Songwriter™

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

Apple II Plus/IIe, 48K.

Available for Atari, Commodore 64, IBM-PC.

Scarborough.

Your Songwriter™ disk.

Songwriter™

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

Published by Scarborough Systems, Inc., 25 North Broadway, Tarrytown, New York, 10591 U.S.A.

Credits.

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

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Catalog Utility, by Mitchell Kapor and Todd Agulnick, © Lotus Development
   Corp., Cambridge, Mass.

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Equipment Required.

Autostart ROM.
APPLE II with language card or
APPLE II+ or
APPLE IIe.
One disk drive.
Monitor (color optional).
Printer (optional).

A Note On Learning About Music.

In addition to being a lot of fun, SONGWRITER has been designed so that it offers a rich and rewarding educational experience for 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 theory. 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 APPLE 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 — not to mention the development of problem solving skills and the mathematics of fractions. We believe this is truly interactive education.

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 to use 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 section of the manual offers 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 up to your stereo (with the cable provided in the package!), an explanation of error messages, and a glossary of musical terms found 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!

Table of Contents.

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 advance 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!

If you have an APPLE II+ or an APPLE IIe, just put in your SONGWRITER disk and turn on your APPLE. If your APPLE is already on, type PR#6 and press RETURN after putting in your SONGWRITER disk. SONGWRITER will work in an APPLE III by starting with the APPLE II Emulation Mode disk and then inserting SONGWRITER.

If you have not already done so, put in your SONGWRITER disk and "boot it up."

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 APPLE keyboard to make them easy for you to find. The SPACE BAR and the RETURN keys are the two keys not shown on the screen.

Press the RETURN key. Try it as many times as you want. Press the right arrow key ♦. Try it as many times as you want. Press the Left Arrow key ♦. The left and right arrow 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).
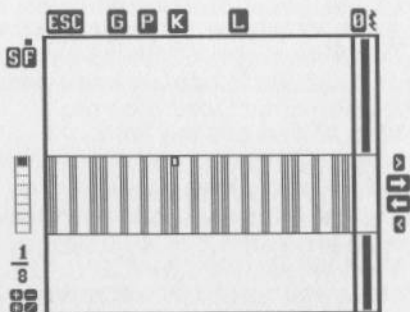
Now the fun begins. Press the SPACE BAR. You have just recorded your first note on SONGWRITER's "piano roll." If you compare the keys depicted on the right side of the screen with those in the starting picture you will see a change. You can now do several new things. But before you do, move the note up the scale one more step (pressing the ♦) 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 N and V keys [▲ and ▼ on the IIe]. 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 (pressing any key will stop a song in the middle and pressing C will *Continue* it) 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.

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 fraction for the note length. And below the fraction are the operations that also can be used to change the note length. Pressing the (+, –, *, /) keys and a number key will perform that operation on the fraction. (You will have to experiment a little with this device 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, however.) 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.

Do the following:
>Move up the scale 2 steps (press the right arrow key ♦ twice) then record the note. (Press the SPACE BAR.)
>Move down the scale 1 step (the left arrow key ◄ once) 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 it three times.
>Record a rest (press the 0 - zero - key).
>Move down the scale 1 step and record it three times.
>Record a rest.
>Move up the scale 1 step and record the note.
>Move up the scale 2 steps and record it two times.

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

Play the song. 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 DOS 3.3 initialized disk to save your song on, then take out the SONGWRITER disk and put in the DOS 3.3 disk in the same drive.

If you do not have a regular DOS 3.3 initialized disk then SONGWRITER can make one for you. Put in a new disk (initializing a disk erases it). Then 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 left and right arrow ◀, ▶ keys. Press the right arrow ▶ key. Each of the options has a longer description under it. Go to the MAKE NEW DISK and press RETURN. Then follow the instructions on the screen.

Once you have a DOS 3.3 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 again.

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 right arrow ▶ 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 arrow keys to move around the catalog. And press RETURN to load the song you choose. Loading a song erases 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 section of the manual takes a group of several commands which make SONGWRITER work and explains them. If you are an "experimentalist," 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**
[REPT] - **Repeats any key when depressed simultaneously**
       [On the APPLE IIe to repeat a key hold it down.]
       (See footnote below.)

A player piano reads the holes in a roll of paper and plays keys on the keyboard. SONGWRITER works the same way. Imagine a long roll of paper; pressing the SPACE BAR causes SONGWRITER to punch a hole in the paper, and roll it up the screen, ready for your next move.
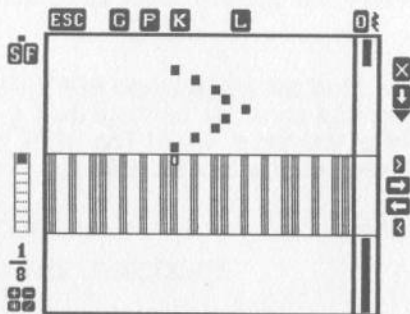
The arrow keys change the <u>pitch</u> (sound) of the note. The ↓ key raises the pitch, and the ↑ key lowers the pitch.

Footnote: Throughout this manual we have used square brackets such as these . . . [ ] . . . to indicate which keys are appropriate for the APPLE IIe as opposed to the APPLE II+. Most keys work the same on both machines.

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 white. You may notice that the stripes look a little like a piano keyboard. The set of stripes is a <u>scale</u>.

The little box in the middle of the scale is a <u>note.</u> You can move the note by pressing the ◆ and ◀ keys. Try both keys. Moving the note changes the pitch of the note.

But 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 both arrow keys and the SPACE BAR.

Why do I hear a clicking sound sometimes?

If you press an arrow key 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.

Is there an easier way to get from one end of the scale to the other?

Yes! If you have an APPLE II+ find the key marked REPT. REPT is short for Repeat. When you press the REPT key and an arrow key together, the note will keep moving until the note gets to the end of the scale. Try it! The REPT key works with all the keys. Try pressing the REPT key and the SPACE BAR.

If you have an APPLE IIe all you have to do to repeat a key is hold it down.

Activities

- Play 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 <u>phrases</u> and <u>melodies</u> 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.

- Play 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 <u>motifs</u>,

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.

| IIe	II+
[▲]	N - Plays the *Next* note (moves music up)
[▼]	V - Plays the *preVious* note (moves music down)
P	P - *Plays* the song from the beginning
C	C - *Continues* playing from where you stopped

Note! The APPLE II+ and IIe use different keys here.

Listening is the most important part of writing music. The N, V, P and C keys allow you to hear what you have written on the imaginary piano roll. The N [or ▲] key plays the music forward one note at time (the roll moves up). The V [or ▼] key plays the music backwards one note at a time (the roll moves down). The P and C keys both play the music without stopping between notes. To stop your song at any point press any key (except F and S). Your screen will look like the one below when you are playing a song. (Notice that the command keys disappear from the screen when the song is playing.)
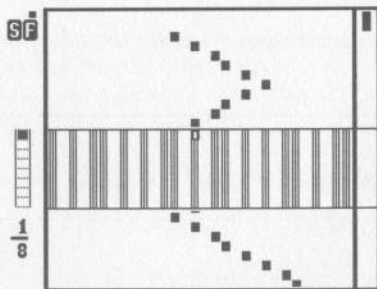

Step-by-step Instructions.

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 N and V [or ⬆ and ⬇] keys both play one note at a time. The N [or ⬆] key moves the music up one note, and the V [or ⬇] key moves the music down one note. Press the V [or ⬇] 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 N [or ⬆] key makes the music move in the other direction. Remember: You can use the REPT key with any key if you are using an APPLE II+. Try it!

Why does the APPLE II+ use N and V?

The APPLE II+ keyboard does not have an up and a down arrow. But, the V key points down and the N key has a little "up" arrow over it. So, to move the music down, you press V which points down. To move the music up you press N which points up. You can also remember it this way:

N plays the *Next* note
V plays the *preVious* note

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 as the arrow keys and the N and V keys. The picture of the V [or ⬇] key does not appear when you are at the beginning of a song and the picture of the N [or ⬆] key does not appear when 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.

At any point in your song you can use:

[RETURN] - To hear a note without recording it
[X] - To erase the previous note
[↑] or [N] - To listen to the next note
[↓] or [V] - To listen to the previous note
[ESC ↓] or [ESC] [V] - Jump back to the beginning
[ESC ↑] or [ESC] [N] - Jump forward to the end

Changing what you have written is called <u>editing</u>. 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 V [or ↓] allows you to jump back to the beginning of your song. ESC N [or ↑] 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 V key to get to the beginning of your song. Then use the N 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 arrow 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

↑	☒	⇨	SPACE BAR
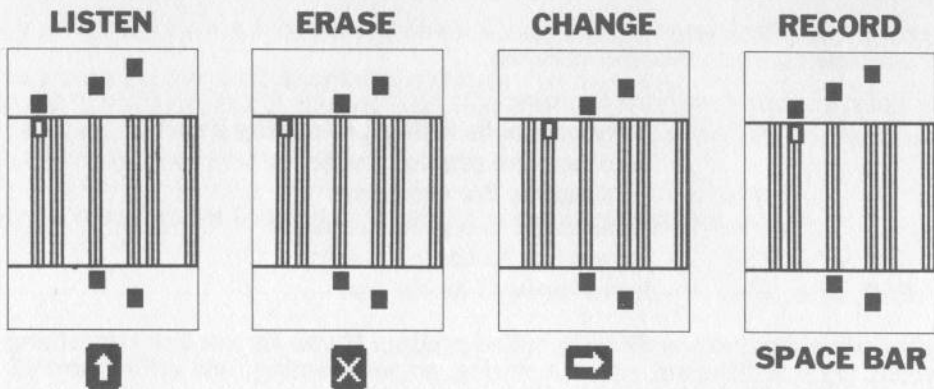
Is there an easy way to jump back to the beginning of a song?

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 V [or ←] 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 N [or →] 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. Try pressing the ESC key twice. See the illustration below for your screen layout.
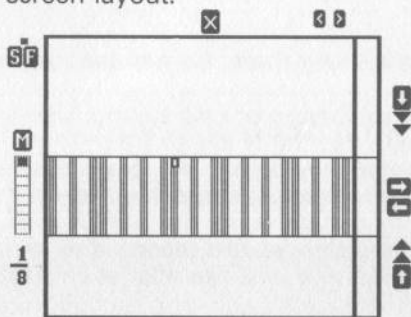
Is there a way to hear a note without recording it?

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.

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

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

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 V [ESC ⬇] to jump to the beginning. Add a note. Press ESC N [ESC ⬆] 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
↓	- Moves to the next choice
↑	- 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 arrow keys ↑, ↓, V, N, [↑, ↓, ←, →] move the choices on the screen. The RETURN key or the SPACE BAR select the choice you want. Five 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 - Initializes a disk in DOS 3.3 so songs may be saved. It also saves a module called **PLAYER** on the disk so that you may transfer your songs to other **BASIC** programs

QUIT PROGRAM - Turns **SONGWRITER** off. Returns to **BASIC**

SAVE SONG allows you to store a copy of the songs 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 DOS 3.3 disk.

Step-by-step Instructions.

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

SAVE SONG	LOAD SONG	ADD SONGS
SAVE YOUR SONG ON 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 arrow keys to move different choices into the box. Try the right arrow ▶. LOAD SONG should move into the box. Try the left arrow ◀. 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.

To save your song on the disk, use the arrow keys to put SAVE SONG in the box and press RETURN. Try it! Next, type the name of your song. The name can be anything you want it to be. If you hear a click then SONGWRITER cannot use the key you pressed. If you make a mistake typing you can use the left arrow ◀ 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 normal DOS 3.3 disk.

What if I don't have any DOS 3.3 disks?

SONGWRITER can format a DOS 3.3 disk for you. Insert a blank disk in the disk drive, press G and use the arrows 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 happens if I press the RESET key?

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

How do you turn SONGWRITER off?

Press G and move the choice QUIT PROGRAM into the box. Press RETURN. You will then see press the Y key to quit. Stop and think, do you want to save your song before you quit? If you press the Y key SONGWRITER will stop and your APPLE will return to BASIC. Everything in the computer will be erased. To start SONGWRITER up again type PR#6 and RETURN.

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

Choose LOAD SONG. (Remember: press G, then use the arrow 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 arrow keys (♦, ♦, N [♠], V [➡]) to move around the list. Then press 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 arrow keys to get the choice 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 turn 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:

MY SONG 1

MY SONG 2

MY SONG 3

etc...

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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 ◀ 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 below 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:

$$\frac{1}{8}$$

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 SONG-WRITER 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 2 pieces, and the note will be half as long. Try it!

Why is the bottom number sixteen?

Because there are now sixteen 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 two. 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 NOTE 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 0 (zero) key do?

The 0 (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 0 (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 0 (zero) key.

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 V [or ESC ◄]). Play a note (using the N or [♠]) 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 N [or ▲] 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 know 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.
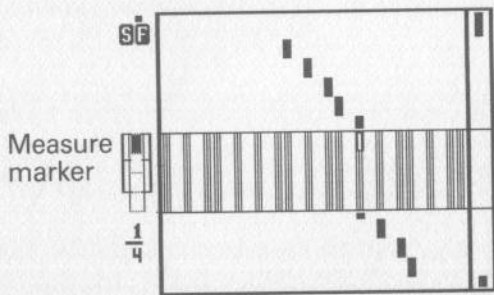
But I don't hear anything different.

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-quarters, 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 the between the louder times. It's 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 1/48 or 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 2/2 or 2/4
    3 beats . . . then try 3/4
    4 beats . . . then try 4/4
    5 beats . . . then try 5/8
    6 beats . . . then try 6/8
    7 beats . . . then try 7/8
    8 beats . . . then try 8/8

- Set the length of the measure to 3/4. Next, set the length of the note to 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 3/4 time? 4/4 time? 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 "What Time Is It?" 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. Remember when composing or playing to 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 <u>Metronome</u>. 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. You can speed up and slow down at two different rates if your APPLE has upper and lower case. Repeating a capital F or S will change the tempo very quickly. Repeating a small f or s makes the tempo only one speed faster or slower as each note plays.

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 N and V [or ▲ and ▼]. ESC N [or ▲] and ESC V [or ▼] 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.

$\boxed{>}$ - Moves the note one half step to the right
$\boxed{<}$ - Moves the note one half step to the left

The black notes in between the notes of the scale are called <u>semitones</u>. 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:
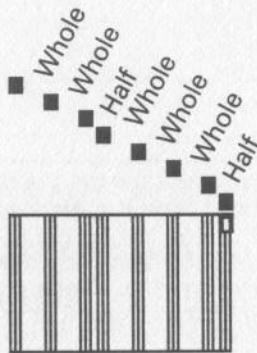
Activities

- 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 arrow keys. Do you like the way it sounds?

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- Now record a note, but this time move two half steps and record a note. The distance between the two half notes is a whole step. Listen to many different whole steps.

- The arrow 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 whole 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 may 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 <u>octave</u>. 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 <u>tonic</u>.) 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 <u>minor scale</u>. 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 ▶ to record a scale that is an octave long. How many different scales can you make. These scales are called <u>modes.</u> Each mode sounds different. Major and minor are just 2 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 arrow key to move the note to the beginning of a major scale (the left side of an orange section or the light note on black and white screens). See the illustration below:
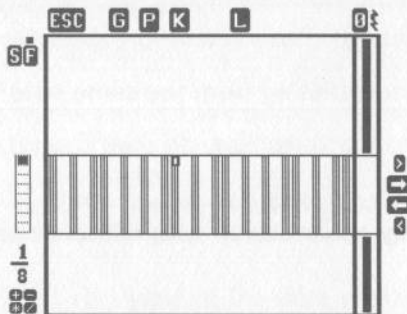
Press the ESC key. Now press the arrow keys and watch the note and the scale.

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 arrow 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 any 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 the REPT key. [Hold the ♦ key down if you have an APPLE IIe.] Try 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.

- 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.

- Load MYSTERY SCALE. Record the notes in this scale in this order: 4, 5, 3, 2, 1 countng from lowest to highest. Try different note lengths. Try different sequences!

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 arrow keys to get **NAME NOTES** in the box. Then press **RETURN**. This turns the display of note names on (or off). See the illustration below:
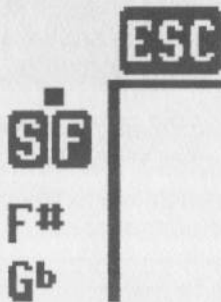
Upper right-hand corner of screen.

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 "♭" added. "♯" is the symbol for sharp and "♭" 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. G♭ means one half-step to the left of a G. F♯ and G♭ are two names for the same note!

Step-by-step Instructions.

Press the G key and then use the arrow keys 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 so that it is in 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.

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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 an 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 arrow keys ◆, ▶, N, V [or ◆, ▶, ▲, ◀] 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 the sections to form a larger song.

Step-by-step Instructions.

Play halfway through a song and stop. Press the G key. Use the arrow keys to move ADD SONGS into the box. Press the RETURN key. Use the arrow 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.

See the screen illustration below and note how the "lightbulb" comes on your screen!

ESC G P K L ☼ Notice the flashing lightbulb.
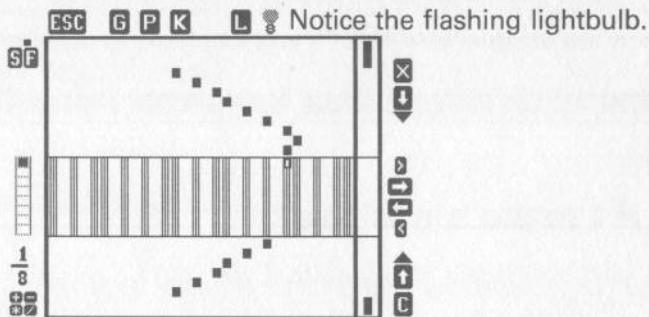
Step-by-step Instructions.

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 a purple light bulb flicker at the top of the screen. The light bulb shows 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 idea light will go off. 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.

Can I use the REPT key with an idea key?

Yes! If you are using any APPLE IIe you just have to hold the key down.

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 arrow 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 A and Z for up and down. Use L to create A and Z 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 N [▲] and X and ends with the SPACE BAR.

    [▲] or N - 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? Remember: you can use the REPT key with an idea key [or hold down the key if you have an APPLE IIe]. This might be very handy if you want to make the same change to many different notes.

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 idea *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] or D - *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 SPACE BAR as _ and the arrow keys as V, ^, }, { on the APPLE IIe; V, ^,], [on the Apple II+.

The black square points to the idea to be edited. To move the black square, move the ♦ and ♦ keys. Try it! Press RETURN to choose the idea you want. You can also choose the musical idea by pressing the key you assign 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 3. 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 D key to *Delete* any or all of the old steps and start the idea over. [If you are using an APPLE IIe press the DELETE key.] If you press a key that SONGWRITER does not understand you will get a click! If you press the wrong key, then press the D [or DELETE] key to *Delete* it. Try adding some commands and then erase them using the D [or DELETE] 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 NINE IDEAS.
> WHICH IDEA KEY DO YOU WANT TO ERASE?
>
> PRESS KEY -OR- USE ARROWS 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.

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- 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 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 the arrow 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.

Ideas, like songs, can only be saved on a regular DOS 3.3 disk. To make such a disk from your 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 file called MYSTERY MOTIF. 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: 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 <u>transposing</u>.

• 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 <u>modulating</u>.

• 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 your T.V. Try to write a song without seeing what it looks like. Turn the T.V. on, but turn the speaker inside the APPLE off! To turn the speaker off press G and select the SPEAKER OFF option. Try to write a song without hearing it! Turn the speaker back on by pressing G and selecting SPEAKER 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:

           N [♠] - 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 N [♠] and X). Make any other changes that you want to the melodies. The original melody is called a <u>theme</u>, 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. Press G and then use the arrow keys to get QUIT PROGRAM. Press RETURN, and then press Y. WARNING: THIS WILL ERASE YOUR SONG IN MEMORY! To delete a song or an idea key follow instructions in the DOS 3.3 manual that came with the disk drive. Music files are stored on the disk with .SONG added to the end of the name. Musical ideas are stored on the disk with .IDEA added to the name. After erasing the file, restart SONGWRITER by typing PR#6.

Capacities (RAM and Disk).

SONGWRITER will run on a 48K APPLE II+, a 48K APPLE II with a language card, an APPLE IIe, or an APPLE III in emulation mode.

SONGWRITER uses 14.5K for program storage, and 2.5K for miscellaneous storage. 8K is used for graphics (title screen). 1.5K is used for storage of musical ideas. 9.5K is used for the disk operating system and 2K is used for system buffers and storage. This leaves 10K for music storage. Each note takes 2 bytes of storage. Therefore, there is room for over 5,000 notes in storage.

The program is designed to save a maximum of 48 songs and nine sets of musical ideas to each disk. If there are long songs, or if other files are stored on a disk, you may run out of room on the disk before having stored 48 songs and 48 sets of musical ideas.

Connecting to a stereo.

Connections can be made between the Cassette Out jack on the back of the APPLE and the input jack of a stereo amplifier or tape recorder. To connect to the APPLE you will need a cable with a miniature phone 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.

SONGWRITER sends a signal to the Cassette Out jack whenever a tone is produced. To turn off the speaker in the APPLE press G and then use the arrow keys to move SPEAKER OFF into the box. Press the RETURN key. Do the same thing to turn the speaker back on if it is off. Try it! This command is useful if you have the APPLE hooked up to a stereo, and you want to use SONGWRITER with headphones.

Adding music to BASIC programs.

When you format a a DOS 3.3 disk using the MAKE NEW DISK Option (see page 23), SONGWRITER puts a machine language program called PLAYER on the new disk. You can use the program to add music to your BASIC program.

To use the PLAYER program in a BASIC program:

1. The first line of your program must be:

PRINT CHR$(4) "MAXFILES 1"

2. Set HIMEM to a value that is no higher than 25088.

3. Load the PLAYER program into memory. The PLAYER program is written in machine language, and it is relocatable, so you can load it anywhere from HIMEM to $6200 (25088 decimal). The PLAYER program will work best if you choose locations that are multiples of $100 (256 decimal). This is an example of a statement that will load the program:

PRINT CHR$(4) "BLOAD PLAYER, A25088"

4. Load the file that contains the music you want in your program. Do not specify a loading address.

PRINT CHR$(4) "BLOAD EXAMPLE.SONG"

5. When you want to hear your song call the location where you loaded the PLAYER program. In this example it would be:

CALL 25088

Here is an example of a program:
```
10 PRINT CHR$(4); "MAXFILES 1"
20 HIMEM:25088
30 PRINT CHR$(4);"BLOAD PLAYER, A25088"
40 INPUT "NAME: ";N$
50 PRINT CHR$(4);"BLOAD";N$;"SONG"
60 CALL 25088
70 GOTO 40
```

NOTE! The PLAYER program will not work if you have a utility program (like PLE) in memory

Printing music.

SONGWRITER can print a list of all the notes in a song. Press G and use the arrow keys to get the option PRINT NOTES. Your printer should be plugged into Slot #1. The list will have the names and duration of the notes. The length of measure and the tempo (standard metronome markings) are also shown.

How SONGWRITER produces sound.

Sound in the APPLE is produced by a small speaker that is connected to a memory address. When you do anything with that memory (read a number or write a number) the speaker moves. If the cone of the speaker is in, it moves out. If the cone is out, it moves in. If you repeat the process over and over again a sound is produced. The waveform that is created is called a square wave. The pitch of the sound depends upon how long you wait in between doing something with the speaker. The longer you wait, the lower the pitch.

The computer can only wait in discrete units called machine cycles. Each machine cycle is about .000001 seconds long (one millionth of a second). The time wait for a note with a frequency of 500 Hz. (Hertz, which means cycles per second) is .001 seconds. This means that the computer waits 1000 machine cycles in between clicks. While the computer is waiting it does graphics on the screen (the notes scroll). At its most sensitive point the human ear can sense a difference in frequency of .3% between two notes (3 Hz. at 1000 Hz.). This means that in order for the computer to be perfectly in tune at 500 Hz., the computer has to wait within three cycles of the optimum number of machine cycles. The routine used in SONGWRITER is accurate to within .15% of the exact frequency. This means that the computer is accurate to within one and a half machine cycles of the optimum number.

The frequencies range from a low of about 130 Hz. to a high of about 700 Hz. The pitches of the notes are tuned to concert "A" (440 Hz.), and are equally tempered. Equal temperment is a system of tuning that maintains an equal ratio between the frequency of any two adjacent notes. Since the ratio of an octave is 2:1 that ratio comes out as:
   2 taken to the 1/12 power (approx. 1.05946)
Concert "A" (440 Hz.) is the higher "A" in the SONGWRITER scale. Middle "C" is the note that shows when you first run the program or start a new song.

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 that 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 beep! followed by 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 5,000 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 DOS 3.3 initialized disk. You can use the MAKE NEW DISK option (see page 23) to initialize 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.

FILE LOCKED.

Locked files cannot be changed while SONGWRITER is running. Use a different name. To unlock a file quit SONGWRITER and follow the instructions for unlocking files in the DOS 3.3 manual. Song files have .SONG added to the name of the song, and musical idea files have .IDEA added to the name of the musical ideas.

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 happens whenever the disk drive cannot read the disk in the drive. This may be because:
- You tried to save a song on the protected SONGWRITER disk.
- There is no disk in the disk drive.
- The disk is in upside down.
- The door to the disk drive is open.
- The disk has not been initialized. (see MAKE NEW DISK, page 23).
- The disk is defective.
- The disk drive is defective.
- You are trying to initialize a disk with a write-protect tab.
- The computer is looking for a printer routine without the SONGWRITER disk in the drive.

If none of the obvious solutions work, try a different disk.

LANGUAGE NOT AVAILABLE.

This error would only occur if you tried to run SONGWRITER on an APPLE that did not have Applesoft in ROM and you do not have a language card.

NO BUFFERS AVAILABLE.

This error should not happen. If by any chance it does, press the RESET button (if you do not hear a beep!, try CTRL-RESET).

WRITE PROTECTED.

This error occurs when the write protect slot on the disk is covered up. Either remove the tape that is covering the slot (consult DOS 3.3 manual), or try using a different disk.

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 (♭) that frequently appears in front of notes. It means to play a note one half step lower (one tone to the left) than normal.

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.

Notes.

Playing and Editing.

Note Lengths.

Get.

† Commands in brackets refer to APPLE IIe.

Options.

Escape.

Any other key returns to the music.

Musical Ideas.

† Commands in brackets refer to APPLE IIe.

Replacement Policy and Disclaimer of All Warranties and Liability.

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- Go from scales and rhythm to more complex musical forms and theory.
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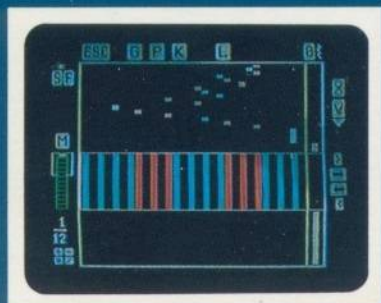
Scarborough.

Options.

SAVE SONG	— Saves the song on the disk.
LOAD SONG	— Loads a song from the disk.
ADD SONGS	— Inserts a song from the disk.
RETURN TO SONG	— Returns to the song.
SAVE IDEAS	— Saves musical ideas on the disk.
LOAD IDEAS	— Loads musical ideas from the disk.
NAME NOTES	— Shows the name of the note on the screen.
SPEAKER OFF	— Turns the speaker in the APPLE off.
START NEW SONG	— Erases the song in memory.
PRINT NOTES	— Prints the notes on a printer.
MAKE NEW DISK	— Initializes a new disk with DOS 3.3.
QUIT PROGRAM	— Returns to Basic.

Escape.

ESC	— Changes commands
F	— Jumps to fastest tempo.
S	— Jumps to slowest tempo.
N [↑]*	— Jumps to the end of the song.
V [↓]	— Jumps to the beginning of the song.
→	— Moves the scale pattern to the right.
←	— Moves the scale pattern to the left.
>	— Moves note up a half step.
<	— Moves note down a half step.
X	— Removes the note from the scale pattern.
SPACE BAR	— Adds the note to the scale pattern.
RETURN	— Plays note.
M	— Sets the Measure to the length of the note.
	Any Other Key Returns to the Music.

Musical Ideas.

L	— *Learn.* SONGWRITER begins remembering keystrokes for a musical idea. Press any unused key to store that idea.
K	— To edit musical ideas.

*Commands in brackets refer to Apple IIe.

Songwriter command summary card for Apple II/II + /IIe.

Notes.

SPACE BAR	— Records the note.
0	— Records a Rest.
RETURN	— Plays a note without recording it.
→	— Moves the note up the scale.
←	— Moves the note down the scale.
>	— Moves the note a half step up the scale.
<	— Moves the note a half step down the scale.

Playing and editing.

N [↑]*	— Plays the *Next* note.
V [↓]	— Plays the *preVious* note.
X	— *Erases* the previous note.
P	— *Plays* the song from the beginning.
C	— *Continues* playing the song.
F	— Makes the tempo *Faster.*
S	— Makes the tempo *Slower.*

Note lengths.

1 to 9	— Changes the length of the note.
+	— Adds the next number to the length of the note.
−	— Subtracts the next number from the length of the note.
*****	— Multiplies the note length by the next number.
/	— Divides the note length by the next number.
M	— Resets the *Measure Marker.*

Get.

|	
G	— *Gets* the list of options.
→	— Moves to the next option.
←	— Moves to the previous option.
RETURN	— Selects the option in the box.
ESC	— Returns to the song.

*Commands in brackets refer to Apple IIe. Turn card over for options.

Songwriter™ Scarborough Systems, Inc. Tarrytown, N.Y. This product uses DOS 3.3 and Applesoft, Copyright 1978, 1980-1981, Apple Computer, Inc.
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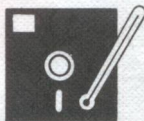
Scarborough.

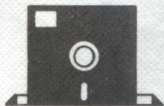# wabash®
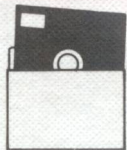
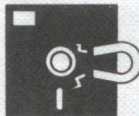Protect
Proteger
Protéger
Schützen

Never
Nunca
Jamais
Nie

No
No
Non
Nein

10 C – 52 C
50 F – 125 F

Insert Carefully
Insertar
Inserer avec soin
Sorgfaltig Einsetzen

Never
Nunca
Jamais
Nie