MUSIC COMPOSER

C= commodore 64

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Are you tone deaf? Do people cringe when you sing or play an instrument? You have just purchased your salvation. Welcome to the wonderful world of electronic music. Absolutely no musical ability or computer background is required to play this cartridge.

This manual will take you step by step through the various methods of music making available in the Music Maker. In the back of the book is a complete list of commands available which you should refer to as you go through the manual to become familiar with their use.

GETTING STARTED
1. Make sure your computer is OFF.
2. Plug your Music Maker cartridge into the expansion port on the right rear of your computer (as viewed from the front).
3. Turn your computer ON. The opening title page for the cartridge will appear on your monitor.
4. Hit any key to get to the main menu page.

SAMPLE SONG
You don't have to be a musician to make music with your Commodore Music Maker! While on the main menu page, just press "1" to hear the sample song.

While the sample song plays, you see the music dancing across the screen! There are three separate voices and each is shown in a different color. The first (voice 1) is in black, voice 2 is in blue and voice 3 is red. You can

change the color of the screen by pressing "f3" and you can make all the notes black by pressing "f5" (press "f5" again to return to the colored notes).

CHOOSING INSTRUMENTS

The Music Maker starts playing all voices with a harpsichordlike sound. There are nine imitation instruments to choose from. While in the main menu, press "0". The screen will display your instrument choices. Try picking calliope (press "1") for all three voices. Then, back in the main menu, press "1" to play the sample again. If you don't want to hear the whole song press "STOP" to end it.

You can even pick a different instrument for each voice. From the main menu, press "0" again. Now try picking calliope (press "1") for voice 1, harpsichord (press "4") for voice 2, and calliope for voice 3 (press "1"). Play the sample again (press "1" from the main menu).

KEYBOARD PIANO

By pressing "2" on the main menu you turn your computer keyboard into a piano keyboard. The "white" keys are the keys from "G" (low C) to " = " (middle C). The "black" keys are the keys in the row above in the appropriate location (for example, C# is the "Y" key, between C ("G") and D ("H")).

To see how it works, try the following short tune.

J H G H J J J H H H J L L J H G H J J J J H H J H G

EDIT AND LISTEN TO SONG

From the main menu press "4" to enter the EDIT mode. In this mode you can easily enter a song using all three voices. The Music Maker will play each note as you enter it, allowing you to even input songs by ear. If you do not want the immediate notes, you can press "f1" (press "f1" again to get them back). You can listen to the whole song and change it. Your final composition can be SAVEd on tape using your DATASSETTE as described later in this manual. Here is an example to try entering. Just type it as it is.

0010GFEEFFE

Then, press "RETURN" and run the song by typing "R" (and hitting "RETURN"). To see what you've entered so far type "L" ("RETURN"). This simple example uses only one voice (voice 1). Each note is entered by typing the letter corresponding to it in the musical scale. A sharp or flat is signaled by typing # (sharp) or $ (flat) before entering the letter of the desired note. To see an example using two voices, try the following.

0010V1EV2#GV1EV2#GV1BV2DV1BV2D

The "V" followed by a number (1, 2, or 3) tells the Music Maker which voice to use for the following notes. The Music Maker will use the stated voice until another one is designated.

Now, get all three voices singing by trying this example (the "R"s in the line below signal a rest):

0010V1RGV2RBV3DV2BV3DV1RGV2RBV3DV2BV3D

When you type in a line with the same number as you put in previously, the old line is overwritten by the new one. You can also "cursur up" (hit the shift CRSR), change

the line, followed by a "RETURN".

  N   Erase the current song
  R   Play the current song, then return to edit
  L   List the current song
STOP   Return to the main menu
  —   Play sample song with special effects
       selected in editor

MUSIC MAKING COMMANDS

Some of these commands must be followed by a number (as indicated in parentheses). Each line of a song created with the editor must have a line number.

A   Play an "A" with the current voice
B   Play a "B" with the current voice
C   Play a "C" with the current voice
D   Play a "D" with the current voice
E   Play an "E" with the current voice
F   Play an "F" with the current voice
G   Play a "G" with the current voice
H   Set note type to half note
I   Set note type to eighth note
O   (1-7) Select octave to play
Q   Set note type to quarter note
R   Play a rest with the current voice
S   Set note type to sixteenth note
T   (0-3) Tempo (0 is slowest, 3 is fastest)
V   (1-3) Select current voice
W   Set note type to whole notes
Z   (0-8) Select a special effect
Next note will be a sharp
$ Next note will be a flat
.   All notes will be dotted until a new note type is
    selected

A specified note type will be used until a new one is given. In addition, music uses "dotted" notes. Following a note type code with a "." will cause it to be treated as a dotted note. All notes will be dotted until a new note type is specified.

EXAMPLE SONG

Now you are ready for a full example song. This example uses everything we've learned so far.

```
0005(1V1O4CEFWGV2QR – EV3CV2EV3CV2EV3C
0010V2EV3CV1R) + CEFHGV2QR – EV3C
0015V1H + EV2QR – EV3CV1H + CV2QR – EV3C
0020V1H + EV2QR – EV3CV1W + DV3QR – – BV2 + F
0025V3 – BV2 + FV3 – BV2 + FV3H – BV2 + F
0030V1RQ + EDH.CV2H – EV3CV2WEV3CV1Q + C
0035HEQGV2 – HEV3CV1Q + GGV2 – HFV3C
0040V1H. + FV2 – WFV3CV1HRQ + EV2 – HFV3CV1
    Q + F
0045HGV2W – EV3CV1H + ECV2 – FV3CV1 + DV2
    – FV3 – B
0050V1W + + CV2 – CV3E
```

This illustration shows you the note names and octave numbers for every note the Music Maker knows.

Now you can type any music you want into the Music Maker. To return to the main menu, hit "RUN-STOP". Your song will still be there, and you can play it from the main menu by pressing "5".

SAVEing and LOADing SONGS

When you are happy with your musical composition, you can SAVE it to tape with your DATASSETTE.

1. Make sure your DATASSETTE is properly connected to the computer.
2. Insert the tape on which you want to record into the DATASSETTE.
3. Get into the Music Maker's main menu mode.
4. Press "7".
5. Press Record and Play on DATASSETTE.

To LOAD a song back from tape:
1. Make sure your DATASSETTE is properly connected to the computer.
2. Insert the tape you want to read into the DATASSETTE.
3. Get into the Music Maker's main menu mode.
4. Press "6".
5. Press Play on DATASSETTE.

From the main menu, you can play the song by pressing "5". The song is available for further editing by pressing "4" (Type "L" and "RETURN" to view song). After you have developed a musical library of great sounding songs, you may want to try hooking your computer up to an external amplifier (as described in your User's Guide) to hear them with better fidelity.

ADVANCED SPECIAL EFFECTS
Special Instrument
From the main menu, press "3" to set special effects. Then, press "1" to set a special instrument. The settings available to you are:

Attack/Decay — Attack is the length of time it takes a note to rise to full volume. Decay is the length of time for the note to fall from peak volume to the Sustain level. Choose an Attack rate (0 is the shortest and 15 is the

longest) multiply it by 16 and add it to a Decay rate (0 to 15). The resulting number (which should be between 0 and 255) is entered as the Attack/Decay setting. (Hit "RETURN" to make selection).

Sustain/Release — Sustain is the level to which the note Decays. (0 is no volume and 15 is full volume). Release is the length of time for the note to fall from Sustain level, multiply it by 16 and add it to a Release rate. The resulting number (between 0 and 255) is entered as the Sustain/Release setting. (Hit "RETURN" to make selection).

Waveform — The waveform selection determines the harmonic structure (tonal quality) of the sound produced by your "instrument". Try the various settings to experiment.

> 1 - White noise
> 2 - Pulse waveform
> 3 - Sawtooth waveform
> 4 - Triangular waveform

After you have chosen the waveform (by hitting "RETURN"), you will automatically return to the special effects menu. To get back to the main menu, hit "RETURN". Once in the main menu, you must hit "0" to choose instruments and select the special instrument for the desired voices. Even if you are already using the special instrument, and have just changed the parameters, you must reselect the special instrument to have the changes take effect.

FILTERING
Filtering a voice allows you to choose which harmonic

frequencies are heard. There are three types of filter available.

Low pass — Attenuates (decreases in volume) the frequencies above the cutoff frequency.

High pass — Attenuates the frequencies below the cutoff frequency.

High pass — Attenuates the frequencies below the cutoff frequency.

Band pass — Attenuates all frequencies except those in the vicinity of the cutoff frequency.

The filters may be used separately, or they may be used in conjunction. For example, the low and high pass may be selected to form a so-called notch reject filter which attenuates the frequencies right around the cutoff.

To choose filtering effects select "Set Effects" from the main menu (press "3"). Then once in the special effects menu choose Filter Controls (press "2").

Cutoff Frequency — Choose a number between 0 and 4095 to determine the frequency the filter uses as cutoff. Hit "RETURN" to register your choice.

Resonance — This number determines the extent to which the frequencies right around cutoff will be accentuated. Choose a number between 0 and 15 and hit "RETURN".

Voices to Filter — For each voice, signal yes (1) or no (0) to turn on or off the filter. To silence a particular voice, you may turn the filter on here, and choose no filter below.

Output - 0 - no filter (blocks voices chosen above)
      1 - low pass filter
      2 - band pass filter
      3 - low and band pass filter
      4 - high pass filter
      5 - low and high pass (notch reject filter)
      6 - band and high pass filter
      7 - low, band and high pass filter

You will return to the special effects menu upon hitting "RETURN". To return to main menu, hit "RETURN" again.

SPECIAL EFFECTS

There are six types of special effects available through the editor. They are:

Vibrato — A rapid variation in pitch, adding a warmth and expressiveness to the voice.

Pulse width modulation — A rapid variation in pulse width of a rectangular wave, varying the harmonic content dynamically.

Ring modulation — Combining the outputs of two voices to create nonharmonic overture structures.

Sync modulation — Combining the outputs of two voices to create new overtones in the primary voice.

Dynamic filter effect — Dynamically changes the filtering applied to any voices being filtered.

The special effects are chosen by inserting "Z" followed

by a number, as shown below. Whenever any special effect is selected, the output from voice 3 is turned off.

0 - Turn off all special effects
1 - Vibrato for voice 1
2 - Vibrato for voice 2
3 - Pulse width modulation for voice 1
4 - Pulse width modulation for voice 2
5 - Ring modulation for voice 1
6 - Sync modulation for voice 1
7 - Dynamic filter effects for any voices using the filters
8 - Sustain for voice 1

The sound provided for each special effect is determined by the special effect settings you choose. To choose these settings get to the special effects menu (press "3" from the main menu) and press "0" to set special effect parameters. For each parameter pick an allowed value, and press "RETURN".

For vibrato, use a Depth less than 6, and a slow rate (less than 6). For Pulse width modulation use a slow rate, but a large depth (7 or 8). The only good way to determine the best settings for you is to experiment.

MUSIC MAKER INSTRUCTION SET

SPECIAL KEYS
f1 key - Turn sound in edit off (and back on)
f3 key - Change the screen color (each press gives new color)
f5 key - Turn note colors to black (and back to colored)

EDIT COMMANDS
These commands must be a single character alone on

the line, and hit "RETURN" to register the change. Then type "L" ("RETURN") to view your new lines.

In the example above, the same series of notes is repeated. This can be done automatically as in this line.

0010(1VIRGV2RBV3DV2BV3D)

The phrase to be repeated is enclosed in parentheses. The number of repeats is inserted following the opening parenthesis.

CHANGING OCTAVES

The previous examples used only one octave. There are two ways to change octaves. The desired octave may be specified by using the command O# where # is the octave desired, as illustrated in this line.

0010V1O4CEFG(3V1O4GV2O3EV3C)

The other method of changing octaves is to move up ("+") or down ("−") from the current octave. The above line could be written:

0010V1 + CEFG(3V1GV2 − O3EV3C +)

USING DIFFERENT TYPES OF NOTES

Up to now we have been using only quarter notes. To really translate a tune for the computer to play, we need to be able to use other types of notes. Each type of note has a code. Here is a list of them:

S - sixteenth note
I - eighth note
Q - quarter note
H - half note
W - whole note

((0-9) Start a repeat phrase. The instructions between
     the parentheses will be repeated from 0 to 9 times.
)   End a repeat phrase. Note: Phrases cannot be nested
+   Go up an octave
−   Go down an octave

KEYBOARD PIANO COMMANDS

G   Plays C
Y   Plays C#
H   Plays D
U   Plays D#
J   Plays E
K   Plays F
O   Plays F#
L   Plays G
P   Plays G#
:   Plays A
@   Plays A#
;   Plays B
=   Plays C (in next octave)

Certain commands are moved to accommodate the
keyboard. The commands valid in this mode are:

Q   Set note type to quarter note
W   Set note type to whole note
E   Set note type to eighth note
A   Set note type to half note
S   Set note type to sixteenth note
Z   (0-8) Set special effect
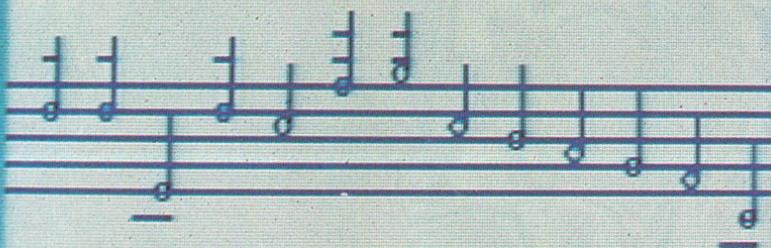V   (1-3) Select voice
+   Octave up
−   Octave down