HAYDEN
COMPUTER
PROGRAM
Tapes

SONGS IN THE KEY OF APPLE

Ira Lopatin

USER'S GUIDE TO

SONGS IN THE KEY OF APPLE

Unlock the world of music — use *Songs in the Key of Apple!*
   Songs in the Key of Apple, written with you in mind, is both enter-
taining and easy to use. Step by step you will learn how to play songs
the program already knows or how to teach it new ones — even if you
have no musical background. For your viewing pleasure, along with the
music multichromatic graphics play on the screen — and with no commer-
cial interruptions.
   Songs in the Key of Apple may also be used as a music teaching aid.
Beginners can quickly learn to compose their own songs, and in the
process learn basic tonal relationships.
   Songs in the Key of Apple has other uses too. Why not have it play
"Happy Birthday" for your friends? With its graphics jumping along
with the music it makes a great program to show off. Or how about a
duet with another *APPLE*? Can you think of any other ideas? Whatever
you decide, have fun.

HARDWARE REQUIREMENTS

One APPLE II Computer with at least 16K of memory. One cassette tape
recorder.

LOADING

This program is written in Integer BASIC. Follow the normal procedure
outlined by *APPLE* for loading programs written in that language from
cassette tape.

PLAYING SONGS IN THE KEY OF APPLE

After the tape has been loaded, type RUN, then hit RETURN. The
computer will reply with the following:

> Would you like me to play:
>
>   1 The Stars and Stripes Forever
>   2 Wild Horsemen
>   3 Fanfare from William Tell Overture
>   4 a song that you have written
>
> or would you like to:
>
>   5 create your own song
>   6 save your own song
>   7 read your song from tape

This is your "menu" of choices. To listen to a song, type a number
from 1 to 4, then press the RETURN key. Now let's explain how the
last three choices work.

HOW TO CREATE YOUR OWN SONG

Maybe your favorite song isn't on the menu. Don't despair, put it there. Type a 5 followed by RETURN and the program will enter the create mode. The program now lets you type in your own songs or songs written by masters other than yourself. The computer now asks:

> DO YOU WANT TO WRITE A NEW SONG?
> Type YES, then hit RETURN.
> NOTE?

The program is now looking for a note. You, the composer, must now choose your first note. Don't be afraid — all composers have had to start somewhere. *Songs in the Key of Apple* has a two-octave range. It plays all notes within this range including sharps, flats, and rests. To enter a note type a note, or a note followed by an F (flat) or S (sharp). A rest is played by typing R.

Examples of some notes are F, GF, 2FS, 2AF, DF, R, 2B, etc.
   After typing a note, hit RETURN. The computer will then ask:

TIME?

The computer is asking how many counts to hold the note. Type a number from 1 (one-sixteenth) to 16 (sixteen-sixteenths), then hit RETURN.
   The computer will then ask for a new note and time and will continue to do so until the song is over. To end the song type in FIN when the word NOTE? is seen. The computer will then play back the song you have just typed in. An example should clear up any questions. Suppose this is the melody you want:

Load the tape. Type RUN, then hit RETURN. The display will show:

> Would you like me to play:
>
> 1 The Stars and Stripes Forever
> 2 Wild Horsemen
> 3 Fanfare from William Tell Overture
> 4 a song that you have written
>
> or would you like to:
>
> 5 create your own song
> 6 save your own song
> 7 read your song from tape

Type 5, then hit RETURN. The display will show:

Would you like to write a new song? YES

Note?	G	Time?	4
Note?	G	Time?	6
Note?	G	Time?	2
Note?	2A	Time?	2
Note?	G	Time?	2
Note?	FS	Time?	2
Note?	G	Time?	2
Note?	E	Time?	4
Note?	G	Time?	3
Note?	G	Time?	1
Note?	G	Time?	6
Note?	FIN		

   The computer will now play this song back to you. Try typing in
this song; you may recognize it. If you want to hear it again, type 4
when you see the menu.
   If instead of writing a new song you just want to add to your old
one, when the computer asks:

Do you want to write a new song?
Type NO, then hit RETURN.

The computer will then ask:

Do you want to add to your song?
Type YES, then hit RETURN.

At this point continue writing the song as you did previously. It will
be added on to whatever you have already written.

HOW TO SAVE YOUR SONG

When the menu is seen, type 6 RETURN. You will be told to start the
tape and hit RETURN. This means that you should have a tape already
loaded in the recorder. Make sure the connecting cord between the
APPLE and the recorder is properly plugged in. Depress the record and
play buttons simultaneously as you would normally do when saving a
program. After the buttons have been depressed, hit the RETURN key on
the *APPLE*. You will soon hear a beep from the *APPLE*, which means that
the *APPLE* has started saving your song. After a short time you will
hear a second beep, indicating that the *APPLE* has saved your song. Stop
the recorder and make sure to mark down somewhere the spot on the tape
where the song is saved. (It is usually easiest to store the song at
the beginning of the tape.) You have just saved your song. Wasn't
that easy?

READING YOUR SONG FROM TAPE

Reading a song from tape assumes that you have already saved a song on
tape. If you haven't, you will become frustrated very quickly. When the
menu is seen, type 7, then hit RETURN. The computer will respond with:

Start tape — hit RETURN.

   First, load the tape on which you have saved your song. Make sure
you rewind the tape to the beginning of the song you have previously
saved. (This is why it's easiest to save songs at the beginning of the

tape.) Check to see that the connecting cord between the *APPLE* and the recorder is plugged in properly. Push the play button, just as you would do to load a tape, then hit RETURN. The song will be read by the computer. After the second beep the song has been read in. Stop the recorder. To play this song type 4, then hit RETURN. There is no limit to the number of songs that can be saved on tape. Why not start your own collection? It should be noted, however, that whenever you read a song from tape it will erase whatever song was either already read in or previously created.

In the event that the tape does not load, the most likely source of error is usually that the output of the *APPLE* is plugged into the input of the recorder. By simply unplugging this cord the problem is generally solved. If any other problems occur, consult the owner's manual.
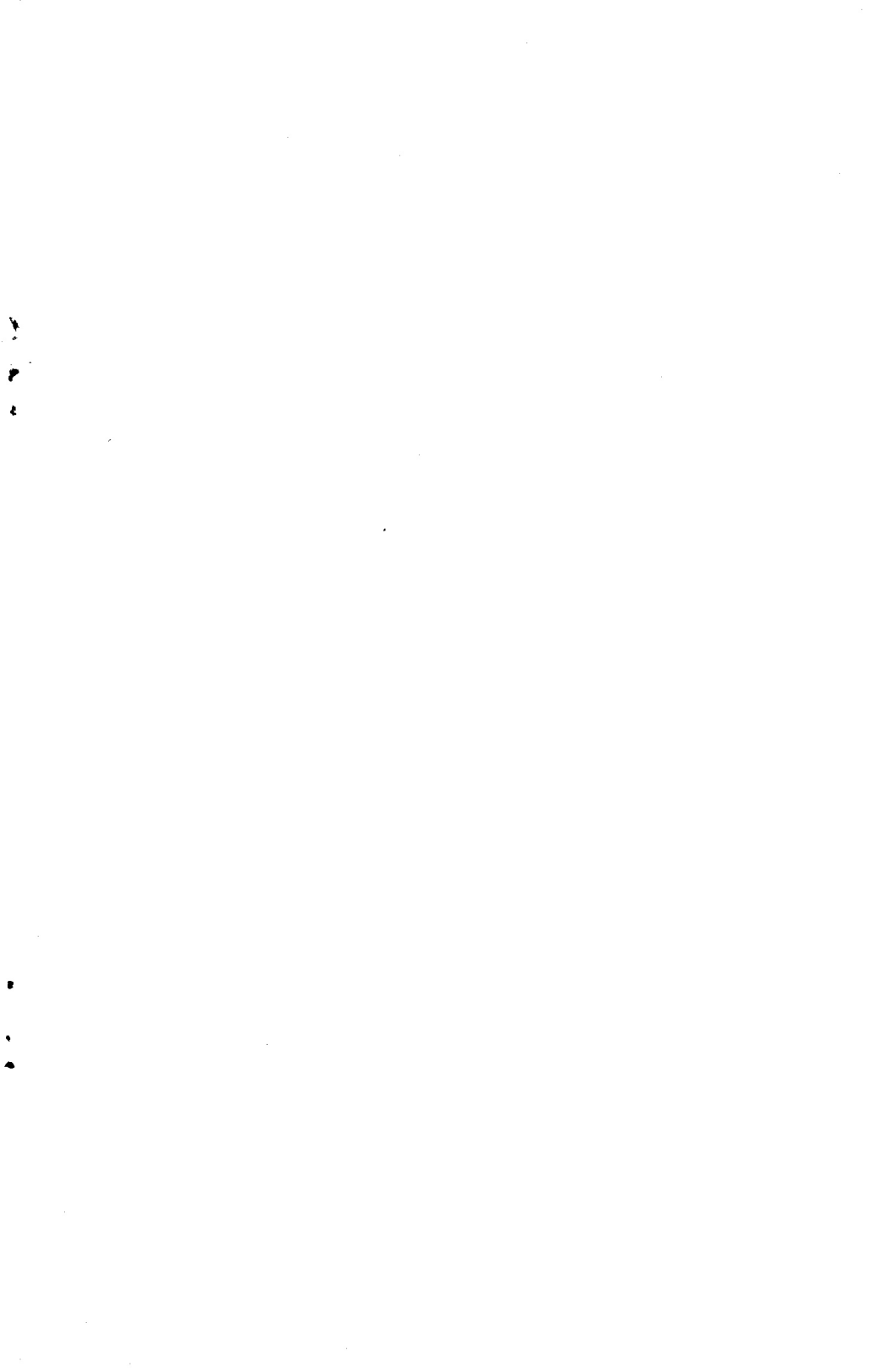
HOW SONGS IN THE KEY OF APPLE MAKE MUSIC

Inside the *APPLE* there is a speaker, which is connected so that it appears as a memory location to the microprocessor — location number —16336, to be exact. What happens is that every time this location is looked at (addressed) it gives a tiny click. If this single click were the best the *APPLE* could do, there would be no music. But, by having this location looked at within a loop, a speaker can be clicked many times within a short period of time. When the note C is typed into the computer, the speaker is made to click at just the right speed so that what the composer hears is the note C. Within the program there are tables that indicate to the computer exactly how many clicks to produce per second to obtain the correct pitch. By having the speaker click for different lengths of time, different counts are obtained. For example, when the program sees a count of 16, it will hold the note 16 times as long as a count of 1.

Questions and Comments

We at Hayden are constantly looking for ways to improve our products. We therefore welcome questions and comments, which should be sent to:

Hayden Book Company, Inc.
50 Essex Street .
Rochelle Park, New Jersey 07662

Attention: Software Editor

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Unlock the world of music with SONGS IN THE KEY OF APPLE. Even without a programming background, you can teach your Apple to play your favorite tunes.

The program offers many choices. You can play The Stars and Stripes Forever, Wild Horsemen, Fanfare from William Tell Overture, or a song you have previously programmed and saved on tape. In addition, you can directly input and play out on command other music that you create. Songs may be written with up to 200 notes, including rests, per musical piece. The program allows for a two-octave range, playing all notes including sharps, flats, and rests. Multicolor graphics accompany all music, even that which you create.

SONGS IN THE KEY OF APPLE is both easy to use and entertaining. You can play "Happy Birthday" for your friends or even a duet with another Apple.

Other Hayden Computer Program Tapes:
GENERAL MATHEMATICS—1 (Apple II, TRS-80 Level II, PET)
GAME PLAYING WITH BASIC, 3 cassettes (Apple II, TRS-80 Level I, Level II, PET)
ENGINEERING MATHEMATICS—1 (Apple II, TRS-80 Level II, PET)
COMPLEX MATHEMATICS (Apple II, TRS-80 Level II, PET)
SARGON II (Apple II, TRS-80 Level II)   .

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Rochelle Park, New Jersey