

ARTS SERIES

SongwriterTM

by Art Bardige Samuel Wantman

Make Music! Start enjoying and composing. For the young and the young at heart. Great fun...and builds musical knowledge as well. In 15 minutes, be playing your own tune...on the computer or through the home stereo.

For Ages 5 10 15 **Adult**

● Atari 48K, Disk Drive.

● Available for Apple, Commodore 64, IBM-PC.

Scarborough.

Your Songwriter™ disk.



ARTS SERIES

SongwriterTM

**Created by Samuel Wantman and
Art Bardige, Learningways, Inc.**

Programmed by Samuel Wantman.

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25 North Broadway, Tarrytown, New
York, 10591 U.S.A.,**

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Credits.

Many people have contributed to the creation of SONGWRITER. The authors would especially like to thank:

Betty Bardige
Andy Christiansen
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Celia Houghton
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Charles Olson, Jr.

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Equipment Required.

ATARI
One disk drive.
Monitor (color optional).

A Note On Learning About Music.

In addition to being a lot of fun, SONGWRITER has been designed to offer a rich and rewarding educational experience to children and adults. SONGWRITER's scope is very broad. It can be used with young children who are just starting to learn about music as well as with college music students.

In designing SONGWRITER our educational objectives were to give students of music an opportunity to experience musical concepts. We believe that a good way to learn is by creatively interacting with tools. SONGWRITER is a tool which students may use to gain a visual, tactile, and aural understanding of music in a creative and enjoyable way.

Many music educators have asked us why we did not use standard musical notation. The reason is twofold. First, musical notation is not easily understood and requires the user to have a significant amount of prior knowledge about music. Second, musical notation presents a distorted visual picture of music. Very short notes are often several times larger than very long notes. Notes that appear equally spaced on the staff are often different intervals on the scale. Because of these distortions, musical notation obscures a wealth of information about musical patterns.

We hope that as parents and educators you will encourage a playful attitude about learning music. Music is a language. An important part of learning a language is babbling - playing with the elements of the language. Don't worry if the music that you hear coming out of your ATARI does not sound like Bach or Beethoven. The product is not as important as the process.

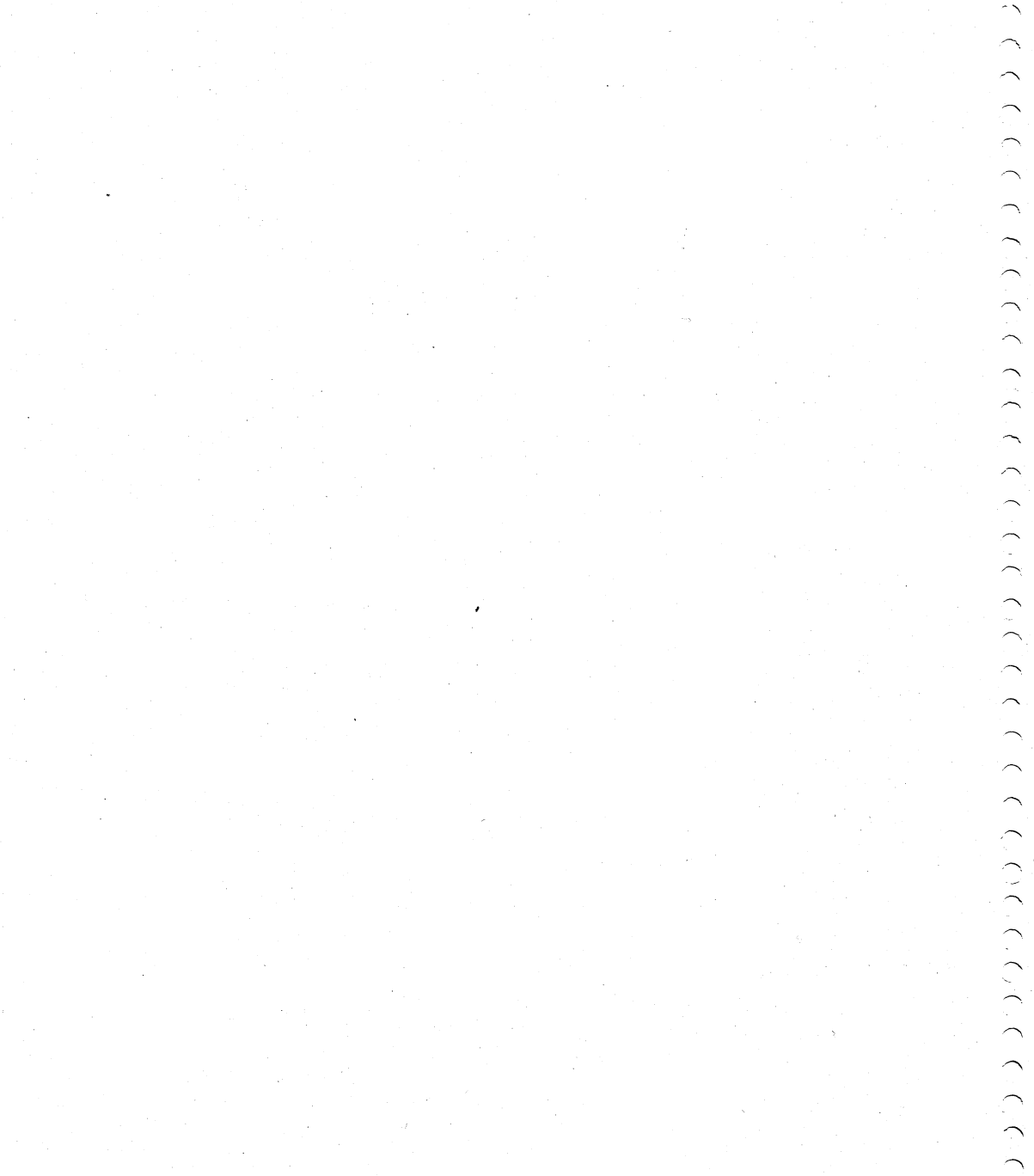
Encourage exploration. Don't expect a SONGWRITER user to become proficient with all the aspects of the program right away. We have tried to make following this manual as easy as possible. If children are old enough to read the manual, let them explore it at their own pace. If you are presenting the material to younger children, don't rush them. Wait until they want something new.

As the user is writing music, he or she will be learning about musical intervals, scales, rhythm, and structure.

We believe that SONGWRITER is an exciting way to learn music.

We would appreciate your comments and suggestions.

The authors.



Introduction.

How to Use This Manual.

This manual provides you with a number of different ways to learn to use SONGWRITER. If you want to start writing music very quickly read Quick Start and begin. You will be writing a song in less than five minutes. You can then, if you want, continue to learn how SONGWRITER works using the manual as needed. SONGWRITER has been designed for you to use virtually without any help.

This manual also provides a carefully arranged, systematic approach for learning SONGWRITER. In addition, the manual has been designed to give you an understanding of the fundamentals of music. Each chapter has three sections:

- The *Introduction* quickly describes the commands and the important musical ideas.
- The *Step-by-step Instructions* provide you with the details of the commands. Many of these instructions have been written as answers to questions to make it easier to find what you are looking for.
- The *Activities* sections of the manual offer activities, questions and suggestions to direct and expand your understanding of the significant ideas in music. They will help you think of many different things that you will want to try using SONGWRITER.

The back of this manual contains interesting and useful information about SONGWRITER including a simple way to hook it to your stereo, an explanation of error messages, and a Glossary of Musical Terms used in this manual.

The Table of Contents at the beginning of the manual and the Index of Commands at the end of the manual will help you find specific topics with a minimum of fuss and bother. This index is also on your Command Card.

Now have fun and enjoy SONGWRITER!

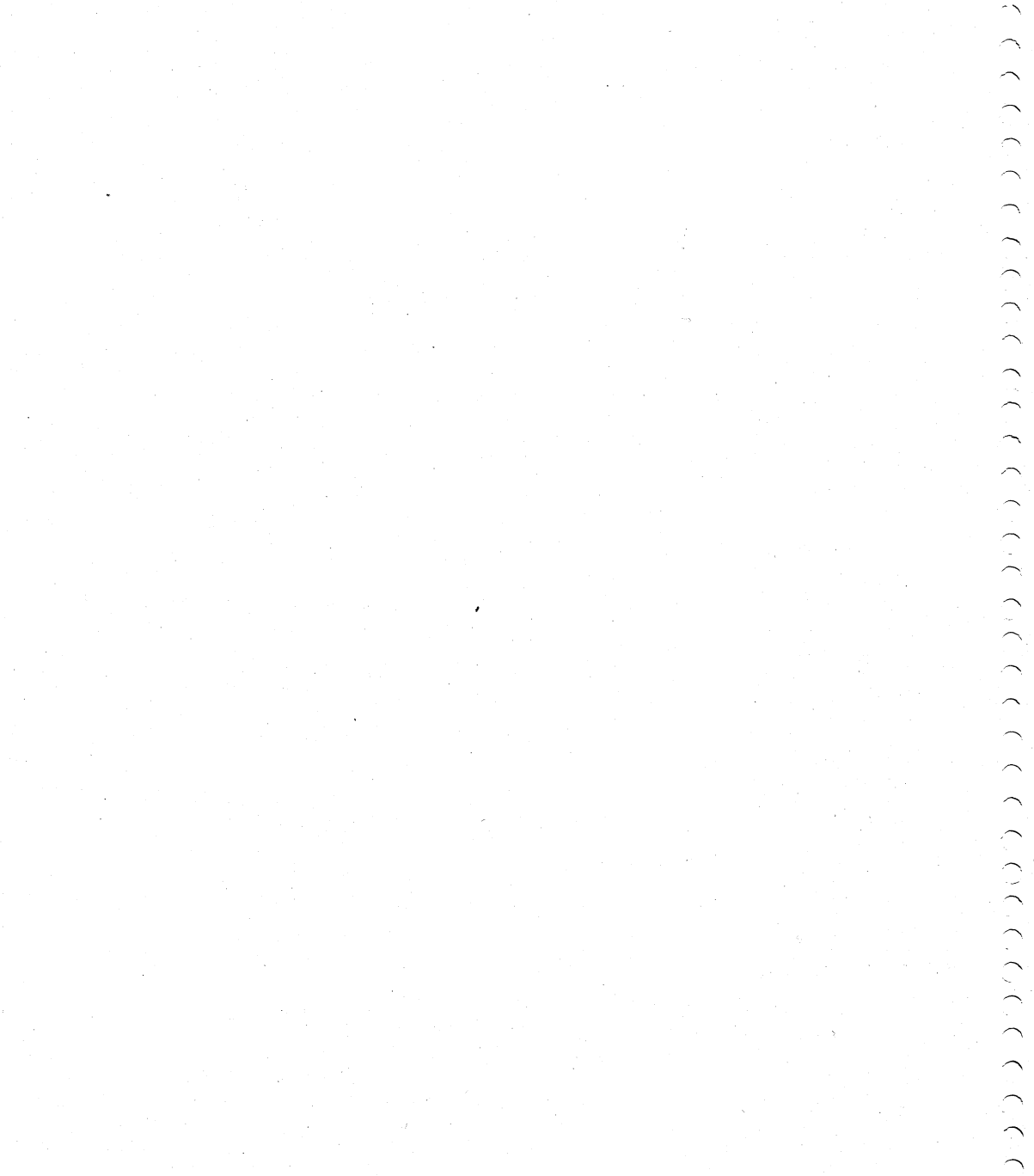
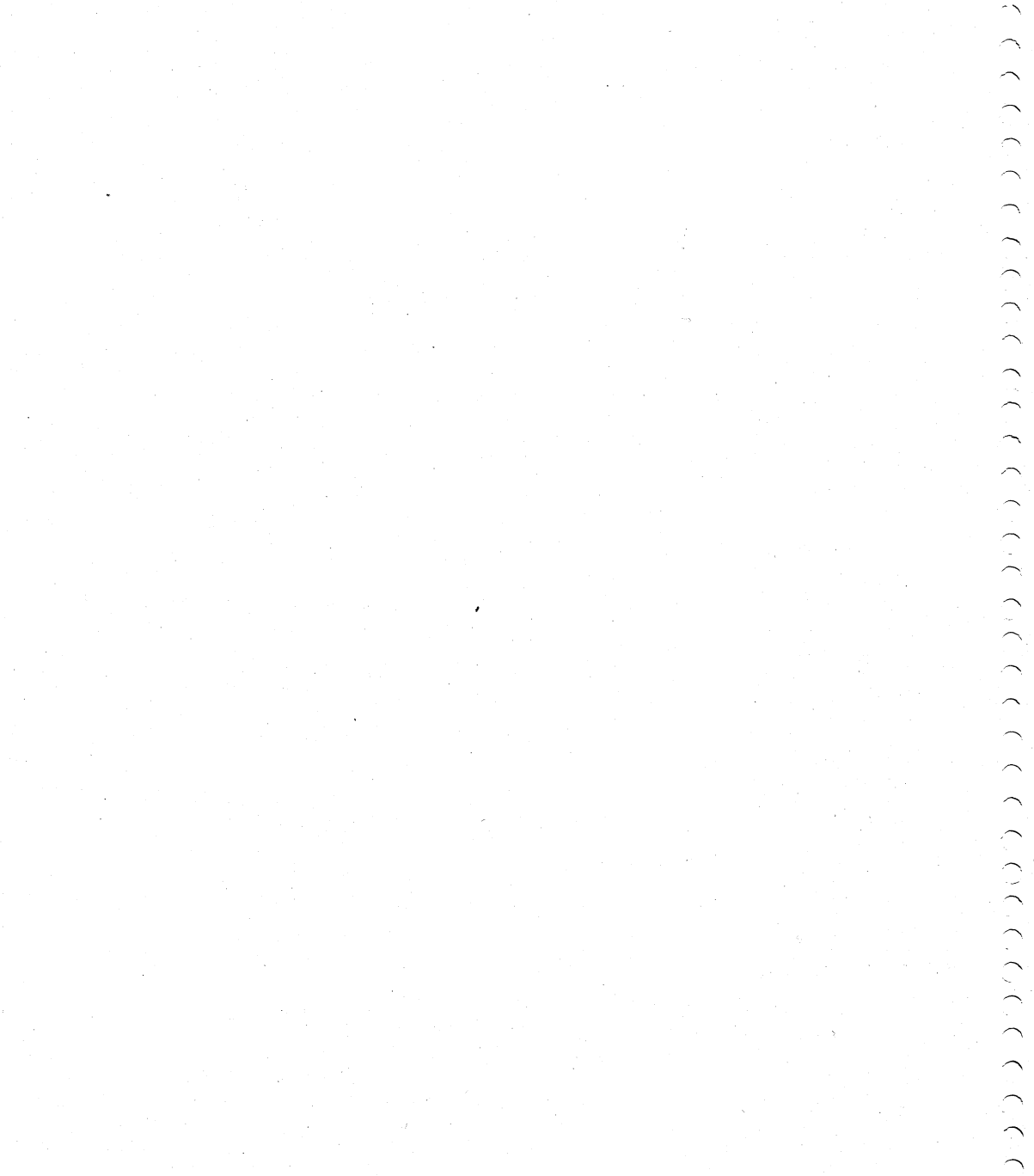


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I. Quick Start.

SONGWRITER has been designed for fun and for learning music. This Quick Start chapter will get you started quickly writing and editing songs. It will familiarize you with the way the program works so that you can continue even without a manual. There is nothing that you can do from the keyboard that can hurt either your computer or SONGWRITER. Explore, try things, play. If you find yourself in a place you do not understand or do not want to be in, just push ESC to *Escape*. It's that easy!

Turning on SONGWRITER.

Turn on the screen (television or monitor).

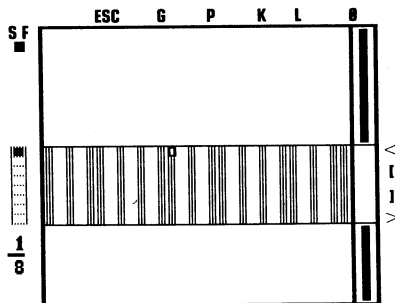
Turn on the disk drive first without a disk in it.

When the "busy" light goes off—insert the SONGWRITER disk, close the door of the disk drive and turn on your ATARI.

If you have not already done so, put in your SONGWRITER disk and "boot it up." *Now turn on Computer while at the same time hold down "option"* SONGWRITER is ready for you to write music when you see the screen below. If you do not see this screen then repeat the "booting" procedure.

On the screen are many of the things you need to know. The symbols around the edge represent most of the keys that will do something when you press them. The action a key performs is suggested either by the first letter of the word, like P for *Play* or by the shape of the symbol like] for move right. Most of the keys SONGWRITER uses are located around the edges of the ATARI keyboard to make them easy for you to find. The SPACE BAR, the RETURN key, and the arithmetic operations (+, -, *, /) are not shown on the screen.

Press the RETURN key. Try it as many times as you want. Press the] key. Try it as many times as you want. Press the [key. The] and [keys move the note up and down the scale and the RETURN key plays the note. Put the note back to its starting location on the scale (check the picture below).



Now the fun begins. Press the SPACE BAR. You have just recorded your first note on SONGWRITER's "piano roll." If you compare the keys depicted on the right side of the screen with those in the starting picture you will see a change. You can now do several new things. But before you do, move the note up the scale one more step (pressing the] key) and record that note with the SPACE BAR. Continue these steps until you have recorded eight notes.

Now press the P key for *Play* and play your song as many times as you want. It is proper form to sing along with SONGWRITER. Try the A and Z keys. They move the SONGWRITER roll up and down and allow you to hear the notes as they move through the scale. Stop in the middle and now move your note. Press the SPACE BAR to record that note. It has just been added to your song. New notes can be added to songs anywhere.

If you have a joystick, plug it into any game port. Moving the joystick up and down is the same as pressing A and Z. Moving the joystick right and left moves the note right and left. The joystick button records a note.

The X key will erase a note, try it. The erased note is still on the scale so that pressing the SPACE BAR will bring it back. Erase a note and bring it back. Erase a note and press the 2 key. Record the note again. Move the next note up and erase it. Press the 4 key and record that note. Play the song now.

Number keys change the length of the note on the scale. SONGWRITER shows you how long a note is through the fraction bar on the left side of the screen. Below the fraction bar is the number for the note length. Pressing the (+, -, *, /) keys and a number key will perform that operation on the fraction. (You will have to experiment a little to get used to it. You can change the numerator of a fraction by adding or subtracting numbers from it. You can change the denominator by multiplying or dividing the fraction by a number. For right now, we recommend that you keep on with this example.) Now erase all of the notes so that you can start a new song.

You are going to write a real song. First, change the note length to 1/4 notes (starting with a 1/8 note press the * key and then 2). Put the note back to its starting location on the scale. (See picture on previous page.)

Do the following:

- Move up the scale 2 steps (press the] key twice) then record the note. (Press the SPACE BAR)

- Move down the scale 1 step ([key) and record that note.

- Move down the scale 1 step and record the note.

- Move up the scale 1 step and record the note.

- Move up the scale 1 step and record the note three times.

- Record a rest (press the 0 - number zero - key).

- Move down the scale 1 step and record the note three times.

- Record a rest.

- Move up the scale 1 step and record the note.

- Move up the scale 2 steps and record the note two times.

Record a rest.
Move down the scale 2 steps and record.
Move down the scale 1 step and record.
Move down the scale 1 step and record.
Move up the scale 1 step and record.
Move up the scale 1 step and record the note four times.
Move down the scale 1 step and record the note two times.
Move up the scale 1 step and record.
Move down the scale 1 step and record.
Move down the scale 1 step.
Multiply the note length by 2 (press 2 or press *2).
Record the note.

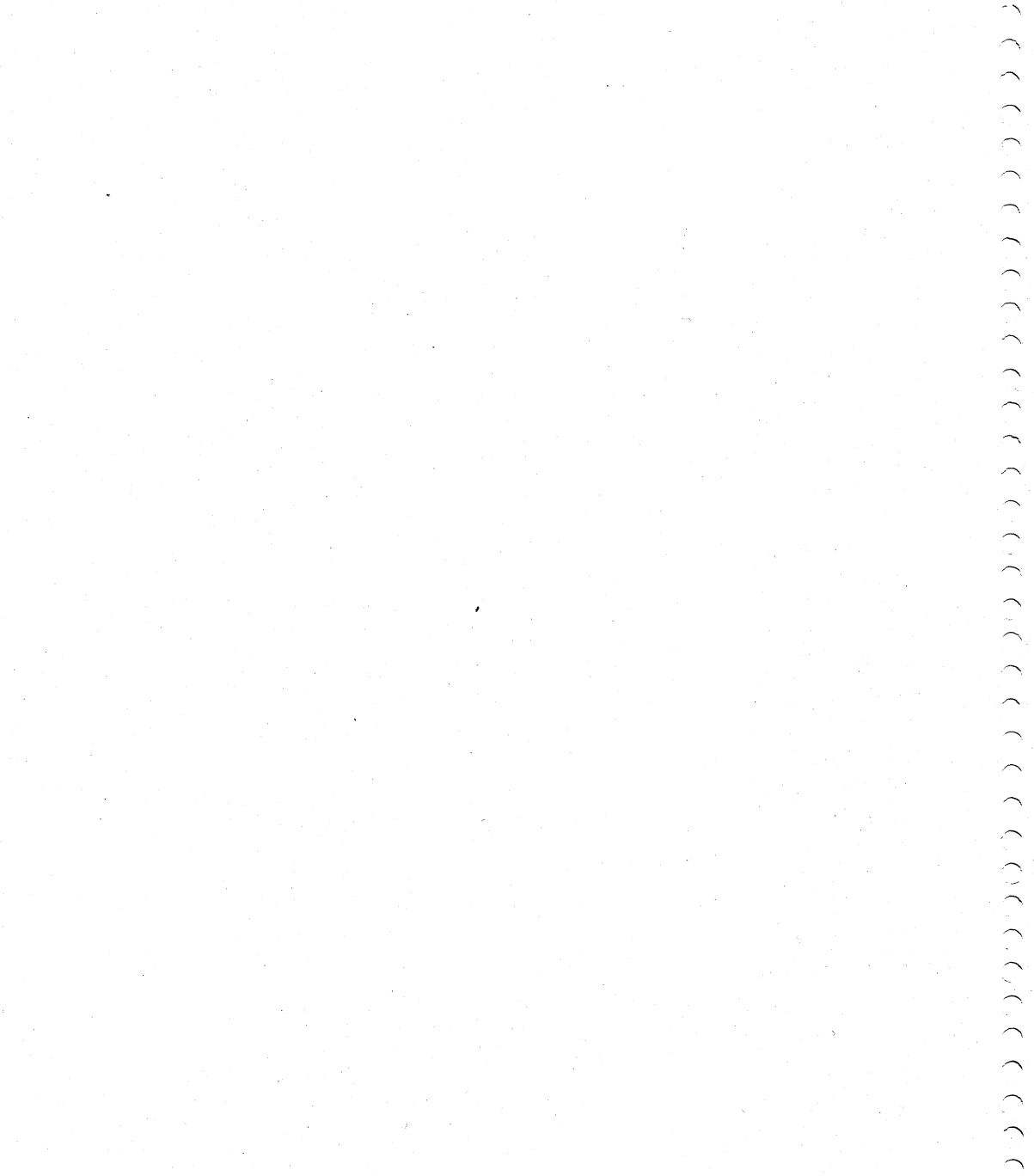
Play the song (press P). Does it sound right? Play it again. Make any changes by moving to the wrong notes and erasing them or adding new notes.

"Mary Had a Little Lamb" is the song that in some ways started all of this; it was the song that Thomas Edison recorded on the first phonograph. You, too, can save your song, but you cannot do it on the SONGWRITER disk which is write-protected against accidents. If you have a regular ATARI formatted disk to save your song on, then take out the SONGWRITER disk and put in the ATARI disk in the same drive. Press G for *Get*. You will see the *Get* screen with its illuminated option on the top of the screen. To save your song, first press return to give you that first option. Then type in the name of your song (up to eight characters) and press RETURN again. Your song is now saved.

If you do not have a regular ATARI formatted disk then SONGWRITER can make one for you. Put in a new disk (formatting a disk erases it). Press G for *Get*. You will see an illuminated box at the top of the screen. You can move the options through the illuminated box with the [and] keys. Press the] key. Each of the options has a longer description under it. Go to MAKE NEW DISK and press RETURN. Then follow the instructions on the screen. Once you have a ATARI disk ready then just press G for *Get* and you will be on SAVE SONG. Press RETURN, type in the name of your song and press RETURN.

SONGWRITER comes with songs on the disk. Let's play them. Put the SONGWRITER disk back into the disk drive and press G again. This time press the] key to go to LOAD SONG and press RETURN. You will see a catalog of all the songs on the disk and on the bottom of the screen are the keys that you can use. Use the [or] keys to move around the catalog. Press RETURN to load the song you choose. Loading a song replaces the old one. To listen to the song just press P for *Play*.

You are now on your own. You can edit or rewrite any of these songs. You can write your own song. You can learn more about music and about the other features in SONGWRITER like the Learn key by following the rest of this manual. Or you can just try things. Try all of the keys shown on the screen and all of the options on the *Get* screen. Exploring SONGWRITER will help you learn music and exploring music will help you learn more about SONGWRITER.



II. The Total Guide.

Each of the chapters in the manual takes a group of several commands which make SONGWRITER work and explains them in boldface. If you like to experiment this may be all you need. But, if you want more details on how the commands work, take a look at *Step-by-Step Instructions*. And, if you want to learn even more about music, spend some time with *Activities*. Finally, remember that if you see a musical term here which you don't understand, you'll probably find it in Section IV, *Glossary of Musical Terms*.

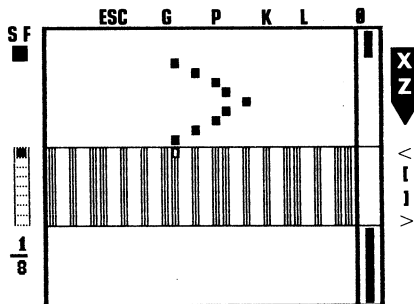
Chapter 1: Notes.

SPACE BAR - Records the note

] - Moves the note up the scale

[- Moves the note down the scale

A player piano reads the holes in a roll of paper and plays keys on the keyboard. SONGWRITER works the same way. Imagine that there is a long roll of paper. When you press the SPACE BAR, SONGWRITER punches a hole in the paper and rolls it up the screen.



The [and] keys change the pitch (sound) of the note. The] key raises the pitch and the [lowers the pitch.

Step-by-step Instructions.

Look at the middle of the screen, you will see many different stripes. On a color T.V. the stripes should be blue, orange and black. On a black and white set the blue and orange stripes look light gray. You may notice that the stripes look a little like a

piano keyboard. The set of stripes is a scale.

The white bar in the middle of the scale is a note. You can move the note by pressing the] and [keys. Try both keys. Moving the note changes the pitch of the note.

But! you say, I don't hear any music!!!!

To record the note press the SPACE BAR. The note will be recorded on the imaginary roll of paper. Move the note to a different spot on the scale and press the SPACE BAR again. That's basically all you need to know to start to write music. Try playing with the] and [keys and the SPACE BAR.

Why do I hear a clicking sound sometimes?

If you press] or [many times the note will move all the way to the end of the scale. If you keep pressing the key you will hear a short click. The click tells you that you can't go any further. Whenever you hear that click it means that SONGWRITER cannot do what you told it to do.

Why does SONGWRITER use the [and] keys to move the note on the scale?

The [and] keys were chosen to be easy and quick to use and to look like the motions they create. You do not need to press the shift key for [and].

Why does the screen suddenly change color when I don't do anything for a while?

SONGWRITER protects your screen by automatically changing colors if it has no input. Pressing any key will return the screen to its correct colors.

Activities

- Record notes all over the scale. What note has the highest pitch? What note has the lowest?
- We group words together into phrases and sentences when we speak. We group notes together into phrases and melodies when we create new music. Try writing many different phrases. Try writing phrases that look like zig-zags. Try writing phrases that look like other shapes.
- Record any note. Move up two notes on the scale. Record the note. Move down the scale one note and record another note. Repeat this pattern over and over.

- Try the same pattern but instead of going up two notes, go up one note, and instead of going down one note, go down two notes.
- Try other patterns such as up three and down two.
- Try patterns with more notes.
- Take a pattern you like and try starting at different places on the scale. Try making lots of patterns.
- Patterns are one way of writing music. Musical patterns are called motifs.

How do I hear the music I wrote? Continue to Chapter 2.

A note to parents and teachers.

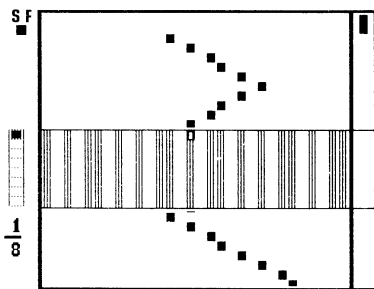
SONGWRITER has a built-in Diatonic scale (the scale much of western music uses). It is possible, however to use other scales. The Pentatonic scale is often used with beginning music students because it makes it easier to write pleasing melodies. There are two ways to set SONGWRITER up using a pentatonic scale:

- Read the chapter called Saving and Loading. Load the song called Pentatonic from the disk.
- Read the chapter called Designing Scales, which explains how to create different scales.

Chapter 2: Listening.

- A** - Plays the next note (moves music up)
- Z** - Plays the previous note (moves music down)
- P** - Plays the song from the beginning
- C** - Continues playing from where you stopped

Listening is the most important part of writing music. The A, Z, P and C keys allow you to hear what you have written on the imaginary piano roll. The A key plays the music forward one note at a time (the roll moves up). The Z key plays the music backwards one note at a time (the roll moves down). The P and C keys play the music without stopping between notes.



Step-by-step Instructions.

To hear what you have written press the P key. P stands for *Play*.

You will hear your music played from the beginning. Try it! To stop your song press any key (except F and S). Try stopping your song in the middle.

Is there a way to start it up again once it has stopped?

Yes! Press the C key. C stands for *Continue*. Your music will play from wherever you stopped.

Is there a way to listen to the song one note at a time?

Yes! The A and Z keys both play one note at a time. The A key moves the music up one note, and the Z key moves the music down one note. Press the Z key again and

again until you are back at the beginning of your song. When you get to the beginning you will hear a click if you keep pressing the key. Remember: the click tells you that SONGWRITER cannot do what you asked it to do. In this case it is because the music is all the way back to the beginning and cannot go back any further.

The A key makes the music move in the other direction.

Why does SONGWRITER use A and Z for up and down?

We did not want to use the cursor keys on the ATARI because it also requires pressing the control key and could easily be confused with the arithmetic operations. We chose A and Z because of their location on the keyboard.

Can I use my joystick with SONGWRITER?

Yes! You can use it to move the note on the scale by pushing it right or left (♦ or ♦). You can move your music forward by pushing it up (▲) or down (▼). And you can record a note by pressing the button. If you have a joystick, plug it into any game port and try it.

What do all the letters on the edges of the screen mean?

These are pictures of almost all of the keys that do something. Some of them you have tried already, such] and [and the A and Z keys. If the picture of the Z key does not appear you are at the beginning of a song and if the picture of the A key does not appear you are at the end of a song.

Activities

- Listen to what you have written so far. Which parts do you like? Which parts do you not like? Close your eyes and listen. Ask a friend to listen.
- Listen to your song and then sing it to yourself. Did you remember the whole song? If not, listen to it again.
- At any point in your song you can add more notes by pressing the SPACE BAR. Try adding notes at different places in your song.
- Listen to your song backwards. Do you like the way it sounds? Which way do you think it sounds better?
- Can you write a song that sounds the same played forwards and backwards?
- Can you write a song that sounds like a song that you know?

- Pick a note on the scale and write a phrase that uses that note more than the others. Write a phrase that starts and ends on the note. Write a phrase that repeats the same note after any other note is played. Listen to these phrases. Do you like how they sound?

How can I erase notes that I don't want? Continue to Chapter 3.

Chapter 3: Making changes.

RETURN - To hear a note without recording it

X - To erase the previous note

A - To listen to the next note

Z - To listen to the previous note

ESC Z - Jump back to the beginning

ESC A - Jump forward to the end

Changing what you have written is called editing. If you do not like something you wrote, try it a different way. Exploring, experimenting, and editing are all important parts of enjoying and writing music.

ESC is short for *Escape*. The **ESC** key is used to escape from where you are and jump to somewhere else. **ESC Z** allows you to jump back to the beginning of your song. **ESC A** jumps to the end.

Step-by-step instructions.

The only way to change a note is to erase it first. The **X** key *erases* the note just above the scale. When you erase a note the music on the top half of the screen moves down one note. Nothing happens to music on the bottom half of the screen.

The **X** key is very handy when you are first writing music. If you just pressed the SPACE BAR and recorded a note which you don't like, you can remove it with the **X** key.

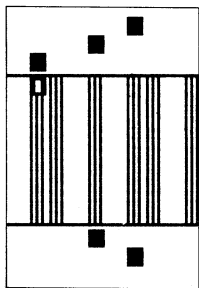
Try adding some notes and erasing them. Remember: you can repeat any key.

You can also use the **X** key to change or "edit" a song. Use the **Z** key to get to the beginning of your song. Then use the **A** key to listen to your song a note at a time. Whenever you hear a note that you do not like, press the **X** key to *erase it*. The note you erased will be sitting in the scale. Change the note to the note you want using the **]** and **[** keys. Record the new note using the SPACE BAR. Remember: to edit a song you have to listen, erase, change and record. The four illustrations on the next page indicate what your screen will look like after each step.

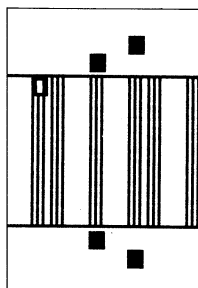
What If I erase a note and then change my mind?

When you erase a note from a song, the note you erased will be sitting in the scale. You can put it back into your song by pressing the SPACE BAR. This will only work for the last note that you erased.

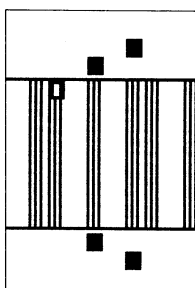
LISTEN



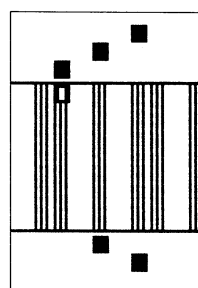
ERASE



CHANGE



RECORD



Key

A,Z

X

I,I

SPACE BAR

Joystick ← →

↑ ↓

BUTTON

Is there a way to hear a note without recording it?

Yes! To hear the note you have picked without recording it, press the RETURN key. Try it! You will hear the note, but the note will not move up the screen.

What if I want to add some notes in the middle of a song?

No problem. Just use the A key and the Z key to move to where you want to add the notes. Add the notes the same way as before by using [and] and the SPACE BAR. Adding notes in the middle of a song will not change the notes that come before or after.

Can I jump to the beginning or end of a song?

Find the key marked ESC. When you press the ESC key your music will disappear from screen. (Don't worry, your music is still there in memory.) If you press the Z key after pressing the ESC key you will jump to the beginning of your song. Try it!

If you press the ESC key and then press the A key you will jump to the end of your song.

When you press the ESC key, all the keys that will do something are shown around the edges of the screen except the SPACE BAR and RETURN. If you press any other key, you will go back to your song.

Activities

- Listen to the notes you have recorded so far. Does it sound the way you expected it to? Whenever you write something, go back and listen to it. Decide

which sections you like, and which sections you don't like. Think of ways you might make your song better.

- Experiment! Try making changes. Try several changes and pick the one you like the most.
- Build a song by adding the same note to the beginning and end of your song. Press ESC Z to jump to the beginning. Add a note. Press ESC A to jump to the end and add a note. Do this several times. Listen to the notes you added. How do the notes at the beginning compare with the notes at the end? Which do you like better?

How can I save my song on the disk? Continue to Chapter 4.

Chapter 4: Saving and loading songs.

[G] - Gets the list of choices

[J] - Moves to the next choice

[I] - Returns to the previous choice

RETURN or **SPACE BAR** - Selects the choice in the box

ESC - Returns to your song

G stands for **Get**. Press **G** to get something from the disk or put something on the disk. The keys **[J]**, **[I]**, **Z** and **A** move the choices on the screen. The **RETURN** key or the **SPACE BAR** selects the choice you want. Four of the possible choices are:

SAVE SONG - Saves your song on the disk

LOAD SONG - Loads a song from the disk

START NEW SONG - Erases all the notes in your song. Allows you to write a new song

MAKE NEW DISK - Formats a blank disk to save songs

SAVE SONG allows you to store a copy of the song you write on your storage disk. If you want to bring your song back at any time, you can load it back in. **SONGWRITER** will save songs on any **ATARI** formatted disk.

Step-by-step Instructions.

Press the **G** key. The screen will now look like this:

SAVE SONG	LOAD SONG	ADD SONGS
SAVES YOUR SONG ON THE THE DISK		

On the top of the screen are three choices: **SAVE SONG**, **LOAD SONG**, and **ADD SONGS**. The first of these — **SAVE SONG** — is in a box. Use the **[J]** or **[I]** keys to move different choices into the box. Try the **[J]** key. **LOAD SONG** should move into the box. Try the **[I]** key. **SAVE SONG** should now be in the box. A little lower on the screen is a line which has a longer description of the choice. You may also use the joystick to move the choices.

To save your song on the disk, use the **[J]** or **[I]** key to put **SAVE SONG** in the box and press **RETURN** or press the joystick button. Try it! Next type the name of your song. The name can be anything you want it to be, up to 8 characters long without any spaces. If you hear a click then **SONGWRITER** cannot use the key you pressed. If you make a mistake typing, use the **DELETE/BACK S** key to erase your mistake. When you have finished typing the name press the **RETURN** key. The disk drive will start up. In a few seconds your song will be saved.

Uh-oh! I think something went wrong.

Sometimes things go wrong when you are using the disk drive. If something goes wrong you will get a short message that tells you what the problem is, and "—PRESS ANY KEY —." Look up the Error Message on page 55 to find out what it means. You cannot save a song on the SONGWRITER disk. Remove the SONGWRITER disk and replace it with a formatted disk.

What If I don't have any formatted disks?

SONGWRITER can format a disk for you. Insert a blank disk in the disk drive, press G and use the] and [keys to get the option MAKE NEW DISK. Press the RETURN key. WHEN YOU MAKE A NEW DISK, EVERYTHING ON THE DISK WILL BE ERASED! To make sure you don't erase a disk by mistake, you will be asked to press the Y key (any other key returns you to your song). After the disk has been formatted, you can save your song on it.

What if I change my mind?

At any point you can stop what you are doing and return to your song by pressing the ESC key. You could even press ESC in the middle of typing a name when saving your song.

What do all the colors mean?

SONGWRITER color codes the Get options as a visual aid for you in choosing the option you want.

What happens if I press the SYSTEM RESET key?

Nothing harmful, but it is not a good idea to press it when the upper red light on the disk drive is lit.

How do you turn SONGWRITER off?

Turn off your ATARI.

How do I get a song back that I have saved?

Choose LOAD SONG. (Remember: press G, then use the [,] keys, then press RETURN.) The list that appears will have the names of all the songs on the disk, including the song you just saved. To choose a song use the joystick or [,], A or Z keys to move around the list. Then press the joystick button or RETURN to load the song. Try it! Songs come back sounding and looking just like they did when they were saved.

What happens to the song I was writing if I load a new song?

IT WILL BE ERASED! Make sure any song you want to keep is saved on the disk before you load a new song. Remember: you can press the ESC key to get back to your song if you change your mind.

Once I have saved my song on the disk, how do I start to write a new one?

To start a new song you need to erase the song that you just wrote. You can use the X key and erase every note one at a time. You can also turn SONGWRITER off and start it up again. There is an easier way. Press the G key. This time use the] and [keys to get the choice START NEW SONG in the box. Press the RETURN key. You will then see PRESS THE Y KEY TO ERASE YOUR SONG. Once again press the Y key. SONGWRITER will look just as it does when you first turned it on.

Is there any way to get my song back once I have erased it?

No, not unless you have saved it on a disk.

What happens if I save two songs with the same name?

You can't! The song you are saving will replace the old one. If you do not want to erase the old song, then use a name that is slightly different. When people use computers, they often number the different versions of things they are writing. For instance:

MYSONG1 MYSONG2 MYSONG3 etc...

SONGWRITER remembers the last name you used when you saved your song. To save the song with the same name and replace the old versions, just press RETURN. If you want to change the name, erase all or part of it by using the DELETE/BACK S key. Then make whatever changes you want.

Is there a way to combine songs?

Yes. You can find out how to do it on page 43.

Activities

- SONGWRITER comes with many songs on the disk. Try loading and playing some of them. Notice what the songs look like when you listen to them. Find a section of a song that you like, and try to write a song that looks similar.
- On the disk are three short songs called A, B and C. Load them and listen to them. Write your own short phrases and save them on the disk with names like D, E and F.

The notes in some of the songs on the disk are different lengths! How do you change the lengths of the notes? Continue to Chapter 5.

Chapter 5: Note lengths, rhythms and rests.

- 1** to **9** - Changes the length of the note
- +** - The next number you press is added to the length of the note
- - The next number you press is subtracted from the length of the note
- *** - The note length is multiplied by the next number pressed
- /** - The note length is divided by the next number pressed
- 0** - Records a rest

See the diagram on the next page for the part of your screen we're working with here. Rhythm is a word for everything in music that has to do with time. You can change the position of a note on the scale (pitch) and you can change the length of a note (rhythm).

Notes can be many different lengths. The longer the length of a note, the longer it will play. The shorter the length of the note, the faster it will play.

The length of the note is shown on the left hand side of the screen. Try all these keys and see how they affect the note length.

Rests are empty spaces in music. Rests are very important. They help separate phrases and also help create different rhythms.

Step-by-step Instructions.

Press G and start a new song. On the left side of the screen, near the scale you will see:



The filled in part is the same length as the note that is sitting in the scale. The fraction — one-eighth — means that the size of the note is one-eighth the size of the fraction bar. The fraction bar now has eight sections and one of them is filled in. Pressing a number key changes the length of the note and fills in more or fewer parts of the fraction bar.

Why doesn't the nine do anything?

The bottom number (the denominator) stands for how many parts the fraction bar has. The top number stands for how many of those parts are filled in. In SONGWRITER the top part of the fraction cannot be larger than the bottom part of the fraction. In this case there are only eight parts to the fraction bar so you can only use the numbers 1, 2, 3, 4, 5, 6, 7 and 8.

Is it possible to get notes that are shorter than an eighth note?

Yes! The / key divides a note into smaller pieces. The / stands for *Divided By*, so if you press the / key and then press 2 each part of the fraction bar will be divided into two pieces, and the note will be half as long. Try it!

Why is the bottom number sixteen?

Because there are now 16 parts to the fraction bar. Remember, the bottom number stands for how many parts there are in the fraction bar. The top number stands for how many parts are filled in. If you make the top number larger, then you make the note longer. If you make the bottom number larger then you make the note shorter. Press the 1 key. Now the note is a sixteenth note. There are sixteen parts to the fraction bar, and one of them is filled in. You can use the number keys (1, 2, 3, 4, 5, 6, 7, 8, and 9) and change the top number.

Can I fill in more than nine-sixteenths?

Yes! You can use the + key to add to the top number, and you can use the - key to subtract from the top number. Try pressing 9 to get nine-sixteenths, and then press + and then 6. Try it! Try using the - key to subtract from the top number.

How do I get back to eighth notes?

You can use the * key to multiply the length of your note. The * means *Multiply By*. If you want an eighth note you need to multiply sixteenth notes by 2. Press 1 to get the fraction to be one-sixteenth, and then press * and then 2. Try it! When you multiply by two, each of the parts of the fraction bar get twice as big, and your notes get twice as long.

What other fractions can I use?

You can use fractions that have denominators (bottom numbers) of 1, 2, 3, 4, 6, 8, 12, 16, 24 or 48. Load the song named LENGTHS and play it. (Do you want to save your song first?)

Play with the fraction bar and try to go from very short notes to very long notes, or whatever different lengths you want.

What does the Ø (zero) key do?

The Ø (zero) key is used to record rests in the column on the right side of the screen. Rests are spaces without any sound. A rest in music is like a pause when speaking. It is a time when musicians can rest. Try pressing the SPACE BAR and the Ø (zero) key. The length of the rest will be the same length as the note on the scale. Change the length of the note and press the SPACE BAR and the Ø (zero) key again.

Activities

- Set the note length to two-sixteenths and record three notes. Using different number keys, write all the different ways you can record three notes so that the numbers add up to 6/16ths. Try recording the notes in a different order. Try repeating some of the combinations. Try using different notes, or the same thing with four notes. How about four notes that add up to 8/16ths. Can you think of other things to try?
- Listen to what you have written. Which combinations do you like? Why? Can you make a song out of what you wrote?
- Here's another way to make different rhythms. Set the note length to one eighth. Write a short song, or load a short song that you have already written. Jump back to the beginning of your song (ESC Z). Play a note (using the A key) and add a rest after the note. Play another note and add a couple of rests. Try following a pattern, for instance try:

NOTE, NOTE, REST, REST, over and over, or try:
NOTE, NOTE, NOTE, REST, NOTE, NOTE, REST, NOTE, NOTE, REST, NOTE, NOTE
- Try making up your own patterns, or add rests whenever you feel like it.
- Listen to the new song. Do you like it more or less than the original song? How could you make it better? Which patterns do you like? Why? How is this way of making rhythms different from the first way?

- Start a new song. Write a short phrase out of seven notes that are the same length. Add a rest. Write more phrases the same way. Listen to what you wrote. Go back and erase all the rests. Listen to the new version. How do the two versions compare?
- Listen to some of the songs that are on the disk. Use the A key to step through any rhythms that you like. Try writing a song using the same rhythm.
- Can you make up a rhythm that you have never heard before?

Is there an easy way to keep track of rhythms that repeat regularly? Continue to Chapter 6.

Chapter 6: Measures.

- ESC** **M** - Sets the *Measure* length equal to the length of the note
M - Resets the marker to the beginning of a *Measure*

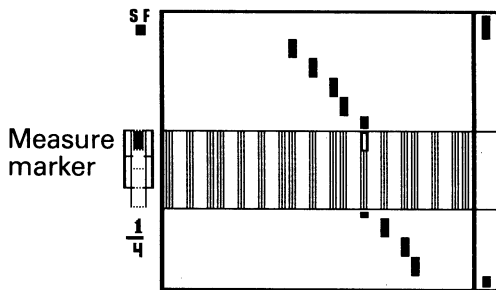
Have you ever swayed back and forth with music or moved your hands to music? If you have, you were repeating a motion after a certain amount of time. That amount of time is a measure. Measures are a way to keep track of where you are in your song. Measures can be of different lengths.

Step-by-step Instructions.

To set the length of a measure, set the length of the note to the length that you want the measure to be, for example three-quarters (3/4). Press the ESC key, and then press the M key.

Record eight quarter (1/4) notes and watch the fraction bar.

The marker shows you where you are in the measure. Try playing the notes forward and backwards and watch the marker. To reset the marker to the beginning of the measure, press the M key. Try it! See the illustration below.



But I don't hear anything different.

Setting measures will not change the way your song will sound. But it may help you when you are writing or editing a song. When you are writing a song, the marker shows how much time is left in the measure. It can help you choose the length of the next note. If your song does not sound right, you may have made a note too short or too long. Set the measure and go through the piece to find where the problem is.

Activities

- Time Signatures are another way of talking about the length of measures. When you set the length of the measure to three-fourths, you have set the time signature to three-four time. That means that there are three beats in each measure, and each beat has a length of one-fourth (i.e. one quarter note).
- To figure out what the time signature is, you have to figure out how many beats are in a measure. You can do this by tapping your toe or clapping at an even pace while you play or sing your song. Notice the times when you feel like tapping or clapping a little louder. Then count how many times you clap or tap in between the louder times. Its sort of like marching... ONE, two, three, four, ONE, two, three, four... or walking... ONE, two, ONE, two, ONE, two... or some types of dancing... ONE, two, three, ONE, two, three... The first beat of the measure is called the downbeat. It is called the downbeat because conductors bring down their arms to emphasize that beat.
- Once you know how many beats there are, you have to decide how long each beat will be. If you make each beat very short (like $\frac{1}{48}$ or $\frac{1}{24}$) it will be hard to write any rhythms that go any faster, so try and make the beats as long as possible.

If there are:

2 beats ... then try $\frac{2}{2}$ or $\frac{2}{4}$
3 beats ... then try $\frac{3}{4}$
4 beats ... then try $\frac{4}{4}$
5 beats ... then try $\frac{5}{8}$
6 beats ... then try $\frac{6}{8}$
7 beats ... then try $\frac{7}{8}$
8 beats ... then try $\frac{8}{8}$

- Set the length of the measure to $\frac{3}{4}$. Next, set the length of the note to $\frac{1}{16}$. How many sixteenth notes does it take to fill up a measure?
- Try creating different rhythms that repeat every measure.
- Try writing a song that starts each measure with the same note.
- Write a short song using eight notes. Set the length of the measure to three-quarters. Next, go through the song and add more notes so that each note of the original song becomes the first note of a measure. Listen to the new song. Can you still hear the old melody?
- Can you record a song in $\frac{3}{4}$ time? $\frac{4}{4}$ time? $\frac{7}{8}$ time?

- Try changing the time in the middle of a song! Try starting a song in 4/4 time and switching to 3/4 time.
- Listen to the song WHATTIME. Can you figure out what the time signature is? Try setting the measure to your guess.

Can I make a song go more slowly or more quickly? Continue to Chapter 7.

Chapter 7: Faster and slower.

- F** - Makes the tempo one speed *Faster*
- S** - Makes the tempo one speed *Slower*

After Pressing ESC:

- F** - Jumps to the *Fastest* tempo
- S** - Jumps to the *Slowest* tempo

Tempo is another word for speed. Changing the tempo changes the speed of the imaginary piano roll on the screen. The tempo can be changed when you are writing or playing a song, but the changes in tempo are not recorded with the song.

The correct tempo for a song is a personal choice. Musicians play songs at the tempo that sounds best to them. When composing or playing songs set F and S to your desired tempo.

Step-by-step Instructions.

The moving dot in the upper left hand corner of the screen shows the tempo. It is called a *metronome*. See the illustration below. Pressing the F key makes the tempo faster, and pressing the S key makes the tempo slower. Try the F key and the S key. Watch what happens to the dot. There are 20 speeds. You can make the dot move very fast and you can make the dot move very very slowly. Try playing one of your songs at different speeds.



Can I change speeds while a song is playing?

Yes! While a song is playing, you may change the speed by pushing the S key or the F key. You will hear a click if the tempo cannot go any slower or faster.

Is there a quick way to make the speed very fast or very slow?

Yes! If you press the ESC key and then press the F key, the metronome will move very fast. If you press the ESC key and then press the S key the metronome will move very slowly. Try it! ESC has the same effect on F and S as it has on the A and Z keys. ESC-Z and ESC-A jumps to the beginning or end, and ESC-F and ESC-S jumps to the fastest or slowest speed. ESC-S and ESC-F cannot be used while a song is playing.

Activities

- Try playing some of the songs on the SONGWRITER disk at different speeds. Try fast tempos, slow tempos and in between tempos. What tempo do you like the most? Why?
- Remember that the right tempo is a very personal choice. You often have to listen to a song many times at the same tempo before you can really tell if it sounds right. Pick your favorite song, and play it several times at a different tempo. What do you think?
- Some songs have more than one section to them. Should all the sections go at the same speed?
- Listen to the songs you have written. Decide the best tempo for each song.

Some songs on the disk have notes in between the notes on the scale. How do you get those notes? Continue to Chapter 8.

Chapter 8: Semitones and scales.

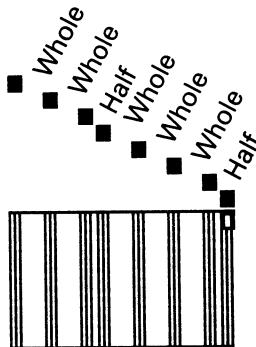
- > - Moves the note one half step to the right
- < - Moves the note one half step to the left

The black notes in between the notes of the scale are called **semitones**. They are halfway between the tones on either side. Semi means “half”, so semitone means half of a whole tone. Another name for a semitone is a half step. Two half steps make a whole step.

Step-by-step Instructions.

The < key and the > key move the note a half step. Try them! The < key makes the note one half step lower, and the > makes the note one half step higher.

Some pairs of notes in the scale do not have half steps between them. A major scale is a pattern of half steps and whole steps. A major scale starts with a note. Then goes up a whole step. Then goes up another whole step. Then goes up a half step, then goes up three more whole steps and then ends with a half step. Altogether there are eight notes in a major scale. So a major scale would be composed like this:



Activities

- All half steps are the same. Record a note. Move a half step and record a note. Play them and listen to how they sound. Try the same thing at different places on the scale. Can you hear that all half steps sound similar?
- Try writing a song using the < and > keys without using the] and [keys. Do you like the way it sounds?

- Now record a note, but this time move two half steps and record a note. The distance between the two half steps is a whole step. Listen to many different whole steps.
- The] and [keys sometimes move half steps and sometimes move whole steps. Find the first note of a major scale, and record the eight notes of the scale.
- Pick a note on the scale that is not the first note. Record the note. Move up a whole step (press > twice). Record the note. Move up another whole step. Record the note. Move up a half step (press > once) and record the note, and then record three more whole steps. Finish off with a half step. Listen to this scale. In what way is it similar to the other scales you have recorded? In what way is it different? Try the same thing starting on other notes.
- How many half steps are there between the first note of a scale and the last note? The distance between the first note on the scale and the last note is called an octave. Oct means eight. Why do you think it is called an octave? How many octaves can you find?
- Try writing a song that ends on the first note in a major scale. Many songs end on the first note of the scale because it makes you feel that the song is complete.
- Press G and start a new song. The note will be at the first position of a major scale. (This position is called the tonic.) Press the [key twice. Record a scale starting at this note using the] key. Stop when you are an octave above the first note. Listen to this new scale. This is called a minor scale. The pattern of half steps and whole steps in a minor scale is different from the pattern in a major scale.
- Try writing a piece that begins and ends with the first note of a minor scale. As you listen to this song, think about how it makes you feel.
- Pick another starting note and use the] key to record a scale that is an octave long. How many different scales can you make. These scales are called modes. Each mode sounds different. Major and minor are just two of the possible modes.
- Listen to all of the new scales. What is the pattern of half steps and whole steps in each mode? Try to write a song in each mode.

Is there a way to make scales that start on other notes? Continue to Chapter 9.

Chapter 9: Keys.

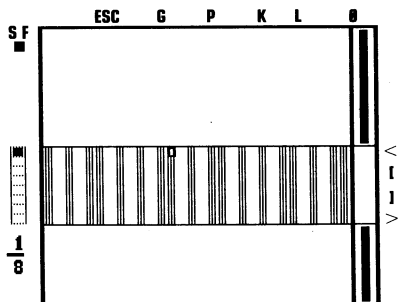
After Pressing ESC:

- []** - Moves pattern to the right
- []** - Moves pattern to the left

SONGWRITER makes it easy to start scales on any note. Pressing **ESC** and then the **[** and **]** keys moves the pattern of the scale. This is called changing the key. Press **ESC** again to go back to your song.

Step-by-step Instructions.

Use the **]** or **[** keys to move the note to the beginning of a major scale (the left side of an orange section). See the illustration below:



Press the **ESC** key. Now press the **]** or **[** keys and watch the note and the scale.

Why doesn't my song reappear?

Press **ESC** again to bring back your song.

Why doesn't the note move?

The note stays where it is. It is still the same note. Try recording a note, then move the scale by first pressing **ESC** and then using the **]** or **[** keys. Now record the note again.

If the note hasn't changed, what has changed?

The scale has changed. Record a major scale using the **[** and **]** keys. Then shift the

scale to the right using ESC], moving the note back to the beginning of the major scale (it's still the left side of the orange section). Record another major scale. Listen to both scales. In what way do they sound the same? In what way do they sound different?

Activities

- Set the note at the beginning of a major scale. Record a major scale. Move the note back to the beginning of the major scale. Shift the scale three steps to the right by pressing ESC then], then], then], then ESC again. Now play a scale starting from where you are and going up an octave. Listen to both scales. Do you hear the difference? This is an easy way to shift from major to minor.
- Remember where the minor scale begins. Try moving the scale to different places and recording several minor scales.
- Move the scale using ESC and the] and [keys. Record modes in different places.
- What is the pattern of the half-steps and whole-steps for each mode?
- Can you record each mode starting from the same note?
- Try writing songs in different keys. How do they sound? Which mode do you like the most?

Is there a way to create other scales with different patterns? Continue to Chapter 10.

Chapter 10: Designing the scales.

After Pressing ESC:

- X** - Removes note from the pattern
- SPACE BAR** - Adds note to the pattern
- >** - Moves note up a half step
- <** - Moves note down a half step
- RETURN** - Plays note without recording it

SONGWRITER allows you to construct scales with any combination of notes that you want. You can make a scale from one to twelve notes long. You can make a scale with steps of one half step to one octave. You can design your own pattern.

Step-by-step Instructions.

Move the note so that it is at the beginning of a scale. Press the ESC key. The X key will remove the note from the pattern. Try it! The SPACE BAR will add the note back to the pattern. Try it! Use the > and < keys to move up and down the pattern. Add notes to the pattern using the SPACE BAR. Remove notes with the X key.

Can I hear which notes I am adding or removing from the scale?

Yes! The RETURN key will let you listen to the note without recording it. The RETURN key, > key and < key work the same way after pressing ESC as they did before.

Can I get a new pattern to repeat itself over the whole scale?

Yes! It is possible to create the new scale so that the pattern repeats every octave (every 12 half steps). Move the note so that it is at the lowest note (all the way to the left). Create the pattern until you are an octave above the lowest note (12 half steps). Then press the] key and hold it down to make it repeat. Try it!

How do I save a new scale?

Simply save a song with the scale. If you want to save the scale alone, then save it under SAVE SONG without any notes in it.

Activities

- Start a new song (this will bring back a normal scale). Create a scale that only has the notes that a normal scale doesn't have. This scale is called a pentatonic scale. Penta means five, and tonic means tones. Try writing a song using the pentatonic scale.

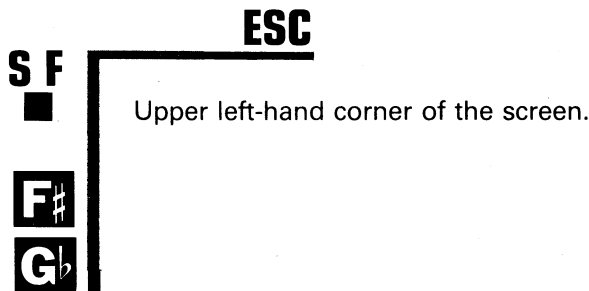
The pentatonic scale is often used with beginning music students because it makes it easier to write pleasing melodies.

- Can you make a normal scale by adding two notes to the pentatonic scale?
- Try creating a scale that only has four notes. Write a piece using the scale.
- Load MYSTERY. Record the notes in this scale in this order: 4, 5, 3, 1, 2 counting from lowest to highest. Try different note lengths.
- Try different note combinations, different musical keys and different attacks and delays.
- Try making and using a scale that has equally spaced notes.
- Try making and using a scale that has unequally spaced notes.
- Try creating other scales.

Is there an easy way to know where the octaves are? Continue to Chapter 11.

Chapter 11: The names of the notes.

Press G and use the] and [keys to get **NAME NOTES** in the box. Then press RETURN. This turns the display of note names on (or off). See the illustration.



All the notes have names. Notes that are an octave apart have the same name. Therefore there are twelve different notes that need names. But, there are only seven letters that are used as names; A, B, C, D, E, F, and G. That leaves five notes without names. The five missing notes have the same name as the two notes next to them with a “#” or “b” added. “#” is the symbol for sharp and “b” is the symbol for flat. A sharp means a half-step to the right and a flat means a half-step to the left. F# means one half-step to the right of an F. Gb means one half-step to the left of a G. F# and Gb are two names for the same note!

Step-by-step Instructions.

Press the G key and then use the] key to *Get* the option NAME NOTES. Press RETURN. The name of the note will be displayed on the left side of the screen above the fraction bar. Move the note to an A and use the > or < keys to move to the next A. Watch the names of the notes.

Can I turn off the display?

Yes! Press the G key and then move NAME NOTES into the box. Instead of TURN THE NOTE NAME DISPLAY ON, the option is now TURN THE NOTE NAME DISPLAY OFF. Press RETURN, and the display will go away.

Why doesn't SONGWRITER come with the note names turned on?

Because with SONGWRITER, we believe, listening to the sounds and seeing the patterns are more important than knowing the names of the notes.

Activities

- The name of a scale depends on the first note of the scale. Move the note to a C. Next move the scale so that a major scale begins at the C. Now you are in the scale of C major. What notes are in a C major scale? Move the note so that it is on a F. Move the scale so that a minor scale begins at the F. What notes are in an F minor scale? Try other notes and other modes.
- Try writing songs that switch key in the middle of the song. Try switching between different modes too.
- Listen to the songs on the disk. Do they switch key in the middle? Try and figure out what key a song starts in and what key it moves to.

Can I combine sections of my compositions to make a larger song? Continue to Chapter 12.

Chapter 12: Combining songs.

Press G and then use the arrow keys to Get the option ADD SONGS in the box. Then press RETURN. Use the I, J, A, Z keys to choose the song you want. Add the song by pressing RETURN. Add as many songs as you want.

[ESC] - Returns to the beginning of the added songs.

You can use ADD SONGS to repeat sections of a song; or you can elect to save the section on the disk and add it to itself; or you can combine small sections to form a larger song.

Step-by-Step instructions.

Play halfway through a song and stop. Press the G key. Use the] and [keys to move ADD SONGS into the box. Press the RETURN key. Use the] and [keys to get the choice called ADD THIS SONG. Press the RETURN key.

What happens now? How do I get back to the music?

Adding songs works differently from loading songs. When you load a song, you only load one song at a time. When you add a song, you can add as many songs as you want! The ESC key returns you to the music. Try it! What happened to the original song?

Activities

- Try to add a song at the beginning of your song. Try adding a song at the end of your song.
- Try writing a short song. Save it on the disk. Then add the song to itself! Listen to the new song.
- On the disk are three short phrases called A, B, and C. Listen to all three of them separately. Erase the last one. Use G to get the ADD SONGS option. Add the A, B, and C songs in the following order. A-B-A-C-A-B-A. Listen to the new song. Save the new song using the name ABACABA. Erase the song. Try the same thing again, but this time add the songs in this order. C-B-C-B-A-B-A. Save this song using the name CBCBABA. Can you think of other arrangements to try?
- Listen to all the new songs. Which order do you like best? Why?
- Try combining some of the phrases you have saved on the disk.

- Listen to some of the songs on the disk. Can you hear parts that repeat in different places? Try writing your own short songs and combine them into larger songs.

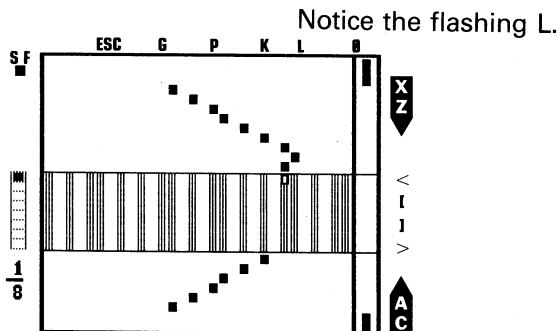
Will I be able to teach the computer new musical ideas? Continue to Chapter 13.

Chapter 13: Musical ideas.

L - Tells the computer to *Learn* a new musical idea.

SONGWRITER can learn new commands. When **L** is pressed, keystrokes are recorded until an unassigned key on the keyboard is pressed. The key will now automatically type all the keystrokes it has learned. It is a new musical idea. **SONGWRITER** can hold up to nine musical ideas at one time.

Musical ideas can have many different uses. They make it easy to repeat patterns of notes. They make it easy to make the same change many times. When **SONGWRITER** is learning an idea, the **L** is flashing on the top of the screen.



Step-by-step Instructions.

Try this:	Record a note	SPACE BAR
	Move the Note Up the Scale]
	Record the Note	SPACE BAR
	Move the Note Down the Scale	[

This is a pattern of keystrokes that records two notes. Move the note to different places on the scale and repeat the pattern. This pattern of keystrokes is a musical idea (Motif) that can be used many ways to build a song. **SONGWRITER** has an easy way to create and use musical ideas.

Press the **L** key. **L** stands for *Learn*. You will see the **L** flicker at the top of the screen showing that **SONGWRITER** is remembering all the keys that you press. For example, type the same pattern (SPACE BAR,], SPACE BAR, [). Next, press any key that does not already do something. For now, press the **Q** key. The **L** will stop

flickering. The idea is now recorded.

How do I use the idea once SONGWRITER learns it?

Simple. Press whatever key you ended the idea with. In this case it was the letter Q. Try it! Move the note to a different location on the scale and press Q again. The Q key now works the same as typing SPACE BAR ,], SPACE BAR, [. You type the idea once, and then you can use it whenever you want. If a part of the idea is to move up the scale, but the note is already at the top of the scale, you will get a click! just as if you had pressed the] key.

How many different idea keys can I create?

Up to nine.

What if I make a mistake?

You can start over again at any point if you make a mistake. Just press the L key again.

How many steps can there be in an idea?

Over a hundred! If you fill up all the space for keystrokes you will get a click no matter which key you press.

Can I use one idea as part of another idea?

Yes! You can press any idea key that has already been recorded when you are creating a new idea. Each step of the old idea will become a step of the new idea. This may fill up the space for recording ideas rather quickly.

What else can I do with the L key?

You can make any unused key do whatever you would like it to. You can think of L as standing for *Language* as well as learn. Each key that does something is like a word in the language. L makes it possible to combine the words into sentences. L starts the sentence. There is no limit to the number of different sentences that you can create.

Activities

- Musical idea keys are a lot of fun. Try making an idea that uses the] and [keys and the SPACE BAR.

- Move the note to a different place on the scale and try the ideas you made.
- Try writing a song using idea keys.
- Some people like to use = and the ATARI key for up and down. Use L to create = and the ATARI idea keys. Try making R stand for rest.
- Idea keys can be used to edit songs. Remember, the order for editing is play, erase, change, and record. Create an idea that starts with A and X and ends with the SPACE BAR.

A - Play next note

X - Erase last note

You fill in this space!

SPACE BAR - Record the note

- Can you make an idea key that would make a note twice as long? Or one that would move a note to a different position on the scale?

Is there a way to change a musical idea once it has been recorded? Continue to Chapter 14.

Chapter 14: Editing musical ideas.

[K] - to see, edit or create musical ideas *Keys*

After you press K, you:

- Choose the musical idea that you want to change or create
- Decide what key goes with the musical idea
- Give the musical idea a name to help you remember what it does
- Type the steps that you want in the idea

When you are typing steps:

DELETE/BACK S - Deletes the last step

RETURN - Ends the musical idea and returns to your song

Step-by-step Instructions.

To change an idea press the K key. K stands for *Keyboard*. You will see a list of all the musical idea keys you have created.

Every SONGWRITER command has a symbol on the idea screen. The square points to the idea to be edited. To move the square use the] or [keys. Try it! Press RETURN to choose the idea you want. You can also choose the musical idea by pressing the key you assigned to it.

Is it possible to change the key that makes the musical idea?

Yes! SONGWRITER will ask, "CHOOSE A KEY FOR THE IDEA:" and you will see the old key flashing. If you want the same key to stand for the musical idea, press RETURN. If you want to pick a new key for the idea press the new key. If you hear a click! it means that the key is already being used. Pick a different key.

Why do I have to give the idea a name?

You don't have to. The name is a way for you to remember what the musical idea is. You could call it ZIGZAG or MOVE NOTE UP. After you have typed a name press RETURN.

What other changes can I make?

After you type a name, the lower part of the screen describes the last eleven

keystrokes. You will be able to add steps to the end of the idea. If you want, you can use the DELETE/BACK S key to delete any or all of the old steps and start the idea over. If you press a key that SONGWRITER does not understand you will get a click! If you press the wrong key, then press the DELETE/BACK S key to delete it. Try adding some commands and then erase them using the DELETE/BACK S key.

Is it possible to use one idea as part of another?

It is not possible to use one idea as part of another when creating ideas this way. If you want to use one idea as part of another, you have to create it using the L key. The L key is explained in the previous chapter.

How do I get back to my song?

When you have finished changing the idea press the RETURN key to return to your song. This is the ONLY time when ESC will not get you back to your song because you might want to use ESC in a command. For example, you might want to create the idea — ESC F — that would jump to the fastest speed. So, ESC is needed and can't be used to get back to your song. RETURN gets you back to your song.

How do I create a new idea if I have already created nine?

The easiest way is to create the idea using the L key (see the previous chapter). When you choose the key to go with the musical idea you will have to erase an old idea. On the screen you will see:

THERE IS ONLY ROOM FOR 9 IDEAS.
WHICH IDEA KEY DO YOU WANT TO ERASE?

PRESS KEY -or- USE A, Z,], [and RETURN

You will see your new musical idea underneath the nine old ideas. Choose the key that you want to erase. If you don't want to erase any of the old ideas press ESC. This will erase the new idea and return to your song.

Activities

- Use the K key to see what ideas you have already created. Press the ESC key to get back to your song.
- Create names for your ideas.
- Press the L key, and teach SONGWRITER a new musical idea. End the idea by pressing the K key. What happens?

- Start a new musical idea by pressing the K key. As you make a new pattern, imagine how it will sound. When you are done, press RETURN and try the musical idea. Did it sound the way you thought it would?
- Start another new musical idea by pressing the K key. Can you create a musical idea that records a major scale? (Hint: Use the > key).

Is there a way to save ideas on the disk? Continue to Chapter 15.

Chapter 15: More musical ideas.

Press G and then use the arrow keys to get the following options:

SAVE IDEAS - Saves ideas on the disk

LOAD IDEAS - Loads a set of musical ideas from the disk

Saving ideas on the disk and loading ideas from the disk works the same way as saving and loading songs.

Step-by-step Instructions.

Press G and then use] or [keys to move SAVE IDEAS or LOAD IDEAS into the box. Press RETURN. Read the section on saving and loading songs if you have any problems. When you save your ideas, you save all nine of them on the disk. When you load ideas from the disk you replace all nine ideas, even if some of the space for ideas is not used. Idea names can be up to 8 characters long.

Ideas, like songs, can only be saved on a regular ATARI disk. To format a disk using SONGWRITER, see page 23.

Can songs and ideas have the same name?

Yes! SONGWRITER keeps track of which files on the disk are songs, and which are ideas. If you have to stop in the middle of writing a song, save the song and the ideas using the same name. The next time you get to work on the song it will be easy to remember which ideas go with which song.

Is there an easy way to erase all the ideas and start over?

Yes! Press G and select the LOAD IDEAS option. Load the EMPTY musical idea file.

Activities

- The disk comes with many files of musical ideas. Try loading some. Use the K key to see what keys are used and to see the names of the musical ideas. Try them. Some of them may help you make your own ideas.
- Some of the musical ideas on the disk are motifs. A motif is a musical pattern of notes that can be used to build a song. Load the idea file called MYSTERY. Then create a song by using the idea keys in the following order:

Q W E R E R T T T Y E R E R T T T Y U

Chapter 16: Sound quality.

When a song is playing (after pressing P):

- Moving the joystick up - Makes the decay quicker**
- Moving the joystick down - Makes the decay slower**
- Moving the joystick left - Makes the attack quicker**
- Moving the joystick right - Makes the attack slower**
- Pressing the joystick button - Switches back and forth between a quick and slow sustain. A long sustain makes notes overlap.**

Different instruments playing the same music will sound different. Some instruments can be played many different ways to get different sounds. SONGWRITER lets you change the way a note sounds 3 ways. You can change the attack, the sustain and the decay.

Attack describes how fast or slow a note begins. A slow attack is when a note starts out very quiet and slowly gets louder. The faster a note gets louder, the faster the attack. When a note is played on a piano, the attack is so fast that it sounds like the note starts out loud. Musicians can play some instruments (like the violin) so notes have short or long attacks.

Decay describes how fast or slow a note ends. A fast decay is when the sound stops suddenly. A slow decay is when the sound dies out slowly.

Sustain describes how long a note sounds in between the attack and the decay.

Step-by-step Instructions.

The joystick changes how notes sound when a song is playing. Start a new song. Records lots of long notes and lots of short notes. Press P and *Play* the song. As it is playing move the joystick up and down and listen to what happens. Moving the joystick up and down changes the decay of the note. If you move the joystick up and hold it there, the decay will be very quick. Give the joystick little taps in the down direction. The decay will gradually get longer.

Moving the joystick to the right and left changes the attack of the note. Move the joystick to the left and hold it there. The attack will be very quick. Give the joystick little taps to the right. The attack will gradually get longer. If the note is short, and the attack is long, the note may not get very loud.

Is there a way to change the attack and decay once the song ends?

No. When the song ends the joystick goes back to doing what the A, Z,] and [keys do. Play the song again and change the decay so that it is very long. When the decay is long, one note will be sounding when the next note begins. Two notes will be sounding at once!

What does the joystick button do?

The button switches between a long and a short sustain. If the sustain is long, the decay begins when the next note begins. If the sustain is short, the decay begins much sooner. Two notes sound at once when the sustain is long. Hold the joystick in the down position so that the decay is very long. Then, switch back and forth between a long and short sustain by pressing the joystick buttons. Just give the button quick taps.

Activities

- Try a fast attack with a fast decay. Try a slow attack with a slow decay. See how many different ways you can combine different attacks, decays, and sustains.
- Can you make SONGWRITER sound like a piano. How about a clarinet? Can you make SONGWRITER sound like any other instruments you have heard?
- Listen to the songs that are on the SONGWRITER disk. Try changing the attack, decay and sustain as the songs are playing. Pick the combination that you think sounds the best for each song.
- Composers often suggest how they think their music should be played. How do you think your songs should be played?
- Set SONGWRITER so that notes have a fast attack, a slow decay and a long sustain. When SONGWRITER is set this way two notes will sound at the same time. Now try writing a song. Listen to what you have written. Do you like how it sounds when notes are close in pitch? How about when notes are far apart? Experiment. Try many different combination of pitches.

Chapter 17: You're on your own.

- Can you create an idea that switches a major mode to a minor mode?
- Try writing a piece and then create an idea key that you can use to move each note up a half step. Try one that moves each note down three half steps. Moving a song to different notes is called transposing.
- Write a short song and save it on the disk. Add the song to itself. Transpose the second part of the song up two half steps. This is called modulating.
- The distance on the scale between two different notes is called an interval. Can you create an idea that moves the note the same interval every time you use it? Create ideas that move different intervals. Try writing a song that uses only those intervals.
- Sometimes songs change key in the middle. Lots of times the fifth note of the old scale becomes the first note of the new scale. Start to write a short song. In the middle of the song move the note so that it is on the fifth note of the scale. Move the scale so that the first note of the scale lines up with the note. Continue your song in the new key.
- Turn off the picture on your T.V. Try to write a song without seeing what it looks like. Turn the T.V. on, but turn off the sound! Try to write a song without hearing it! Turn the sound back on. Listen to what you wrote.
- Write a short simple melody. Save the melody on the disk. Add the melody to the song several times. Make an idea that changes a note into a pattern of notes. For example:
 - A - Plays next note
 - X - Erases note
 - 2 - Sets length to 2
 - SPACE BAR - Records note
 - > - Moves note up a half step
 - 1 - Sets length to 1
 - SPACE BAR - Records note
 - < - Moves note down a half step
 - SPACE BAR - Records note
- Make up different patterns to make changes to each section that you added (they should start with A and X). Make any other changes that you want to the melodies. The original melody is called a theme, and the sections that you change are called variations.

III. Technical Notes.

Erasing songs or musical ideas from the disk.

Songs cannot be erased from a disk while SONGWRITER is running. To erase files from the disk, turn off your ATARI, insert a disk that has DUP on it, and follow instructions in the ATARI manual that came with the disk drive for deleting a file from the disk. Music files are stored on the disk with .SNG added to the end of the name. Musical ideas are stored on the disk with .IDA added to the name.

Capacities (RAM and Disk).

SONGWRITER uses 36K for program storage, miscellaneous storage, graphics, storage of musical ideas, the disk operating system and system buffers. This leaves 12K for music storage. Each note takes 2 bytes of storage. Therefore, there is room for over 6,000 notes in storage.

This program is designed to save a maximum of 48 songs or 48 sets of musical ideas to each disk. However, there is not enough room on a disk to save both 48 songs and 48 sets of musical ideas.

Connecting to a stereo.

Connections can be made between the audio line of the 5-pin Din output socket on the back of the ATARI and an input to a stereo amplifier to tape recorder. To connect to the ATARI you will need a cable with a 5-pin DIN plug. The other end should have a plug that fits your stereo. Most stereos use RCA phono jacks for inputs; the cable you have been provided with has such a jack. Should this jack not fit your stereo, consult the manual which came with your stereo, or your local electronic store for an adaptor which will fit your stereo.

Error messages.

There are two forms of error messages. The simpler message is the short click that you get when you tell SONGWRITER to do something it cannot do. You will also get a click if you are out of memory and you press the SPACE BAR.

You will get a click but SONGWRITER will still do whatever you asked if you run out of space when you are creating a musical idea. The same thing will happen if you press F and S when a song is playing and SONGWRITER cannot go any faster or slower.

The other type of error message is a short message and the phrase PRESS ANY

KEY. This type of error is a disk error. The following is a list of disk errors, what they mean, and how to fix them.

OUT OF MEMORY.

You will get this error if you try to add a song that is longer than the amount of memory remaining in the computer. There is only room for about 6,000 notes in any song.

DISK FULL OF SONGS.

There is only room for 48 song files on the disk. If you get this message you can:

- Save the song on another disk. You can save songs on any normal ATARI formatted disk. You can use the MAKE NEW DISK option (see page 23) to format a new disk.
- Save the song using the name of a song that is already on the disk. Don't use the name of any song you want to keep because it will be replaced by the new song.

DISK FULL OF IDEAS.

There is only room for 48 sets of musical ideas on the disk. See DISK FULL OF SONGS above.

DISK FULL.

There is no more space to save any type of file on the disk. Save the song or musical idea again on another disk. There may still be room on the disk for a shorter song. See DISK FULL OF SONGS above.

DIRECTORY FULL.

There is no room for new files in the directory. See DISK FULL

DRIVE NOT CONNECTED.

Either the disk drive is not turned on or the disk drive cable is not connected.

FILE NOT FOUND.

If you try to load or add a song, or load a musical idea, and change disks in between the time that you get the list of names and the time you press RETURN, you may get this message. The disk drive is used at first to get a list of the songs or musical ideas on the disk. The file is loaded the second time

the disk drive comes on. Try again without changing the disk.

FILE TYPE MISMATCH.

You should not get this error. The only way it might happen is under the same conditions that you would get a FILE NOT FOUND error. Read the explanation above.

I/O ERROR.

I/O stands for input/output. An input/output error is very rare. It may be because:

- The disk is defective.
- The disk drive is defective.

NO BUFFERS AVAILABLE.

This error should not happen. If by any chance it does, press the SYSTEM RESET key.

NOT A SONGWRITER FILE.

This message will appear if you try to load a file that was not created by SONGWRITER.

IV. Glossary Of Musical Terms

All of the musical terms in SONGWRITER are listed alphabetically in this section. We have tried to keep this glossary simple so that you can get a quick idea of what the term in question means without having to go through a lot of technical concepts. You should consult a musical dictionary for broader definitions.

Beat — This is a musical pulse. It divides musical tones into equal units and establishes a pace for the song. For example, a clock ticks to a regular beat.

Chromatic Scale — A scale made up entirely of half steps.

Diatonic Scale — A major or minor scale.

Downbeat — The first beat of a measure.

Fifth — The distance between the first and fifth notes of a scale (seven half steps).

Flat — This is a symbol (\flat) that frequently appears in front of notes. It means to play a note one half step lower than normal (one tone to the left).

Fourth — The distance between the first and fourth notes of a scale (5 halfsteps).

Half Step — This term is applied to the interval between two adjacent tones. On a piano keyboard for instance, a half step is the equivalent of going from a white key to an adjacent black key or vice versa.

Interval — This is simply the distance between two notes. Intervals are normally measured in terms of whole steps and half steps.

Key — The type of scale used in a piece of music. The key determines which notes are to be played as sharps and flats.

Major Scale — A scale having this pattern of steps: whole, whole, half, whole, whole, whole, half. A major scale may begin on any note as long as the specific pattern is continued.

Measure — A length of time in music designated by a specific number of beats.

Measures make it easier to keep track of where you are while playing or writing music.

Metronome — An electrical or spring wound machine that marks the speed of music. Like a clock, it produces so many beats per minute; however, the beats per minute can be made faster or slower to coincide with the speed of a song.

Minor Scale — A scale having this pattern of steps: Whole, Half, Whole, Whole, Half, Whole, Whole. The minor scale is created by beginning the scale three half steps to the left of the related major scale.

Mode — Describes the different scales that are formed from one major scale by starting on a different note.

Motif — A repetitive musical idea used to build a piece of music.

Note — The written representation of a single musical tone.

Octave — The distance between the first note and the eighth note on a scale (12 half steps). The first note and the eighth note have the same letter representation but different pitches.

Pentatonic Scale — A scale with only five instead of seven different tones.

Phrase — A small group of notes that expresses an idea. Phrases can be organized to form larger sections of music.

Pitch — The highness or lowness of sound. A tuba makes sounds that are at a low pitch, while a flute plays at a high pitch.

Rest — A portion of a piece of music that contains no sound. Rests, like notes, may be of different lengths.

Rhythm — A specific length of sounds and silences designed to give songs a defined pattern.

Scale — A series of notes used in a piece of music arranged according to a pattern of rising or descending notes this is the framework for writing a song.

Semitone — Also known as halftone or half step, the interval between any two adjoining notes.

Sharp — A symbol (#) sometimes placed in front of a note in written music. It means to raise (play) the note one half step higher.

Tempo — Refers to the speed of the beat in a particular song.

Third — The distance between the first and third notes of a scale (three or four half steps).

Time Signature — A way of writing the beat pattern of a piece of music. Time signatures are written as two numbers, one above the other, such as 6/8 or 4/4. The top number indicates the number of beats in each measure while the bottom number indicates the type of note that receives one beat.

Tonic — The first note in a scale.

Transpose — This refers to the process of changing the key of a particular song.

Whole Step — An interval containing two half steps.

V. Index of Commands.

Joystick Keys

Notes.

BUTTON	SPACE BAR	- Records the note	13
	0	- Records a rest.....	26
	RETURN	- Plays a note without recording it.....	19
↗	I	- Moves the note up the scale.....	13
↘	I	- Moves the note down the scale.....	13
	>	- Moves the note a half step up the scale	35
	<	- Moves the note a half step down the scale	35

Playing and editing.

↖	Z	- Plays the next note.....	16
↗	A	- Plays the previous note.....	16
	X	- <i>Erases</i> the previous note.....	19
	P	- <i>Plays</i> the song from the beginning	16
	C	- <i>Continues</i> playing the song	16
	F	- Makes the tempo <i>Faster</i>	33
	S	- Makes the tempo <i>Slower</i>	33

Note Lengths.

1 to 9	- Changes the length of the note	26
+	- Adds the next number to the length of the note	26
-	- Subtracts the next number from the length of the note...	26
*	- Multiplies the note length by the next number.....	26
/	- Divides the note length by the next number.....	26
M	- Resets the <i>Measure</i> marker	30

Get.

	G
↗	I
↘	I
BUTTON	RETURN
	ESC

- Gets the list of options.....	22
- Moves to the next option.....	22
- Moves to the previous option.....	22
- Selects the option in the box.....	22
- Returns to the song.....	22

Options.

SAVE SONG
LOAD SONG
ADD SONGS
RETURN TO SONG
SAVE IDEAS
LOAD IDEAS
NAME NOTES
START NEW SONG
MAKE NEW DISK

- Saves the song on the disk.....	22
- Loads a song from the disk	22
- Inserts a song from the disk	22
- Returns to the song.....	22
- Saves musical ideas on the disk.....	51
- Loads musical ideas from the disk	51
- Shows the name of the note on the screen	41
- Erases the song in memory	22
- Formats a new disk	22

Escape.

	ESC - Changes commands.
	F
	S
↖	A
↗	Z
↘	I
↙	I
	>
	<
	X
BUTTON	SPACE BAR
	RETURN
	M

- Jumps to fastest tempo	33
- Jumps to slowest tempo.....	33
- Jumps to the end of the song	19
- Jumps to the beginning of the song	19
- Moves the scale pattern to the right.....	37
- Moves the scale pattern to the left	37
- Moves note up a half step	39
- Moves note down a half step	39
- REMOVES the note from the scale pattern	39
- Adds the note to the scale pattern	39
- Plays note	39
- Sets the measure to the length of the note.....	30

Any other key returns to the music.

Musical Ideas.

L

- *Learn.* SONGWRITER begins remembering keystrokes for an idea. Press any unused key to store that idea 45
- To edit musical ideas 48

K

While song is playing:

- ↵ - Lengthens the decay 52
- ⬆ - Shortens the decay 52
- ⬇ - Shortens the attack..... 52
- ⬇ - Lengthens the attack 52
- BUTTON** - Switches between one and two voices 52

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Your own disk.



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This program is the product of extensive design, testing and evaluation by the authors, leading educators and individuals within the appropriate age levels.

Software from Scarborough takes full advantage of the capabilities of your computer by means of simple command structures, inviting graphics and animation. These programs will progress from simple to complex theories in easy-to-grasp steps that are always entertaining.

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