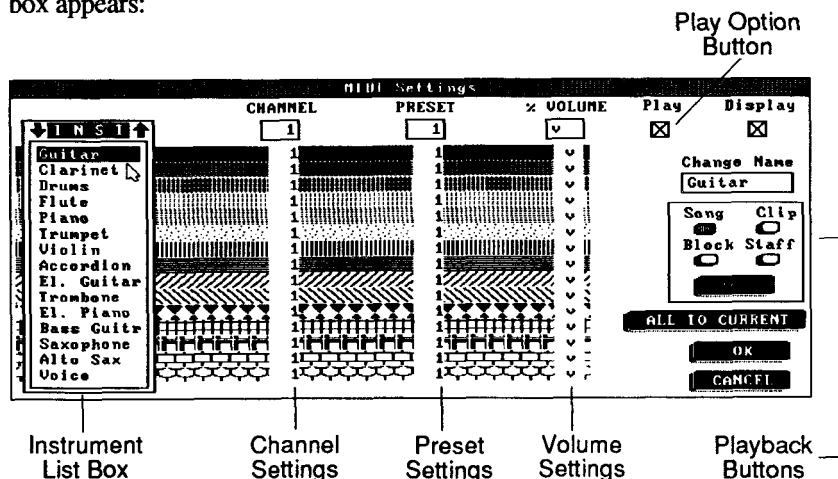
- Make sure the microphone (or other sound source) is connected to the Tandy sound feature as described in the Tandy manual.
- Click the **Record** button to start sampling. When the waveform display is filled, the sampled sound is finished recording. You can look at the waveform display or listen to the sound by playing it back. If you don't like the sound, repeat the recording procedure to replace the waveform with a new one.

Playing back a sampled sound:

- Set the playback volume by entering a number from 0 to 100 in the **Output Volume** box. (0 is silent, 100 is maximum volume.)
- Click the **Play** button to play back the sound.

MIDI Settings

Choose **MIDI Settings** to set up *The Music Studio 3.0* to play back songs over one or more attached MIDI instruments. MIDI instruments must be attached using either a Roland MPU-401 (or a compatible) MIDI interface, Voyetra™ OP-4001, or the Mellotron MUART. The MIDI Settings dialog box appears:



Instrument List Box - lists the instruments you can use to enter notes in a song

Channel Box - sets the MIDI channel over which the notes of the selected instrument play

Preset Box - sets the preset on the attached MIDI instrument that plays the notes of the selected instrument

Volume Box - sets the volume the attached MIDI instrument uses to play back the notes of the selected instrument

Channel Settings - display the channel setting for each instrument

Preset Settings - display the preset setting for each instrument

Volume Settings - display the volume setting for each instrument

Display Option - displays the notes of an instrument in a song. If this option is on, all the selected instrument's notes appear on a staff. If this option is off, the instrument's notes disappear from the song. The notes still exist in memory, and when you turn **Display Option** on again, the notes reappear and can be heard when you play the song.

Play Option Button - turn MIDI playback on and off for the selected instrument

Change Name Box - changes the name of any instrument you select

Playback Buttons - allow you to play back the entire song, the contents of the clipboard, the currently selected music block, or the currently selected staff without leaving this dialog box

All To Current Button - sets the MIDI settings of every instrument in the list to the settings of the currently selected instrument

OK - closes the dialog box and implements the new MIDI settings

Cancel - closes the dialog box without implementing the new MIDI settings

MIDI Fundamentals

The Music Studio 3.0 plays songs on attached MIDI instruments by sending MIDI messages through the MIDI interface card and over the MIDI cables to the receiving MIDI instrument. If you have several MIDI instruments attached to your computer (or a synthesizer that splits into several different instruments), you may be able to set each instrument to receive MIDI messages on a different MIDI channel (numbered from 1 to 16). By sending messages on one channel, you send them only to the instruments that receive that channel.

If a *preset number* message precedes the MIDI messages that play notes, the preset number asks the MIDI instrument to select a preset (the same as a patch, instrument, or voice—terminology differs from instrument to instrument) before it plays. The preset controls the sound of the instrument. For example, if *The Music Studio 3.0* asks for preset number 12 before it plays notes over MIDI, the receiving instrument turns on its number 12 preset, which may be something like Electric Kazoo (or another sound). The instrument then plays the notes it receives sounding like an electric kazoo.

MIDI messages also control the volume of the notes they play by assigning them a loudness from 0 (silent) to 127 (full volume). *The Music Studio 3.0* usually assigns MIDI volumes to the notes it plays by following the volumes you set while creating the song. You can override those volumes, however, if you set a new volume setting in the MIDI Settings dialog box.

A full discussion of MIDI is beyond the scope of this manual; for further reading, start with *Music Through MIDI* by Michael Boom (Microsoft Press, 1987). You should also take time to read through the manual that came with your MIDI instrument to learn its particular MIDI quirks and capabilities.

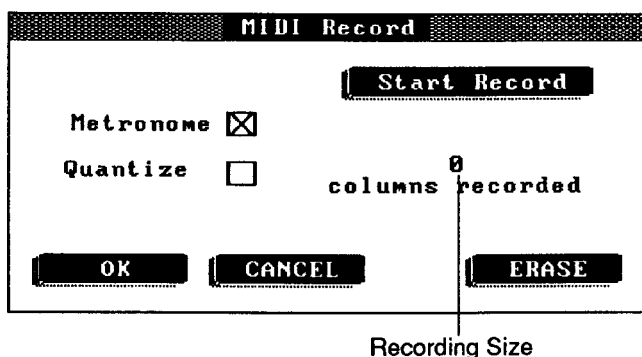
To assign an instrument from *The Music Studio 3.0* to play on a MIDI instrument:

- Choose **MIDI Settings** from the **Options** menu to open the MIDI Settings dialog box.
- Select an instrument from the instrument list box by pointing to it and clicking the mouse button.
- Select the **Channel** box and enter the channel number (1 to 16) of the MIDI instrument you want to play. (1 is the standard channel used by most MIDI instruments.)
- Select the **Preset** box and enter the number of the preset you want to play.
- If you want to override the volumes you entered in the song, type a volume value of 0 or 2 (very low) to 100 (full blast) percent in the **Volume** box. Note that this volume plays steadily for the instrument throughout the song, overriding any volume changes you may have entered. If you enter **S**, the song's own volumes play over MIDI without interference. If you enter **V**, the volume slider will override the song's own volume. Note also that if you record a song using **MIDI Record**, any volume setting here will not override the volumes you recorded.
- Click **Play Option** if you want to affect whether or not the instrument sounds.
- If you want to change the name of the instrument, select the **Change Name** box and enter a new name.

- Select any other instruments you want to play via MIDI and change their settings to your satisfaction.
- Test your MIDI settings by clicking the **Play** button. The entire song plays back. To play back the contents of the clipboard, the currently selected music block, or the currently selected staff, first click the **Clip**, **Block**, or **Staff** button, then click **Play**.
- Click **OK** to close the box and return to the work area; the new MIDI settings will be in effect.

MIDI Record

Choose **MIDI Record** to record your performance on an attached MIDI instrument as a song. The MIDI Record dialog box appears:



Metronome - turns a clicking metronome on and off. The metronome plays at the tempo set by the tempo slider in the work area.

Start Record - starts and stops the MIDI recording.

Quantize - when checked, aligns or “rounds off” your actual MIDI input to the nearest thirty-second note.

Recording Size - tells, in columns, how large the recording is.

Erase - erases the last song section you recorded with the **Start Record** button.

OK - closes the dialog box and shows you the song you recorded in the work area.

Cancel - closes the dialog box without putting your recording in the work area. All recording you made while the dialog box was open is erased.

MIDI Recording Fundamentals

When you use **MIDI Record**, you store incoming MIDI messages on any MIDI channel coming from an attached MIDI instrument, including Note-on, Note-off, Frequency, Preset, and velocity. These messages carry information about note pitches and durations. If your MIDI instrument has a velocity-sensitive keyboard (or any other mechanism that creates notes of different volumes), **MIDI Record** also stores MIDI messages that carry information about note volumes, which may change from note to note while you play.

When you first open the MIDI Record dialog box, nothing is recorded. The first time you use the **Start Record** button to record a performance, the notes you play are stored in memory. Each time you use **Start Record** afterward to record more music, the notes you record are appended to the previous recordings stored in memory. Use this feature to record songs in segments so you don't have to perform the whole song in one take. If you record a segment you don't like, use the **Erase** button—it erases the last segment you recorded without erasing the whole recording.

When you click **OK** to close the dialog box and return to the work area, **MIDI Record** appends any music you recorded to the end of the song currently on the screen. To turn the recording into notes, **MIDI Record** uses the metronome beat as a measuring device to tell how far apart the notes are. Each metronome beat represents a quarter note as a full beat. If you're using just the metronome, you'll find that this translation is often too exact; less-than-precise playing on your part creates many thirty-second notes and other small notes. To clean this up, use the **Quantize** feature in the MIDI Record dialog box.

To make a MIDI recording:

- Make sure your MIDI instrument is attached via MIDI cables and a MIDI adaptor card, and the instrument is turned on.
- Set the tempo slider in the work area to the tempo of the beat you want to use when recording your song.
- Choose **MIDI Record** from the **Options** menu to open the MIDI Record dialog box.

- Turn the **Metronome** on or off, as you prefer.
- Turn **Quantize** on or off, as you prefer.
- Select **Start Record** to start recording, then play the music you want recorded.
- Press the space bar to stop recording when you've finished playing.
- Use **Start** and **Stop Record** to record additional segments of the song if you wish.
- If you make a mistake while playing a song segment, click the mouse button on **Erase** as soon as you stop recording. The segment just recorded disappears from memory and you can record it over again.
- Choose **OK** to close the dialog box and return to the work area; there you can look at and edit your recording.

Toggle Options

The five toggle options at the bottom of the **Options** menu turn on and off when you select them. The first time you select a toggle option, you turn it on and a check mark appears before it in the menu to show it's selected. The second time you select the option, you turn it off and the check mark disappears.

The first two options, **Number Measures** and **Note Sound Off**, are independent of the other options.

The last three toggle options control the sound used to play back songs. The three types of playback are:

Internal Sound Off - a single voice is built into almost all computers. This is the simplest form of playback—it doesn't respond to instrument or volume changes. There are three voices built into the Tandy 1000 series of computers. The voices are similar to the internal speaker, but since there are three of them, they can play three different parts in a song.

Note: With the Tandy voices, you can't hear below A1 or above G#7, though the note may be displayed on the screen. With the internal speaker, you can't hear below C0 or above B6.

Digitized Sound Off (or sound card) - up to three voices from sampled sound are built into the Tandy 1000 L series of computers and can be loaded into **Select Instrument** as the first three instruments. (See the “Design Sound” entry earlier in this “Reference” section for instructions on how to load these voices.) This form of playback responds to volume and uses the distinctive sound of the instruments you load with **Design Sound**. You can’t hear below E1 or above A5, though the notes may be displayed on the screen.

Note: This feature is only available on the Tandy 1000SL or TL if you’re using a mouse.

MIDI Off - as many and as varied voices as you have available in your attached MIDI instruments. With the right equipment, MIDI can play back the full 15 notes at a time.

If the **Digitized Sound** feature is selected, the other output options are turned off. The **MIDI** and **Internal Sound** features can be on simultaneously.

Number Measures

Choose **Number Measures** to turn on and off the Number Measures option. When it’s on, the current column/measure number on the left edge of the song scroll bar changes to show the song location as a measure number instead of a column number, and the last column/measure number on the right edge of the scroll bar changes to show the length of the song in measures instead of columns. When this option is off, both numbers show columns instead of measures.

Note: If **Number Measures** is on when **New** is selected, the current and last column/measure numbers display 1 until **Auto-Insert Measures** is selected.

Note Sound Off

Choose **Note Sound Off** to turn off and on the sound that plays as you move the note cursor around a staff in the work area. When the Note Sound is on, you hear the pitch of the note cursor’s location on a staff as you move the cursor up and down. When it’s off, no sound plays as you move the note cursor.

Internal Sound Off

Choose **Internal Sound Off** to turn off and on the playback of the single-voiced internal sound, or the three voice Tandy sound if you have that feature.

Digitized Sound Off

Choose **Digitized Sound Off** to turn off and on the playback of the digitized sound feature and the sound feature plug-in card (if you have one).

Note: This feature is only available on the Tandy 1000SL or TL if you're using a mouse.

MIDI Off

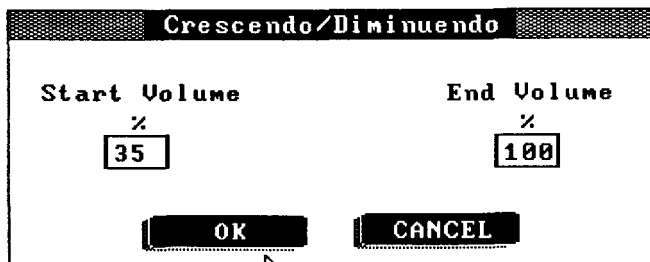
Choose **MIDI Off** to turn off and on the playback of any attached MIDI instruments.

Notation Menu

Open the **Notation** menu by pressing **F5** or by pointing to the word **Notation** on the menu bar, holding down the mouse button, and dragging down. The commands in this menu work on a music block to add volume increases and decreases, repeats, measure bars, beamed note flags, ties, and slurs.

Crescendo/Diminuendo

Choose **Crescendo/Diminuendo** to gradually raise (crescendo) or lower (diminuendo) the volume over the length of a music block. It opens the Crescendo/Diminuendo dialog box:



Note: If you have the **Internal Sound** option only and not the **Digitized Sound** or **MIDI**, you won't be able to hear a crescendo/diminuendo on playback.

Start Volume Box - sets the starting volume of the volume change as a value from 1% (silence) to 100% (full volume)

End Volume Box - sets the ending volume of the volume change as a value from 1% to 100%

OK - closes the dialog box and implements the crescendo or diminuendo you set over the marked block of notes

Cancel - closes the dialog box without implementing any crescendo or diminuendo

To add a crescendo or diminuendo to a section of music:

- Select the section of music as a music block (you can select up to 16 columns).
- Choose **Crescendo/Diminuendo** to open the Crescendo/Diminuendo dialog box.
- Enter the volume value you want to start from in the **Start Volume** box.
- Enter the volume value you want to end with in the **End Volume** box. For a crescendo, the end volume should be larger than the start volume. For a diminuendo, the end volume should be smaller than the start volume.
- Click **OK** to close the dialog box and insert the crescendo or diminuendo. A crescendo or diminuendo mark appears within the section of music.

Add Repeat

Choose **Add Repeat** to repeat a music block during playback. When you select a music block and choose **Add Repeat**, it opens the Set Repeat Count dialog box. Enter the number of times you want the block to repeat in the text box, then click **OK** to close the box. Repeat signs appear at the beginning and end of the music block. The first repeat sign shows how many times the block repeats during playback. If you don't mark a block, the entire song will be treated as a marked block.

To delete a repeat, mark a block containing exactly the repeat you wish to remove. Choose **Add Repeat** and set the Repeat Count to 1. Click **OK** to remove the repeat.

Auto-Insert Measures

Choose **Auto-Insert Measures** to add measure bars throughout a score. This command reads the current time signature to see what note value is a beat and how many beats there are per measure. It inserts bar lines at the appropriate locations throughout the rest of the song. If there are measure bars already in place in the song, **Auto-Insert Measures** removes and replaces them if they aren't in the correct location for the time signature.

Insert Measure Bar

Choose **Insert Measure Bar** to insert a single measure bar line at the location of a single block marker or at the left edge of a music block.

Beam

Choose **Beam** to beam together the note flags of notes within a music block. If you choose **Beam** for a music block that already contains beamed notes, it removes all beams from the note flags.

Note: You can beam only one note per column, regardless of what staff the note is in.

Tie

Choose **Tie** to tie together notes within a music block. Only consecutive notes of the same pitch tie together. Notes tied together sound as one long note (the combined value of the tied notes) during playback. If you choose **Tie** for a music block that already contains tied notes, it removes all ties.

Slur

Choose **Slur** to slur together notes within a music block. Unlike **Tie**, **Slur** groups consecutive notes together that aren't of the same pitch. If you choose **Slur** for a music block that already contains slurred notes, it removes all slurs.

Notes & Rests Menu

Open the **Notes & Rests** menu by pressing **F6** or by pointing to the words **Notes & Rests** on the menu bar, pressing the mouse button, and dragging down. The commands in this menu control the types of notes and rests you enter in the work area with the note pointer. (See the "Grand Staff" section earlier in this "Reference" section.)

NOTE —> Rest (Note <— REST)

Choose **NOTE —> Rest** to insert rests in a song. The symbol in the note value box of the work area turns into a rest, and the note pointer turns into a rest pointer. Any time you point and click the mouse button on a staff in the work area, a rest appears. As long as the rest symbol is in the note value box, this command reads **Note <—REST** in the menu.

Choose **Note <— REST** to change the rest pointer back to a note pointer so you can insert notes.

Note: If you're using the acceleration key, use the lower case **x** to perform the same function.

Flip Note

Choose **Flip Note** to change the direction of the note stem before you place a note. The note in the note value box changes to point either up or down. You can also press the space bar to perform the same function. If you're placing notes for two instruments on the same staff, flipping the notes for one of the instruments makes that line of music easier to read.

Triplet

Choose **Triplet** to change the notes and rests you insert into triplet notes and rests. The note or rest in the note value box changes to show a small three (the triplet sign) beside it, and all notes and rests you insert also show the triplet sign. A triplet note lasts two-thirds the length of a non-triplet note. Three triplet notes last as long as two regular notes of the same value, hence the name triplets. For example, three triplet quarter notes last as long as two regular quarter notes.

Notes and rests can't be triplet and dotted at the same time.

Dotted

Choose **Dotted** to change the notes and rests you insert into dotted notes and rests. The note or rest in the note value box changes to show a dot beside it, and all notes and rests you insert also show the dot. A dotted note lasts one half again as long as a regular note of the same value.

Notes and rests can't be dotted and triplet at the same time.

Accent

Choose **Accent** to change the notes you insert into accented notes that play at full volume and stand out from notes of lesser volume surrounding them. The note in the note value box changes to show an accent mark by it, and all notes you insert also show the accent mark.

Notes can't be accented and staccato at the same time.

Note: This command is for notation purposes only. Actual note duration control is available in the **Options** menu under **Set Note Style**. See the "Set Note Style" entry in this "Reference" section.

Staccato

Choose **Staccato** to change the notes you insert into staccato notes that play in a very short note style. The note in the note value box changes to show a staccato mark by it, and all notes you insert also show the staccato mark.

Notes can't be staccato and accented at the same time.

Note: This command is for notation purposes only. Actual note duration control is available in the **Options** menu under **Set Note Style**. See the "Set Note Style" entry in this "Reference" section.

Use Key

Choose **Use Key** to turn the key signature note option on. (A check appears before this option in the menu while it's on.) While the key signature note option is on, any notes you enter in the staff are sharp, flat, or natural according to the key signature—no sharp, flat, or natural sign appears before the note. Choosing this option turns off the **Natural**, **Sharp**, or **Flat** options.

Natural

Choose **Natural** to turn the natural note option on. (A check appears before this option in the menu while it's on, and a natural sign appears before the note in the note value box.) While the natural note option is on, any notes you enter in the staff are natural regardless of the key signature—a natural sign appears before the note. Choosing this option turns off the **Use Key**, **Sharp**, or **Flat** options.

Sharp

Choose **Sharp** to turn the sharp note option on. (A check appears before this option in the menu while it's on, and a sharp sign appears before the note in the note value box.) While the sharp note option is on, any notes you enter in the staff are sharp regardless of the key signature—a sharp sign appears before the note. Choosing this option turns off the **Use Key**, **Natural**, or **Flat** options.

Flat

Choose **Flat** to turn the flat note option on. (A check appears before this option in the menu while it's on, and a flat sign appears before the note in the note value box.) While the flat note option is on, any notes you enter in the staff are flat regardless of the key signature—a flat sign appears before the note. Choosing this option turns off the **Use Key**, **Natural**, or **Sharp** options.

Goodies Menu

Open the **Goodies** menu by pressing **F7** or by pointing to the word **Goodies** on the menu bar, pressing the mouse button, and dragging down. The commands in this menu perform many of the same functions as the controls in the work area. This menu also offers a convenient place to see the keyboard accelerators for control functions.

Play Entire Song

Choose **Play Entire Song** to play the current song from beginning to end. This has the same effect as clicking the **Play** button in the work area. Press the space bar to stop playback before the end.

Play Current Staff

Choose **Play Current Staff** to play only the music in the staff currently selected in the work area without playing music in any of the other staves of the song. Press the space bar to stop playback before the end.

Play Marked Block

Choose **Play Marked Block** to play the contents of a music block without playing any of the rest of the song. Press the space bar to stop playback before the end.

Play Clipboard

Choose **Play Clipboard** to play the contents of the clipboard. Press the space bar to stop playback before the end.

Key Signature

Choose **Key Signature** to insert a key signature in the song. This has the same effect as clicking the key signature control in the work area. It opens the Key Signature dialog box. See the “Key Signature” entry under the “Controls” description earlier in this “Reference” section for more information about setting the time signature.

Time Signature

Choose **Time Signature** to change the time signature for the song. This has the same effect as clicking the time signature control in the work area. It opens the Time Signature dialog box. See the “Time Signature” entry under the “Controls” description earlier in this “Reference” section for more information about setting the time signature.

Insert Tempo

Choose **Insert Tempo** to change a tempo within a song. This has the same effect as clicking the Italian name box in the tempo change area of the work area. It inserts the current tempo setting into the song. See the “Tempo” entry under the “Controls” description earlier in this “Reference” section for more information about setting the time signature.

Insert Volume

Choose **Insert Volume** to change the volume level within a song. This has the same effect as clicking on the dynamic marking box in the volume change area of the work area. It inserts the current volume setting into the song. See the “Volume” entry under the “Controls” description earlier in this “Reference” section for more information about setting the time signature. This option works only on Digitized and MIDI sounds; it doesn’t work on Internal Sound.

Available Memory

Choose **Available Memory** to see how much memory you have left to use for entering additional notes and using other *The Music Studio 3.0* functions. A dialog box opens that shows you the number of bytes of free memory. Click **OK** to close the box.

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