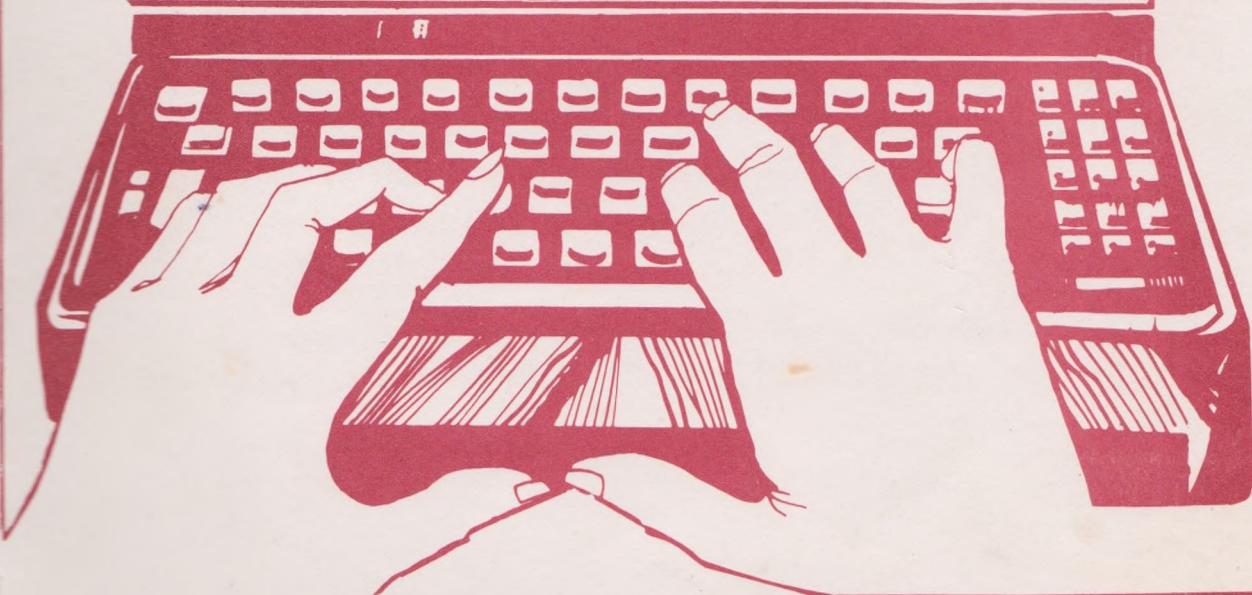# Commodore
64 & 128®
Music
Software Guide

by
Lolita Walker Gilkes

UP Unsinn Publications, Inc.

Commodore
64 & 128®
Music
Software Guide

by

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Edited by

Tiiu Jill Lutter

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CONTENTS

SECTION I

Introduction

SECTION II

C64 and 128 Generated Sound

SECTION III

MIDI (Musical Instrument Digital Interface)

SECTION IV

Appendicies

HOW TO USE THIS MANUAL

The **COMMODORE 64/128 MUSIC SOFTWARE GUIDE** has been prepared to reduce time spent searching for appropriate music software. This listing does not represent every music program written for the Commodore 64/128, but rather those programs reviewed and tested by the author that are considered to be of merit. A music educator and software consultant, Ms. Walker Gilkes has earned degrees from Boston University and the University of Texas.

This software listing has been organized into four general areas:

1. Software requiring no additional materials to run on a Commodore 64 or 128. This section includes programs for music instruction (theory, ear-training, and instrument fingerings); composition and transcription; entertainment and graphics. All sound in these programs is produced by the Commodore's built-in SID Chip synthesizer (SID is an acronym for Sound Interface Device).

2. Piano keyboards that connect to the Commodore 64/128. These products are used exclusively with a Commodore 64/128.

3. Software designed specifically for programming purposes. To use programs from this group one must have some rudimentary programming knowledge.

4. MIDI software and hardware for the C64 and 128. This portion includes programs for performance as well as education, composition, and transcription.

Experienced computer users should go directly to the reviews. Those not familiar with microcomputers and music applications or those who want additional information, please read on...

1

WHY THE COMMODORE 64?

The Commodore 64 has one of the most powerful built-in music synthesizers of all less expensive microcomputers. Each Commodore 64 has a three voice synthesizer chip referred to as the "SID chip" (Sound Interface Device). Additionally, since the Commodore 64 is very popular in the home and education markets, a large amount of software has been and will continue to be written for it. The powerful synthesizer allows music software to be used easily without requiring additional expensive materials.

The SID chip can simultaneously sound three voices. However, this is a limitation for advanced music education applications and performance. For these purposes an external synthesizer (keyboard) can be added to supply additional voices.

All things considered, the Commodore 64 is a powerful microcomputer. If one uses the variety and number of programs in this listing as an indicator, C64 applications for music are considerable. One need only select a program or two to begin embellishing any music curriculum.

WHAT IS THE COMMODORE 128?

The Commodore 128 is a totally different computer from the C64. The 128 has more memory, a better and more advanced typewriter keyboard and the ability to run many more business programs than the C64. A C128 improvement that directly benefits musicians is the 128's more sophisticated SOUND statements which can be used in BASIC programs (for specific information, see COMMODORE POWER/PLAY, August/September, 1985; pages 110-112). However, it has a Commodore 64 emulation mode so that all C64 software will run on the 128. If choosing between these two Commodore microcomputers the Commodore 128 is the way to go.

WHAT DO I NEED TO BEGIN?

The following equipment is essential:

1. Commodore 64 or 128 microcomputer

2. One disk drive

3. Monitor

Optional equipment:

1. Headphones for private listening

2. Keyboard unit

3. MIDI equipped keyboard for MIDI software

4. Dot matrix printer with graphics capability

WILL I NEED A LOT OF TECHNICAL ABILITY?

Not at all! Anyone who can put a record on a turntable and set the volume can readily learn to use every piece of software mentioned in this review. Familiarity with some frequently used terms will be helpful. They are:

BASIC: Acronym for Beginners All Purpose Symbolic Instruction Code. BASIC is a programming language designed for beginning programmers and is stardard in the C64 and C128.

CHIP: An integrated circuit contained on a minute piece of silicon. A chip is attached to a holder with several metal pins that connect it to the microcomputer.

CAI: (Computer Assisted Instruction) A term used to refer to any teaching program that utilizes a computer.

CAIM: (Computer Assisted Instruction for Music) This term indicates programs written strictly for use in music education.

DISK: A type of storage media for electromagnetic information such as computer data.

ENVELOPE: The "shape" of a musical sound, a sound's envelope consists of the attack, decay, sustain, and release parameters.

FILE: A microcomputer stores each group of data (for example characters, numbers, or music) in a file analagous to a folder in a filing cabinet. Each file contains different information.

3

HARD COPY: A printed copy of a document, picture, music score; anything that is printed by computer printer.

HARDWARE: The computer and every piece of equipment connected to it, including monitor, printer, disk drive, joystick, and music keyboard.

INPUT: Data or information entered into a computer. Input is any information that has been, is being, or will be entered in the future.

INTERFACE: A circuit board or box used to connect two or more pieces of equipment, such as a card used to link a C64 and a keyboard.

JOYSTICK: A type of control used to input information in games and some music programs.

LOAD: Transferring data from a storage medium, such as a disk, into the computer's memory. Programs must be loaded before they can be used.

MACHINE LANGUAGE: A programming language using binary numbers.

MEMORY: Storing information inside the computer or onto storage media, e.g. disks, diskettes, cassette tapes.

MENU: A list of available options displayed on the monitor for the program in use at that moment. Menu driven software contains a series of menu screens from which users may select.

MIDI: An acronym for Musical Instrument Digital Interface. MIDI is an attempt to standardize information transfer between digital musical instruments and computers.

OUTPUT: Computer generated information. The image on the monitor, a hard copy of a document, and information stored on a disk are all examples of output.

POKE: A BASIC command used to elicit from sound on the C64.

SAVE: The act of transfering information from a computer's memory onto storage media.

SID CHIP: The Sound Interface Device is the Commodore
64 and 128's built-in synthesizer.

SOFTWARE: The name given to instructions which tell
the computer what to do and when to do it. Micro-
computer software is usually stored on a floppy
diskette (disk).

SOFTWARE FOR MUSIC INSTRUCTION

CAIM (Computer Assisted Instruction for Music) is not new to music education. There are many programs designed to drill, teach and reinforce musical concepts. These programs range from materials for the very young all the way to those for the professional musician. This section is divided into three areas:

- Theory
- Ear-training
- Instrumental fingering drills

These programs can be used at home, in the classroom or as an aid in private instruction. Most programs yield their best results when used as a supplement to a music curriculum. They are not designed to teach music by themselves. Some popular applications include:

- Individual and home use: Select programs which are designed for each specific area. Programs are listed as either elementary or secondary level.

- Classroom use: Many programs reinforce music concepts. Programs may be used for supplemental study. One computer in a classroom can be used as either a class activity or by individual students. If a computer lab is available an entire class can work with these programs.

6

THEORY

The following section contains music theory soft-
ware for both elementary and secondary levels. It is
recommended that one read over all the entries and then
select one to three appropriate programs. The Theory
materials work well when used as a supplement to exist-
ing classes and studies.

ANIMAL NOTES. (elementary) This game helps improve
music reading skills in keyboard five-finger positions.
Instant feed-back elminates guessing and helps the stu-
dent maintain his place in the music. Various animals
that act as notes automatically increase or decrease
speed as correct notes are played. Options include
four instrument sounds, F, G, or A major finger posi-
tion, and score tabulation. The game can be limited to
steps only or expanded to also include skips of up to
thirds, fourths, and fifths. $14.95. Available from
BARNETT.

ARPEGGIO-TUTOR. (secondary) Teaches and drills ma-
jor, minor, diminished, augmented, major seventh, dom-
inant seventh, and diminished seventh arpeggios in a
play-along format. Students select their own tempos.
$21.50. Available from SWAN.

BRAVO! (elementary) An appealing program designed to
aid in learning the fundamentals of music, BRAVO!
incorporates six introductory activities. Upon comple-
tion, a user should be able to read music on the treble
clef and write songs with the program's Mini-Composer.
$8.95. Available from HESWARE.

CAT STEPS INTERVAL TUTORIAL. (elementary) A cat
assists students in a tutorial on simple intervals,
teaching how to count a two note interval on the staff.
A test completes the lesson. A record keeping utility
on disk saves the scores of up to 125 students.
$59.00. Available from WENGER CORPORATION.

CHORD-SPELL. (secondary) Tests a student's ability to spell major, minor, diminished, augmented, major seventh, minor seventh, half-diminished seventh, and fully diminished seventh chords. Final results can be printed. $21.50. Available from SWAN.

CLEF NOTES. (secondary) The purpose of this program is to improve the speed with which a student identifies notes on the treble, alto, tenor, and bass clefs. Correct answers are selected by moving the cursor around a graphics display. To complete a session, ten notes must be identified consecutively. At the end of each session score are stored in a Hall of Fame. $39.95. Available from ELECTRONIC COURSEWARE SYSTEMS, INC.

CROAKOFF KEY SIGNATURES. (late elementary) This program focuses on the proper order of sharps and flats. It reinforces the fact that the order never changes whether identifying or writing a key signature, be it major or minor. It also functions as a drill for naming major and minor key signatures. A joystick allows the user to move sharps and flats onto a Grand Staff and to position a frog over letter names of sharps or flats to identify key signatures. CROKOFF programs can also be used with the MELODIAN KEYBOARD. A JOYSTICK OR MELODIAN KEYBOARD IS REQUIRED. $29.95. Available from MUSOFT.

CROAKOFF NOTE RECOGNITION. (elementary) In this program, the frog reinforces note reading skills on both the keyboard and Grand Staff. The menu contains six games in which students use a joystick to place the frog over the answers. A MELODIAN KEYBOARD may be substituted for a joystick. A JOYSTICK OR THE MELODIAN KEYBOARD IS REQUIRED. $29.95. Available from MUSOFT.

EARLY MUSIC SKILLS. (elementary) The four-part program is designed to introduce students to the basics of note reading and elementary ear training. Each of the four sections of the program includes a tutorial and drill on a different concept: 1) recognition of line and space notes, 2) the correct numbering of the lines and spaces on the staff, 3) identification of notes moving up and down on the staff, and 4) visual recognition of notes both stepping and skipping around the staff. Each unit builds on the previously introduced skills. These easy-to-use lessons provide a thorough grounding in fundamentals of music reading. $29.95. Available from ELECTRONIC COURSEWARE SYSTEMS, INC.

ELEMENTS OF MUSIC. (elementary-secondary) This is an entry-level music notation program for children or adults. Timed or untimed random drills are provided for naming major and minor key signatures, and notes from a staff or keyboard. The complete set includes progress tests for each drill and an instructor file with access to student records. $99.95 (Complete set), NOTE NAMES DRILL only, $39.95, KEYBOARD NOTE DRILL only, $39.95, KEY SIGNATURE DRILL only, $39.95. Available from ELECTRONIC COURSEWARE SYSTEMS, INC.

FACE A DRAGON. (elementary) A game for learning bass clef note names lets users begin with half of the staff and increase the level of difficulty until all notes are learned. $14.95. Available from BARNETT.

KEYBOARD SPEED NOTE READING. (elementary-secondary) A game format drill helps students increase speed in associating notes on the staff with the corresponding notes on the keyboard. An on disk record keeping utility maintains records of up to 125 students. $69.00. Available from WENGER CORPORATION.

KEY-READ. (secondary) Key-Read drills and tests student ability to recognize and write key signatures for major and minor keys. Students' names and final results can be printed. $21.50. Available from SWAN.

KEY SIGNATURE DRILL. (late elementary, secondary) This drill is designed to increase recognition speed of major and minor keys when presented on bass and treble staves. One can set time limits to adjust the difficulty level. A student summary score is presented at the end of each session. $39.95. (See ELEMENTS OF MUSIC). Available from ELECTRONIC COURSEWARE SYSTEMS, INC.

LOLLIPOPS AND LEMONS. (elementary) Teaches bass or treble clef note names by repeating notes within one area of the staff. When a student correctly names a note, she is rewarded with a lollipop. An incorrect response turns the note into a lemon. $14.95. Available from BARNETT.

MUSIC ACHIEVEMENT SERIES. (late elementary, secondary) This is a three level testing package for the beginning, intermediate, and advanced music student. Level 1 evaluates beginning students' knowledge of pitch and rhythmic notation, music terminology, ties, and slurs. Level 2 tests intermediate students' familiarity with pitch and rhythmic notation, terminology,

intervals, and scales. Level 3 evaluates students' knowledge of pitch and rhythmic notation, music terminology, intervals, scales, and chords. Instructor options on each disk permit monitoring student usage and registering student scores. $125.00. Available from ALFRED PUBLISHING COMPANY.

MUSIC BOX I. (elementary) This game tests recognition of 19 elementary music symbols including notes, rests, sharp, flat, and natural signs, and accent marks. $59.00. Available from WENGER CORPORATION.

MUSIC BOX II. (late elementary, secondary) As a continuation of MUSIC BOX I, additional symbols are introduced. This program covers dynamic indications, sixteenth notes and rests, crescendo, tied notes, and slurs. $59.00. Available from WENGER CORPORATION.

MUSIC FLASH CARDS. (secondary) This drill and practice program presents fundamental music material. Each lesson diskette (there are three) includes nine lessons. Disk 1 presents note names, rhythm values, and rhythm value equivalents. Disk 2 includes major scales, minor scales, modal scales, and key signatures. Disk 3 completes the set with lessons on intervals and basic chords. User evaluation is displayed at the end of each lesson. $59.95 (Complete set). Disks may be purchased individually for $29.95. Available from ELECTRONIC COURSEWARE SYSTEMS, INC.

MUSIC MADE EASY. (late elementary-secondary) The tutorial and drill teaches the basics of music in a step-by-step course. Lessons include: The Staff, Clefs, Measures, Time Signatures, Notes and Rests, Ties and Slurs, Repeats and Endings, Flats, Sharps, and Naturals, Scales and Key Signatures, Dynamics, Tempos, Chords, Inversions, Harmonizing, and Creating Melodies. Each lesson is reinforced with drills and quizzes. $29.95. Available from ALFRED PUBLISHING COMPANY.

MUSIC TERMINOLOGY. (secondary) A set of five independent programs for increasing one's knowledge of music terminology. The separate programs include: Glossary of Terms, Categories of Terms, True/False Test, Multiple Choice Test, and Fill-In Questions. Each program randomly selects questions from a pool of over 100 music terms. A summary of terms that need to be reviewed is displayed at the end of each session. $39.95. Available from ELECTRONIC COURSEWARE SYSTEMS, INC.

MUSIC: TERMS AND NOTATION. (late elementary, secondary) Drill and practice identifying musical symbols, enharmonic equivalents, and key signatures with MUSIC: TERMS AND NOTATION. The program also includes drills on music terminology. $29.00. Available from MECC.

MUSICAL COMPUTER ONE AND TWO. (elementary, secondary) This tutorial and drill program is designed to be used during the first two years of music instruction. MUSICAL COMPUTER ONE covers note reading on treble and bass staves, rhythm, keyboard-note correlation, and 60 practice questions. MUSICAL COMPUTER TWO covers notes and rests, sharps and flats, signs and symbols, tempo definitions, and 30 practice questions. $34.95. Available from COMPUTER APPLICATIONS TOMORROW.

MUSICAL STAIRS. (elementary) This is an audio visual game designed to help younger pupils practice identifying intervals on the bass or treble clef. Using a graphic representation of a piano keyboard, intervals ranging from unison to octaves are played, and the student is asked to identify the correct interval. Difficulty level is progressive for each ten item sequence. The program maintains student scores and a Hall of Fame. $29.95. Available from ELECTRONIC COURSEWARE SYSTEMS, INC.

NOTABLE PHANTOM. (elementary) Use a keyboard overlay with this program to learn pitches on the treble staff. Ghosts, spiders, and phantoms present notes to be identified. The program allows children to create simple tunes and save them on disk. $49.95. Available from DESIGNWARE.

NOTE NAME DRILL. (elementary, secondary) A music activity drill designed to increase students' ability to name notes in the treble and bass clefs, this drill can be timed with limits determined by the user. A summary score is presented upon completion of each session. $39.95. (See ELEMENTS OF MUSIC). Available from ELECTRONIC COURSEWARE SYSTEMS, INC.

NOTE-READ. (secondary) Drills and tests students' note reading on the treble, tenor, or bass clef. A note is displayed on the staff and the pitch is sounded. The student is asked to input the name of the note. A help section is available. Students' names and final results can be printed on command. $21.50. Available from SWAN.

11

NOTE SPELLER. (elementary) This tutorial and game is designed to see how quickly one can identify notation that creates musical words, e.g. faced and baggage. The menu offers the options of treble and/or bass staves. Use of ledger lines is optional, and one can select either long or short words for the game. $29.95. Available from ELECTRONIC COURSEWARE SYSTEMS, INC.

PRACTICAL THEORY. (elementary, secondary) A three volume music curriculum serves as both tutorial and drill. The range of concepts covered by the program includes the staff, notation, rhythm, scales, key signatures, tempos, dynamics, chords, and harmonizing melodies. Volumes 1 and 2 would be suitable for beginning and early intermediate music students. Volume 3 includes material on scales and chords, and concludes with a lesson on composing melodies. Each volume can be purchased individually, or as a complete set. The individual volumes are priced at $79.95. The complete set is available for $199.95. Theory workbooks to accompany each volume are available for $2.95 each. See MUSIC ACHIEVEMENT SERIES for information on a testing series designed to complement PRACTICAL THEORY. Available from ALFRED PUBLISHING COMPANY.

RHYTHMMASTER. (elementary, secondary) This program is designed to improve the user's sight reading skills at the keyboard. One measure of music is shown on the monitor and it must be performed on the MELODIAN KEYBOARD or on the Commodore keyboard. Note: This program is much more effective with the MELODIAN KEYBOARD than without. As rhythms are performed correctly, difficulty and tempo increase. $39.95. Available from MELODIAN.

SPIDER EATER. (elementary) Spider Eater is a colorful game that teaches treble clef notation and ear training. Using an overlay on a KOALA PAD, students must press the keyboard note which corresponds to the spider's position on the staff. If the answer is correct, the spider gets "zapped" by the spider eater. If the answer is incorrect, or if the response is too slow, the spider escapes. Other options include a game with invisible notes to help develop perfect or relative pitch. The program is designed for one or two players. A KOALA PAD IS REQUIRED. $29.95. Available from KOALA TECHNOLOGIES.

STAFF NOTE READING. (elementary, secondary) With or without ledger lines, this drill and practice program reinforces note naming skills on treble and/or bass staves. The computer records the average time it takes the student to complete a quiz. The disk includes a record keeping utility for up to 125 students. $69.00. Available from WENGER CORPORATION.

SWEET SIXTEENTHS. (late elementary) This program plays various rhythm patterns focusing on the sixteenth note. The user must match the notated rhythm pattern on the computer screen with the pattern heard. $14.95. Available from BARNETT.

EAR-TRAINING

Ear-training software is extremely popular in music education. The computer can endlessly generate examples and can give the student immediate feedback on correct responses and other criteria. The diverse programs listed below range from very simple melodic recognition to three note chord dictation. It should be noted that software listed in this section is limited to three note chords. If one's needs demand more than three notes, refer to the sections on MIDI.

AURAL SKILLS TRAINER. (secondary) This program is designed to improve students' ability to perceive and identify intervals, basic chords, and seventh chords. The program keeps student records, including diagnostic information, progress reports, and completion scores. All student records can be printed out. $99.95 (complete set). INTERVALS only, $39.95, BASIC CHORDS only, $39.95, SEVENTH CHORDS only, $39.95. Available from ELECTRONIC COURSEWARE SYSTEMS.

EAR CHALLENGER. (elementary-secondary) A computerized version of SIMON (an audio-visual game), EAR CHALLENGER is designed to increase tonal memory using a series of pitches played by the computer. Each pitch is reinforced visually through a color presentation on the display sreen. The game includes seven levels of difficulty determined by the number of pitches presented. $39.95. Available from ELECTRONIC COURSEWARE SYSTEMS.

EARLY MUSIC SKILLS: (elementary) A four-part program designed to introduce students to the basics of note reading and ear-training. See complete description in the Theory listing.

LISTEN! A MUSIC SKILLS PROGRAM. (secondary) LISTEN! is an ear-training program that drills inter- vals, basic chords, and seventh chords. Score keeping offers feedback on knowledge of these concepts. $29.95. Available from ELECTRONIC COURSEWARE SYSTEMS, INC.

MUSIC ACHIEVEMENT SERIES (late elementary, secondary) The third level of this testing/placement package evaluates students' knowledge of pitch and rhythmic notation. See a full description in the Theory section.

14

MUSIC: PITCH. (elementary, secondary) This program drills notation, interval recognition, and comparison of aural and visual melodic patterns in which incorrect notes must be identified. $29.00. Available from MECC.

MUSIC: RHYTHM. (elementary, secondary) Practice the fundamentals of rhythm by completing measures, matching aural and visual patterns, and tapping out patterns which correspond to those on the screen. $29.00. Available from MECC.

MUSIC ROOM. (late elementary, secondary) Simulates the problems a musician has in tuning diverse musical instruments. Six instruments must be tuned to a tuning pitch. The instruments include a piccolo, a violin, a trumpet, a saxophone, a cello, and a tuba. The instruments must be tuned individually, each in its own register. Tuning instructions such as "lengthening" or "shortening" direct hhow to match the pitches of each instrument. $39.95. Available from ELECTRONIC COURSEWARE SYSTEMS, INC.

MUSIC: SCALES AND CHORDS. (late elementary, secondary) Provides practice identifying whole and half steps, triads, seventh chords, major and minor scales, and four modes. $29.00. Available from MECC.

MUSICAL STAIRS. (elementary) This audio-visual music game teaches children to identify intervals. See a full description in the Theory section.

PATTERNS IN RHYTHM. (secondary) An audio-visual program designed to increase rhythmic memory. The user can compose rhythms or take rhythmic dictations that include syncopations, sixteenth notes, and dotted notes. The program includes a student record keeping feature. $39.95. Available from ELECTRONIC COURSEWARE SYSTEMS, INC.

PETER AND THE WOLF. (elementary) Based on Prokofiev's classic tale, this game provides three levels of play - from a simple theme recognition game suitable from young children, to a contest in which Peter and the Wolf are pitted against one another in an effort to capture the other characters. Since theme recognition is the key to winning at all levels, the simple game also serves as an introduction for all players. The package also includes complete documenta-

tion for the game with suggestions for use as a jumping off point for experiments and improvisations in programming music and graphics on the Commodore 64. $39.95. JOYSTICK OPTIONAL. Available from EDUCATIONAL AUDIO VISUALS.

SPIDER EATER. (elementary) A colorful game, Spider Eater helps establish the beginnings of ear-training. See details in the Theory section.

SUPER CHALLENGER. (elementary, secondary) This is an advanced version of EAR CHALLENGER. (see above). This game is based on a twelve note chromatic, eight note major, and eight note minor scales. Each pitch is reinforced visually on the display screen with a color representation of a keyboard. $39.95. Available from ELECTRONIC COURSEWARE SYSTEMS, INC.

SWEET SIXTEENTHS. (late elementary) A rhythm identifying program, Sweet Sixteenths is fully explained in the Theory section above.

TUNE-IT II. (late elementary, secondary) This program is designed to give practice in matching pitch- es. Using a graphic representation of a stringed instrument fingerboard, two pitches are played, with the second one sounding out of tune with the first. The user adjusts the second pitch until it matches the first. The pitchs are closer together for the more difficult exercises. Student scores are recorded. $39.95. Available from ELECTRONIC COURSEWARE SYSTEMS, INC.

TUNE-UP. (late elementary, secondary) Develops intonation skills by sounding two tones in succession. The pupil must determine if the second tone is flat, sharp, or in tune. If the pitches are not in tune, the student adjusts the pitch. Students' names and final results can be printed. $21.50. Available from SWAN.

16

INSTRUMENTAL FINGERING DRILLS

The next group of software contains programs specifically designed to drill and test one's ability to recognize notes and fingerings for various musical instruments. These programs usually work well both individually and in classroom settings.

BASS-FINGERS. (secondary) This program drills and tests student ability to recognize notes on the staff and to finger the instrument correctly to play the note. A note is sounded so that the student can play along. Final scores can be printed. $21.50. Available from SWAN.

BASS-GUITAR-FINGERS. (secondary) See a complete description in BASS-FINGERS above. $21.50. Available from SWAN.

BASSOON-FINGERS. (secondary) See a complete description in BASS-FINGERS above. $21.50. Available from SWAN.

BRASS-FINGERS. (secondary) See a complete description in BASS-FINGERS above. $21.50. Available from SWAN.

CELLO-FINGERS. (secondary) See a complete description of BASS-FINGERS above. $21.50. Available from SWAN.

CHORD-POWER FOR GUITAR. (late elementary, secondary) The program was designed to assist in learning guitar chords. Users enter a chord name and the computer displays and plays it on a twelve fret color graphic fretboard. The program can reproduce over 8000 guitar chords. $39.95. Available from NEW ARTS CO.

CLARINET MASTER. (late elementary, secondary) See the description of TRUMPET MASTER below. $49.95. Available from MASTERSOFT.

CLARINET-FINGERS. (secondary) See the description of BASS-FINGERS above. $21.50. Available from SWAN.

FLUTE-FINGERS. (secondary) See the description of BASS-FINGERS above. $21.50. Available from SWAN.

17

FLUTE MASTER. (late elementary, secondary) See the description of TRUMPET MASTER below. $49.95. Available from MASTERSOFT.

GUITAR MASTER. (late elementary, secondary) A comprehensive program gives instruction on guitar tuning, chords, progressions, picking and strumming, transposing, scales, and fret notes. $49.95. An educational package with three manuals and three disks is available for $85.00. Available from MASTERSOFT.

KEYBOARD SPEED NOTE READING. (elementary, secondary) This game increases students' note to key association speed. See full description in Theory above.

MALLET-PLAY. (secondary) See the description of BASS-FINGERS above. $21.50. Available from SWAN.

MUSIC ROOM. (elementary-secondary) This program helps teach students to tune with background noise. See Ear-training section for details.

OBOE-FINGERS. (secondary) See the description of BASS-FINGERS above. $21.50. Available from SWAN.

RECORDER-FINGERS. (secondary) See the description of BASS-FINGERS above. $21.50. Available from SWAN.

RHYTHMMASTER. (elementary, secondary) This program helps improve keyboard sightreading skills. Music is presented one bar at a time, difficulty and tempo increase when performed correctly. See Theory section for more details.

SAX-FINGERS. (secondary) See the description of BASS-FINGERS above. $21.50. Available from SWAN.

SAXOPHONE MASTER. (late elementary, secondary) See the description of TRUMPET MASTER below. $49.95. Available from MASTERSOFT.

TRANSPOSE. (secondary) Drills and tests instrumentalists on transposing from concert key to the key of their instrument. The name of a concert note is given on the screen while the pitch is sounded. The user is asked to input the name of the transposed note that he would have to play on his instrument in order to match the concert pitch. A help section is available so that students can review rules of transposition. Student names and final results can be printed. $21.50. Available from SWAN.

TROMBONE-SLIDE. (late elementary, secondary) See the description of BASS-FINGERS above. $21.50. Available from SWAN.

TRUMPET FINGERS. (late elementary, secondary) See the description of BASS-FINGERS above. $21.50. Available from SWAN.

TRUMPET MASTER. (late elementary, secondary) A comprehensive program for of trumpet instruction, it includes lessons on tuning, performance exercises, and work on scales and intervals. The speed of the examples can be varied so that students of all abilities can play along with the computer. Tutorial assistance is built into this program as well. An excellent buy! $49.95. Educational packs with three manuals and three disks are available for $85.00. Available from MASTERSOFT.

VIOLA-FINGERS. (secondary) See the description of BASS-FINGERS above. $21.50. Available from SWAN.

VIOLIN-FINGERS. (secondary) See the description of BASS-FINGERS above. $21.50. Available from SWAN.

COMPOSITION AND TRANSCRIPTION

By eliminating the need for the years of study that previously restricted composition and transcription to a few top professionals, microcomputers have provided everyone access to the necessary composing tools. With a microcomputer and software, a musician can compose a song, listen to it, edit it, transpose it and print it out without sophisticated recording equipment and/or live performers. A non-pianist can type in notes and values from the typewriter keyboard and listen to the composition at any speed in any key.

The composition and transcription programs vary in their levels of complexity from those for the amatuer to those for the professional musician. It is imperative to review the write-ups below to select the program which best suits one's own needs as each one is quite different from the rest.

BANK STREET MUSIC WRITER. A tool for three-part composition, editing, and instant playback. Notes are entered, deleted, copied, and inserted with a simple keystroke. Each of the three voices can be controlled separately for volume, articulation, and sound envelope. The program also offers printouts of works composed. $49.95. Available from MINDSCAPE.

BRAVO!. (elementary) This introductory program's Mini-Composer allows students to write their own songs. See a complete description in the Theory section.

CANTUS, THE MUSIC IMPROVISER. This program is designed to be of interest to musicians and non-musicians alike. It creates music randomly, but follows rules which keep the creations musical. A user can direct tempo, harmony, rhythm, range, and tone color, thereby putting his unique fingerprints on the composition. $54.00. Available from ALGO-RHYTHM SOFTWARE.

COCO-NOTES. (early elementary) Assisted by the Jazz Scats of Coco-Note Isle, youngsters catch notes, create melodies and fish for tunes. One can reel in notes and compose millions of melodies, then hear them as often as desired, or even select accompaniments. This is a good program for getting very young children excited about playing music and interested in a variety of accompaniment styles. $12.95. Available from CBS SOFTWARE.

CODE PRO-64. This program is designed to fulfill the need for tutorial and demonstration software for the Commodore 64. Using the program's music generator all of the SID parameters can be set, then notes can be entered and played. The score appears note by note on a staff as it plays. Music can be saved on disk and replayed. $29.95. Available from SYSTEMS MANAGEMENT ASSOCIATES.

CONCERT MASTER. The user is placed in a recording studio with access to 19 different instrument sounds. He can play, record, and overdub three tracks of music, or he can select from popular and classical pieces on the disk for listening or play-along enjoyment. The program can be used with either the computer keyboard or the MELODIAN KEYBOARD. $39.95. Available from MELODIAN.

DANCING FEATS. (elementary) Rock, jazz, and blues are all options of this program that enables users to play and record their own songs. The screen will display the score. The program offers a wide selection of beats, styles and endings. JOYSTICK REQUIRED. $29.95. Available from SOFTSYNC.

DESIGNER'S PENCIL. This program offers a computer "palette" of graphic and music commands. Using these commands one can design sophisticated graphics and compose music in up to three parts. The program is primarily for drawing, and filling one's drawings with color. The music element is probably not useful in a music education setting, but it is an interesting area to explore in the art class or home. JOYSTICK OPTIONAL. Available from ACTIVISION, INC.

INSTA-MUSIC. This learning tool assists in mastering the art and science of composition. The program has four modules: Writer, Player, Synthesizer, and Library. Once a segment of music is completed, the Commodore 64 becomes a powerful one-man band. The score can be matched with a series of preprogrammed musical presets (piano, trumpet, strings, etc.) or customized by the user, employing all features of the SID chip. Available from MICROSCI.

KAWASAKI RHYTHM ROCKER. This creative tool offers a variety of electronic percussion and synthesizer sounds that can be laid down over preprogrammed bass lines. The user can also record original bass lines and coordinate the music with random high-resolution color graphics. RHYTHM ROCKER permits recording and overdubbing of up to 750 notes. $24.95. Available from SIGHT AND SOUND MUSIC SOFTWARE.

21

KAWASAKI SYNTHESIZER. The Synthesizer portion of this program introduces and teaches control of the instrument sounds, waveforms, vibrato, and other special effects on the SID chip. The Editor can be used to create and record compositions on three tracks. $39.95. Available from SIGHT AND SOUND MUSIC SOFTWARE.

KID PRO QUO. (elementary) An illustrated book writing program lets children write text, draw and animate pictures, and compose music to go along with their stories. A library of popular songs is available for use, or children can compose their own tunes. $29.95. Available from SOFTSYNC, INC.

MASTER COMPOSER. This utility program allows users to produce all types of music. By experimenting with different arrangements and instrument sounds, one can create both simple melodies and intricate compositions. The program is interrupt driven, so music created with it may be added to BASIC or machine language programs. Music files may also be linked or relocated. Hard copies can be obtained with graphics-capable dot matrix printers. $39.95. Available from ACCESS SOFTWARE.

MOVIE MUSICAL MADNESS. (elementary) It is a fun program with which youngsters explore designing their own Hollywood productions. As writer, composer, producer, and director of their own movies, children can try their hand at all aspects of production--from casting and set design, to editing and soundtracking. They can make their movies in the city, the jungle, even outer space, and they can choose from an endless combination of props and sets, as well as dozens of musical themes. $12.95. Available from CBS SOFTWARE.

MUSIC CONSTRUCTION SET. This program allows users to construct and play music in up to three voices by manipulating on-screen pictures of notes, rests, clefs, and accidentals. $39.95. Available from ELECTRONIC ARTS.

MUSIC MAESTRO. (elementary) This multi-phased program introduces children to the piano keyboard and various aspects of music notation. In the perform, record, playback mode, notes can be recorded in real time, played back, and saved on disk. Guido's quiz is an assisted drill about the notes of the treble and bass staves and the piano keyboard. The tutor helps users learn to play simple tunes, and the Kaleidoscope mode adds colorful graphics to the music. $34.95. Available from SPRINGBOARD SOFTWARE.

MUSIC PROCESSOR. This software creates an in-home recording studio. Three voice compositions can be written, edited, recorded, and printed. A joystick can be used to change any of the 99 preset instrument and special effects sounds in prerecorded tunes on the disk. $29.95. Available from SIGHT AND SOUND MUSIC SOFTWARE.

MUSIC SHOP. A program for writing, editing, saving, playing, and printing music, MUSIC SHOP uses whole to 32nd notes. Music is displayed on a double or single staff, on treble and/or bass clefs. Users may change keys, time signature, sound quality, and tempo in mid-composition. Music is displayed one page at a time, without scrolling. $44.95. Available from BRODERBUND.

MUSIC STUDIO. This program is designed to facilitate composing, editing, and storing music (of up to three voices) plus lyrics to be played back and printed. It should be noted that the program does not use bar lines so printed scores do not duplicate standard notation. With a Joystick or Koala Pad one can the select from an icon menu to place notes on the treble and bass staves. One can customize all instruments and sounds with the program's Sound Engineering mode. The Music Paintbox permits one to compose without standard notation. A "doodled" composition in this mode can be played back and instantly transformed into music notation. JOYSTICK REQUIRED. Available from ACTIVISION, INC.

MUSIC VIDEO KIT. This two disk set includes a polyphonic synthesizer, an 8-track video recorder, a sprite editor (with over 500 sprite shapes), and a character generator. Users can explore the full range of the Commodore's graphic and music capabilities. $39.95. Available from SIGHT AND SOUND MUSIC SOFTWARE.

MUSICALC 1: SYNTHESIZER & SEQUENCER. MUSICALC 1 designed to build non-musicians' confidence with "no fault music" that is easily accessed and manipulated. One can play along with any of 32 instrument sounds and 32 songs stored on disk may be selected to play along with. Melodies can be composed using the Commodore 64 keyboard as a piano. Novices can compose without knowing music notation, and invent instrument sounds and sound effects in real time. Sounds and scores can be saved on a disk, and scores can be edited in real time. SID chip features allow three separate voices each with envelope generator (ADSR), four basic waveforms (triangle, sawtooth, pulse, and noise), ring modulation

and synchronization, and programmable filter. Link MUSICAL 1 scores to play up to 7,680 notes or syncronize two C64s using MUSICAL 1 with MUSICALC 2. One can also syncronize this program to external drum synthesizers, digital effects devices, etc. External connections will require the C64 interface standard with all COLORTONE PRO KEYBOARDS. $49.95. Available from PROTECTO ENTERPRIZES.

MUSICALC 2: SCOREWRITER. This program prints out compositions from MUSICALC 1 score files in standard notation on screen or paper. The printer must be a Commodore 1525 MPS 801, Epson Graftrax, or Gemini 15 with Cardo interface. $34.95. Available from PROTECTO ENTERPRIZES.

MUSICALC 3: KEYBOARD MAKER. Play music from around the world with these 70 additional scales. Produce keyboard scale files for MUSICALC 1. Develop, transpose, and edit new or existing keyboard scales for the Commodore 64 keyboard. MUSICALC 3 is a strong teaching aid for scales and intervals. With MUSICALC 3 one can program the Commodore 64's keys to sound any note in a seven octave range. Some of the available scales are: Balinese, Javanese, Oriental, Aeolian, Mixolydian, Lydian, Wholetone, and 60 more. This program is used with MUSICALC 1 and COLORTONE PRO KEYBOARD. $34.95. Available from PROTECTO ENTERPRIZES.

MUSICALC PRO SYSTEM. The entire MUSICALC series: MUSICALC 1, MUSICALC 2, MUSICALC 3, TEMPLATE 1, and TEMPLATE 2. $149.95. Available from PROTECTO ENTERPRIZES.

NOTE PRO I. Like NOTE PRO II, this program offers the preset feature for creating and saving tone settings, graphic input and display. NOTE PRO I allows the user to enter music one measure at a time, with the three voices positioned side by side instead of vertically. The program's files are compatible with NOTE PRO II files. $27.95. Available from ELECTRONIC LAB INDUSTRIES.

NOTE PRO II. This program lets users control the pitch of each of the Commodore 64's three voices using an innovative treble clef screen display which displays or inputs an eight measure section of music on each screen. The program's preset facility guides users through error-proof tone setting and saves tone presets for later use. There is enough RAM for 700 measures of music. Tunes can be arranged in any order using the program's arranging facility, which provides 64

individual starting places per composition. The program's machine language music play routine allows music speed of up to 450 notes per second. $49.95. Available from ELECTRONIC LAB INDUSTRIES.

NOTE PRO BRIDGE. This program is a machine language subroutine which can be copied onto a disk or tape, and incorporated into a program being worked on. Files created on NOTE PRO I or II music editor can be read and played on the interrupts, or by looping through a SYS command. The program also opens up new possibilities for creating sound effects. $27.95. Available from ELECTRONIC LAB INDUSTRIES.

ROCK 'N' RHYTHM. (elementary) This program takes the user on a tour of a recording studio. There he can listen to or play along with songs recorded on the program's jukebox, track by track. While brousing through the performance and control rooms the user can create his own songs and edit them, also track by track. Original songs can be placed on the program's jukebox and saved for future use. $26.95. Available from SPINNAKER SOFTWARE.

SONG BUILDER. This program lets users overdub up to three layers of notes, with each layer having its own instrument sound. It has a library of sound combinations for each track. Users can also record one or two layers of notes and play the third track live. This program allows tempo and key to be adjusted. MUSICMATE KEYBOARD by SEQUENTIAL IS REQUIRED. $39.95. Available from SEQUENTIAL.

SONG EDITOR. With the help of SONG EDITOR and a disk of songs recorded using SONG BUILDER, users can view their music on a traditional grand staff. As it is played back, the pitch or value of any note in the arrangement can be changed by striking its replacement on the MUSICMATE KEYBOARD. MUSICMATE KEYBOARD and SONG BUILDER by SEQUENTIAL ARE REQUIRED. $39.95. Available from SEQUENTIAL.

SONG MAKER. (early elementary) Youngsters can create and save their own music by experimenting with a joystick and this cartridge program designed for creative musical play. They can also "arrange" any of the fifteen familiar songs on the cartridge. A variety of animal graphics and sounds may be substituted for the notes in each song thus creating original humorous arrangements of the familiar tunes. Available from FISCHER PRICE.

SONG PRINTER. Songs edited with the SONG EDITOR can be printed with SONG PRINTER in standard bass-treble clef format, complete with time signature, key signatures, rests, and note values. Hard copies are printed two measures across, eight measures to a page. MUSICMATE KEYBOARD and SONG EDITOR by SEQUENTIAL REQUIRED. $39.95. Available from SEQUENTIAL.

SONGWRITER. (elementary) This program lets one compose, edit, and transpose original music and play it back through a computer or home stereo. This program uses an unconventional system of notation resembling a player piano to turn the computer into a "word processor for music." $39.95. Available from SCARBOROUGH SYSTEMS.

SOUND MAKER. Using a four-color graphic display that looks like the front panel of a professional synthesizer with knobs and switches, this program gives users a visual means of changing the tone and volume of sounds with the Commodore function keys. MUSICMATE KEYBOARD by SEQUENTIAL REQUIRED. $39.95. Available from SEQUENTIAL.

SUPER MUSIC BOX. A music composition tool that allows pupils to write and edit scores of up to three voices, hear them played and then save them. Notes are entered with a joystick. The instruction booklet includes a tutorial on notation and key signatures. JOYSTICK REQUIRED. Available from TG PRODUCTS, INC.

SYNTHESOUND 64. This program gives the user access to all features of the SID music chip, including the voltage controlled oscillators, envelope generators, and voltage controlled filters and amplifiers. The program also makes it possible to generate sounds for special effects. Available from HESWARE.

SYNTHY-64. Designed so users can compose and play musical scores with ease, with SYNTHY-64 music can be entered using familiar notation instead of Poke statements. Volume and tempo may be controlled and programs can be saved on either disk or cassette for replaying at a later time. $27.95. Available from ABACUS SOFTWARE.

TEMPLATE 1: AFRICAN/LATIN RHYTHMS. Additional instrument sounds and rhythms for MUSICALC 1. (See MUSICALC 1 for further information.) $24.95. Available from PROTECTO ENTERPRIZES.

TEMPLATE 2: NEW WAVE AND ROCK. TEMPLATE 2 provides additional instrument sounds and rhythms for MUSICALC 1. (See MUSICALC 1 for further information.) $24.95. Available from PROTECTO ENTERPRIZES.

TIME PROCESSOR. Emmy award winning software assists composers in developing scores for motion pictures, television, or any creative endeavor where the music must synchronize with another medium. The software uses polychromatic displays to track real-time occurances of a great variety of musical events, given any tempo or metric value. TIME PROCESSOR generates both visual cuing and audible variable click tracks with greater accuracy than traditional methods. Synthesizers or drum machines may also be driven with this software. $595.00. Available from AURICLE CONTROL SYSTEMS.

VOICE MASTER. A speech system that allows the user to record words, sounds, or complete phrases as digital information. The information may be saved to disk for playback or incorporation into BASIC programs. The VOICE MASTER module is required only for speech recording or voice recognition activities; speech may be played back without using the hardware module. Additionally, the VOICE MASTER has musical capabilities which are accessed through the voice recognition facilities of the system. A Voice Harp mode allows the user to hum or whistle a melody while the software converts it into musical output--the program will print out the melody in standard musical notation on a line printer. $89.95. Available from COVOX, INC.

ENTERTAINMENT AND GRAPHICS

The software in this group was written either primarily for fun or offer creative interaction with high resolution graphics. Many of these programs are listed elsewhere and are designated as such.

3001 SOUND ODYSSEY. This program explores attack, decay, sustain, and release (envelopes); as well as waveforms, ring modulations, and filters. The program demonstrates how they work together in sound production. Users can explore the program to create their own sound effects or to experiment with any of the hundreds of the preset sounds contained on the disk. $24.95. Available from SIGHT AND SOUND MUSIC SOFTWARE.

CANTUS, THE MUSIC IMPROVISOR. The program creates random music but it allows the user to direct tempo, rhythm, and other aspects making it of interest to non-musicians and musicians. See details in the Composition/Transcription section.

DESIGNER'S PENCIL. A palette of commands lets one design sophisticated color graphics and simple composi-tions. For a full description see the Composition and Transcritpion section.

KAWASAKI RHYTHM ROCKER. With the RHYTHM ROCKER one can coordinate high resolution graphics with prepro-grammed and original bass lines. See a full descrip-tion in the Composition and Transcripton section.

KID PRO QUO. A book writing program lets children compose music to go along with their original stories which they write, illustrate and animate. See the Composition/Tran- scription section.

MOVIE MUSICAL MADNESS. A fun program with which young-sters can explore designing their own Hollywood productions. As writer, composer, producer, and director of their own movies, children can try their hand at all aspects of pro- duction -- from casting and set designing to editing and sound tracking. They can make their movies in the city, jungle, or even outer space, and can choose from an endless combination of props and sets, as well as dozens of musical themes. $12.95 Available from CBS SOFTWARE.

MUSIC MAESTRO. The program's Kalidescope mode adds colorful graphics to one's original composition. See details in the Composition/Transcripition section.

MUSIC VIDEO KIT. By employing this program's eight track video recorder, sprite editor, and character generator, users can access the full range of the Commodore's graphic and music capabilities. A full description is in the Composition and Transcription section.

PETER AND THE WOLF. This game includes instructions and suggestions for music and graphics improvisations. A full description of this interesting game is in the Ear-Training section.

SONG MAKER. Animal graphics and sounds can be substituted into familiar tunes creating humorous arrangements. See details in the Composition and Transcription section.

WEB DIMENSION. A colorful, evolutionary fantasy game with appealing musical "rewards", this program will be fascinating for those attracted by video games. JOYSTICK REQUIRED. Available from ACTIVISION, INC.

29

KEYBOARD SYSTEMS AND OTHER PERIPHERALS

The music keyboards and overlays listed below pro-
vide a relatively inexpensive way to link a keyboard
instrument to the Commodore. These keyboards and over-
lays are restrictive in that the three note polyphonic
sound production is somewhat limiting (only three notes
may be played at one time). Adding one of the keyboard
systems below is a logical second step after using some
of the software previously described.

COLORTONE KEYBOARD. The COLORTONE is a touch sen-
sitive keyboard of two octaves (25 keys). Its built-in
cable attaches to the joystick port. It comes with a
package that includes software for immediate play and
educational exploration. Users may: choose different
instrument sounds, play along with a preprogrammed
song, create original music, play "no fault" tunes that
never hit sour notes, save their masterpieces, or play
back any music created. Use with the MUSICALC SERIES.
$79.95. Available from PROTECTO ENTERPRIZES.

COLORTONE PRO KEYBOARD. A 37 key (three octave) piano
keyboard with two user programmable membrane strips
connects easily to the C64 or 128. It also has a sync
connector for drum and special effects machines. The
accompanying software package includes a performance
oriented synthesizer program that graphically
represents conventional synthesizer control panels with
switches and sliders. Monophonic or three voiced
polyphonic composition is available. Compatible with
MUSICALC 1 and MUSICALC 3. $429.00. Available from
PROTECTO ENTERPRIZES.

INCREDIBLE MUSIC KEYBOARD. This miniature keyboard
overlay fits above the top row of keys on the Commodore
64. It can be used with the various programs from
SIGHT AND SOUND MUSIC SOFTWARE. $29.95. Available
from SIGHT AND SOUND MUSIC SOFTWARE.

KOALA PAD. The small graphics tablet is used for
SPIDER EATER and various art activities. Offers an
alternative to responding via the Commodore keyboard.
$129.95. Available from KOALA TECHNOLOGIES.

MELODIAN KEYBOARD. This three octave keyboard looks like a portable organ. It plugs into the Commodore 64 and uses the SID chip to reproduce 16 different instrument sounds. Musical notes are displayed on the computer's video screen when played on the keyboard. Recordings made on the keyboard can be stored on disk and played back. The system has a built-in metronome to help keep time. Educational software designed for this keyboard teaches the essentials of melody and rhythm (RHYTHMMASTER and CONCERTMASTER). $149.95. Available from MELODIAN.

MUSIC PORT. This 32 note keyboard permits composition and arrangement of songs. One can record multi-track pieces of up to ten minutes in length. The software provides dozens of preset instrument sounds as well as full control of the ADSR and waveform controls. MUSIC PORT also gives access to independent filter, oscillation, and modulation adjustments on all three tracks. $149.95. Available from TECH SKETCH.

MUSICMATE KEYBOARD. A two and one-half octave, three note polyphonic keyboard has an accompanying disk with a variety of instrument sounds. Up to ten minutes of music can be played and recorded. The MUSICMATE KEYBOARD plugs into the joystick port of the Commodore 64. $99.00. Available from SEQUENTIAL CIRCUITS.

PROGRAMMING UTILITIES

As mentioned above, the C64 and 128 have a power-
ful built-in synthesizer (SID chip). The synthesizer
can be accessed and used when programming. There are
many books on this subject, some of which are listed in
Appendix B. The programs below are designed to help
programmers utilize the potential and capabilities of
the SID chip.

MAPLE. A Music Applications Programming Language Ex-
tension utility program simplifies programming sound
and music notation on the Commodore. The program is an
extension of the computer's resident BASIC vocabulary
and could be a considerable timesaver when creating
music instruction and tutorial programs. $99.95.
Available from ELECTRONIC COURSEWARE SYSTEMS, INC.

MASTER COMPOSER. This music utility allows one to
produce all types of music. One can create simple mel-
odies or intricate compositions by experimenting with
different arrangements and instrument sounds. The pro-
gram is interrupt driven, so music created with it may
be added to BASIC or machine language programs. Music
files may also be linked or relocated. Hard copies are
available with a graphics-capable dot matrix printer.
$39.95. Available from ACCESS SOFTWARE.

MUSICALC 3: KEYBOARD MAKER. With MUSICALC 3 one can
program the Commodore's keys to sound any note in a
seven octave range in a variety of scales: Balinese,
Oriental, Mixolydian, etc. See details in the Compo-
sition/Transcription section.

NOTE PRO BRIDGE. This is a machine language subrou-
tine which can be copied onto disk or cassette and in-
corporated into programs. It provides access to files
made with NOTE PRO I or II. See the Composition and
Transcription section for details.

PETER AND THE WOLF. This innovative game also has
options for experiments in programming music and graph-
ics. See the Ear-Training section.

SYNTHESOUND 64. This program provides access to all aspects to the SID chip. See Composition/Transcription listing for details.

VOICE MASTER. Words, sounds, and phrases are digitally recorded with VOICE MASTER and may be incorporated into BASIC programs. For a complete description see the Composition/Transcription listing.

AN INTRODUCTION TO MIDI

MIDI is an acronym for Musical Instrument Digital Interface. MIDI is a universal computer language built directly into many programmable electronic keyboards, digital drum machines, sequencers, and other instruments. MIDI was developed to increase compatibility between all electronic equipment in order to extend the capabilities available to musicians and to slow the rapid rate of hardware obsolesence.

Any information generated by a MIDI keyboard can be utilized by the Commodore 64 & 128. However, to translate the information, a MIDI INTERFACE is required. Several interfaces are presently available and their manufacturers are listed in Appendix D.

The most important part of MIDI is its software. There are programs designed for: performance, recording/composition, voice programming storage, transcription, and education. Many of these programs are listed in the following section.

ADVANTAGES OF A MIDI SYSTEM

- Keyboards can play more than three voices at a time.

- There is a growing MIDI software base. Many companies are developing packages for performance, composition, and education.

- Compatible MIDI instruments can be added to the basic system.

DISADVANTAGES OF A MIDI SYSTEM

- MIDI Keyboards, interfaces, and software can expensive.

- Although instruments are equipped with MIDI, all of their functions may not be totally compatible.

- All MIDI interfaces do not run all MIDI
software. It is important to select an
interface which supports the software de-
sired.

WHAT IS NEEDED TO START WITH MIDI?

- A microcomputer with monitor and disk
drive.

- MIDI interface. It is recommended to sel-
ect the software first as this will dictate
which interface to purchase.

- MIDI keyboard. There is a large variety of
keyboards from companies including Yamaha,
Roland, and Korg.

- MIDI software packages.

35

MIDI EDUCATION SOFTWARE

MIDI software for education works just like other education software with one major difference: a MIDI keyboard and interface is required. This is an advantage as more than three voices can be played.

KEYBOARD BLUES -- MIDI. (late elementary, secondary) Students can use this program to practice playing along with and listening to twelve bar blues. A drill and practice section tests students' knowledge of simple blues chords. Pupils can also compose original blues solos with computer accompaniment. $79.95. Available from ELECTRONIC COURSEWARE SYSTEMS, INC.

KEYBOARD CHORDS -- MIDI. (secondary) This program is a tutorial and drill on chord types. It features a tutorial on major, minor, diminished, and augmented chords. Drills are on chord spelling and the keyboard. It also includes a test. The user can elect to work on chords in either root or inverted positions. The program also features student evaluation and record keeping. $79.95. Available from ELECTRONIC COURSEWARE SYSTEMS, INC.

KEYBOARD INTERVALS -- MIDI. (secondary) Designed to assist students in playing major, minor, augmented, and diminished intervals, the program is composed of a tutorial, an interval spelling drill, and a test. To effectively use the program, one must be able to read music and play a keyboard. Record keeping and student evaluation are also program features. $79.95. Available from ELECTRONIC COURSEWARE SYSTEMS, INC.

KEYBOARD JAZZ HARMONIES -- MIDI. (secondary) This program teaches chord symbols, seventh chord recognition, and chord spelling. To use the lesson, knowledge of traditional harmonies and interval is required. The program consists of a tutorial, four drills with quizzes, and a final test. In the final, the computer plays a small portion of a jazz tune and the student must respond with the chord symbol for each chord change and spell the chord with the keyboard. $79.95. Available from ELECTRONIC COURSEWARE SYSTEMS, INC.

36

KEYBOARD KAPERS -- MIDI. (elementary, secondary) KEYBOARD KAPERS consists of three separate piano games. KEYBOARD BOARD CLUES displays a note on the grand staff that must be played on the keyboard; ?MYSTERY? NOTES is an ear-training drill; KWIK KEYS is a timed game requiring that notes presented on the computer screen be played back as quickly as possible. $39.95. Available from ELECTRONIC COURSEWARE SYSTEMS, INC.

KEYBOARD NOTE DRILL -- MIDI. This program is designed to increase note identification speed. Notes are randomly placed on the treble and bass staves and corresponding notes are played on the piano keyboard. $39.95. Available from ELECTRONIC COURSEWARE SYSTEMS, INC.

SUPER CHALLENGER -- MIDI. The game increases tonal memory by playing different series of pitches. Games are based on a 12-note chromatic scale, a major scale, and a minor scale. $39.95. Available from ELECTRONIC COURSEWARE SYSTEMS, INC.

37

SEQUENCERS (COMPOSITION AND TRANSCRIPTION)

Sequencers convert a microcomputer into a multi-track digital recorder. A sequencer provides functions similiar to those mentioned in the Composition and Transcription section along with some advantageous additions mentioned below.

JMS MIDI 12-TRACK RECORDING SYSTEM. With this program one can record twelve polyphonic tracks in real time while simultaneously monitoring all prerecorded tracks. Mistakes can be automatically corrected without losing the original. Tempo is adjustable from 40-200 beats per minute. The program can store approximately 7,600 notes. Available from CHERRY LANE TECHNOLOGIES.

KEYBOARD CONTROLLED SEQUENCER. This powerful 16 track sequencer has full overdub and edit capabilities, including dynamics and expression of individual notes. Composing options offer: flexible copy, merge, move, delete, transpose, invert, autocorrection, time reverse, independent looping of sequence tracks, and multiple song storage. Flexible structuring of sequences saves time and computer memory. Real time transpose and other control options to allow one to interact with sequences as they are being played back. $125.00. Available from DR. T'S MUSIC SOFTWARE.

KORG 4-TRACK SEQUENCER PLUS. This package is a digital equivalant of a multitrack tape recorder. Tracks may be recorded individually, and single tracks may be edited without affecting others. Since the program is digital, tempos can be changed without affecting pitch. Track changes can be stored with the pitch and duration data and executed during the playing of a tune. $99.50. The 8-track sequenced is priced at $149.95. Available from KORG.

MIDI/4 PLUS. A four track recording program featuring autocorrect, punch in/out, fast forward, rewind, sequence chaining, unlimited overdubs, real time editing, and more. Requires a Passport or compatible MIDI interface. $99.95. Available from PASSPORT.

MIDI/8 PLUS. This eight track sequencer has all the characteristics of MIDI/4 PLUS with four additional tracks. Requires a Passport or compatible MIDI interface. $149.95. Available from PASSPORT.

MIDI SEQUENCER. Stores up to 16 sequences in memory at any given time. Each sequence can have up to 16 polyphonic tracks. Tracks can be entered in real time or step entered one note at a time for error correction. Program features are: punch in/out, solo, mute, transposition, copy, and MIDI channel assign. It has an 8,500 unique event memory, plus unlimited song storage on disk. Songs can be arranged by placing sequences in the desired order in a 64 position sequence table. Requires Musicdata MIDI interface. $150.00. Available from MUSICDATA, Inc.

MUSE SEQUENCER/EDITOR. A 6,000 note storage eight track recorder offers overdubbing and full editing by measure. Also allows one to insert, delete, move, or copy any part of a track by measure. Individual tracks can be transposed. $150.00. Requires a Roland MPU-401 MIDI interface. Available from ROLAND CORPORATION.

MUSIC SHOP - MIDI. The MIDI version of the popular Broderbund MUSIC SHOP program lets one create, store, and edit compositions. One can also print sheet music in piano, single staff, or quartet formats. The program automatically "turns" to the next page of music, eliminating scrolling. Eight voices can be assigned to each of four different MIDI channels or keyboards with Passport's MIDI interface card. The program's Macintosh style user interface has pull-down menus and windows controlled with a joystick and MIDI keyboard. Editing is easy: just cut, paste, or copy sections of the music. Compositions can be up to 20 pages long. $99.95. Requires the Passport MIDI interface, a joystick, and a dot matrix printer with graphics interface. Available from PASSPORT.

STUDIO I. Vast amounts of data can be recorded as sequences and then arranged with this program's numerous editing features, including auto punch, live punch, and step mode punch in/out to name a few. The STUDIO has auto correction as well as bouncing, appending, and transposing of tracks and sequences with no degradation. $225.95. Available from SYNTECH CORPORATION.

VOICE STORAGE AND VOICE EDITING

A microcomputer and appropriate software can simplify the processes of programming, storing, and retrieving voice (patch) data.

CZ PATCH LIBRARIAN. A programming tool for CZ-101, CZ-1000, and CZ-5000 synthesizers provides disk storage, printing, naming, and listing of CZ patch programs. It will display all patch parameters on a single screen to simplify editing individual parameters. It also has commands for envelope copying, level scaling, rate scaling, and line copying. $65.00. Available from DR. T'S MUSIC SOFTWARE.

CZ RIDER. Casio CZ synthesizer voice editor for popular MIDI interfaces. $149.00. Available from CHERRY LANE TECHNOLOGIES.

DX7 PATCH LIBRARIAN. This programming tool for the DX7 and TX expansion modules has screen display, edit- ing, listing, printing, and disk storage for DX7 patch- es. It will simultaneously display all operator parameters for editing, with a second screen for other parameters. $75.00. Available from DR. T'S MUSIC SOFTWARE.

DX-TX MASTER. Allows for easy editing and storage of voices from the DX7 or TX module to disk and vice versa. The user can download from the TX and store the MIDI channel and voice in order to direct it to the preferred keyboard or module. Voices can be moved singularly or in groups of 32. $149.95. Available from SYNTECH CORPORATION.

MIDI SOUNDFILER. Stores programs from popular MIDI instruments to disk. This program currently supports Yamaha DX7, Roland JX-8P, Casio CZ-101, Oberheim OB-8, and Oberheim Xpander. It will soon be available for Super Jupiter, Polaris, RX-11, Mirage, and other instruments. Upgrades and utilities are available to registered owners at a nominal charge. Requires MUSICDATA MIDI INTERFACE or compatible. $75.00. Available from MUSICDATA INC.

MIDI ENTERTAINMENT AND GRAPHICS

        These programs turn a MIDI system into a juke box
for listening and entertainment.

MIDI PLAYER. MIDI PLAYER is a collection of computer
generated music videos. The recordings can be arrang-
ed, digitally stored on disk, and played back in any
designated order.   While the music plays, the video
screen dances with high resolution graphics directly
keyed to the tempo and pitch values of the score.
$149.95. Available from PASSPORT.

MIDI SONG ALBUMS. Collections of popular tunes can be
played back in any designated order through a MIDI
synthesizer. The program can be used as a soundtrack
for parties, or as instant accompaniment for jam ses-
sions.   Songs can be reorchestrated by changing the
synthesizer's presets.   POP SONG ALBUM: $29.95.
BEATLES SONG ALBUM: $29.95. Requires a Passport MIDI
interface card. Available from PASSPORT.

Q-R-S MUSIC DISKS. Q-R-S's extensive library of piano
rolls has been converted to digital signals and placed
on disk in a wide variety of styles.   The Q-R-S
collection includes a number of celebrity performances
by keyboard greats such as Joplin, Gershwin, and
Liberace.   Each disk is a six song album. $19.95.
Available from Q-R-S.

HARDWARE

The following is a listing of MIDI hardware excluding keyboards.

1-2 MIDI CABLE. The cable can connect two MIDI instruments. It can also link three MIDI instruments so that one "master" instrument directly drives two "slave" instruments. $19.95. Available from Q-R-S.

MIDI ADAPTOR. A double female plug that can be used to convert a male MIDI cable into a female MIDI cable. It can also be used to join two standard MIDI cables to increase the overall length. $9.95. Available from Q-R-S.

MIDI INTERFACE. A piece of hardware that lets MIDI instruments communicate with a personal computer and vice versa. The MIDI interface for MUSICDATA programs features MIDI In and MIDI Out. It also features Drum Out for use with other compatible software. $125.00. Available from MUSICDATA INC.

MIDI MAGIC. This interface plugs into the User Port and MIDI In socket found on all MIDI keyboards. A six song demo disk is included. $49.95. Available from Q-R-S.

MIDI-STANDARD INTERFACES. These are tape and drum sync interfaces. $199.95. Drum Sync interface alone: $129.95. Available from SYNTECH CORPORATION.

MIDI SYNCHRONIZER. Interfaces MUSICDATA's sequencer and interface with external clocks (drum machines, sync to tape, etc.). $100.00. Available from MUSICDATA INC.

PAD-8 OCTAPAD. This package enables drummers and percussionists to use their performance techniques to play any MIDI instrument. It consists of eight touch sensitive pads with input jacks for up to six additional external pads and footswitch jacks for switching patches and changing programs. Each pad can be independently assigned so that any MIDI sound source, from drum machines and synthesizers, to sequencers and software, can be activated by hitting a pad. The performance parameters for each individual pad are programmed by the user. Available parameters include:

note number, MIDI channel assignment, touch sensitivity, curve of response, minimum velocity, and gate time. The presets will hold a maximum of four different pad setting combinations in memory. All data stored in the presets can be recalled instantly and easily modified. $495.00. Available from ROLAND CORPORATION.

PASSPORT MIDI INTERFACE CARD. Passport's interface for Passport and compatible software. $129.95. Available from PASSPORT.

PITCHRIDER 2000. This pitch recognition device uses both visual and aural displays to help improve intonation. It generates MIDI data so that any instrument can drive a MIDI synthesizer or software. $595.00. Available from CHERRY LANE TECHNOLOGIES.

PITCHRIDER 4000. The professional version of the PITCHRIDER does not include the intonation display. $495.00. Available from CHERRY LANE TECHNOLOGIES.

PITCHRIDER 7000. A polyphonic PITCHRIDER for use with any guitar. The pickup easily attaches to one's guitar without carving or drilling. $995.00. Available from CHERRY LANE TECHNOLOGIES.

PITCHRIDER 64. This PITCHRIDER converts the C64/128 into a pitch-to-MIDI device. $245.00. Available from CHERRY LANE TECHNOLOGIES.

APPENDIX A

The following magazines and organizations are recommended to keep abreast of the fast changing world of microcomputers.

PERIODICALS RELATING TO COMMODORE COMPUTING

COMMODORE POWER/PLAY
Contemporary Marketing, Inc.
1200 Wilson Drive
West Chester, PA 19380

COMPUTE!
COMPUTE! Publications, Inc.
P.O. Box 5406
Greensboro, NC 27403

PERIODICALS RELATING TO COMPUTERS & EDUCATION

ELECTRONIC LEARNING
Suite 220
1311 Executive Center Drive
Tallahassee, FL 32301

T.H.E. TECHNOLOGICAL HORIZONS IN EDUCATION
Synergy, Inc.
P.O. Box 992
Action, MA 01720

PERIODICALS RELATING TO COMPUTERS AND MUSIC

ATMI Newsletter
The Association for Technology in Music
Instruction
Ken Bales, Editor
School of Music
University of Nebraska
Omaha, NE 68182

COMPUTER MUSIC JOURNAL
MIT Press
28 Carleton Street
Cambridge, MA 02142

APPENDIX B

BOOKS

ANIMATION, GAMES, & SOUND FOR THE COMMODORE 64
by Tony Fabbri
Prentice-Hall, Inc.
Englewood Cliffs, N.J. 07632

GRAPHICS, SOUND AND MUSIC FOR THE COMMODORE 64
by Don Cassel
W. C. Brown Publishers
2460 Kerper Blvd.
P.O. Box 539
Dubuque, IA 52001

MUSIC AND THE APPLE II
by Thomas E. Rudolph
Unsinn Publications, Inc.
P.O. Box 672
Drexel Hill, PA 19026

APPENDIX C

VENDORS: GENERAL

EDUCATION SOFTWARE AND KEYBOARD SYSTEMS

ABACUS SOFTWARE, P.O. Box 7211, Grand Rapids, MI 49510

ACCESS SOFTWARE, #A 2561 South 1560 West, Woods Cross, UT 84087

ACTIVISION, INC., P.O. Box 7787, Mountain View, CA 94043

ALFRED PUBLISHING COMPANY, 15355 Morrison Street, P.O. Box 5964, Sherman Oaks, CA 91413

ALGO-RHYTHM SOFTWARE, 176 Mineola Blvd., Mineola, NY 11501

AURICLE CONTROL SYSTEMS, 3828 Woodcliff Road, Sherman Oaks, CA 91403

BARNETT, Dorothy G. 6657 W. Hinsdale Avenue, Littleton, CO 80123

BRODERBUND, 17 Paul Drive, San Rafael, CA 94903

CBS SOFTWARE, A unit of CBS, Inc., One Fawcett Place, Greenwich, CT 06386

COMPUTER APPLICATIONS TOMORROW, P.O. Box 605, Birmingham, MI 48012

COVOX, INC., 675-D Conger Street, Eugene, OR 97402

DESIGNWARE, 185 Berry Street, San Francisco, CA 94107

EDUCATIONAL AUDIO VISUALS, INC., Pleasantville, NY 10570

ELECTRONIC ARTS, INC., 2755 Campus Drive, San Mateo, CA 94403

ELECTRONIC COURSEWARE SYSTEMS, INC., 1210 Lancaster Drive, Champaign, IL 61821

ELECTRONIC LAB INDUSTRIES, 100 W. 22nd Street, P.O. Box 7167, Baltimore, MD 21218

FISCHER PRICE, P.O. Box 1327, Cambridge, MA 02238

HESWARE, Human Engineered Software, 390 Swift Avenue, #14, So. San Francisco, CA 94080

KOALA TECHNOLOGIES CORPORATION. 3100 Patrick Henry Drive, Santa Barbara, CA 95050

MASTERSOFT, P.O. Box 1027, Bend, OR 97709

MECC, MINNESOTA EDUCATIONAL COMPUTING CONSORTIUM, 3490 Lexington Avenue North, St. Paul, MN 55112

MELODIAN, INC., 792 Holmdel Road, Holmdel, NJ 07733

MICROSCI, a division of Standun Controls, Inc., 2158 Hathaway Street,
Santa Ana, CA 92705

MINDSCAPE, INC., 3444 Dundee Road, Northbrook, IL 60062

MUSOFT, a division of TMS, P.O. Box 620, Pittsburg, TX 75686

NEW ARTS CO., P.O. Box 2700, Huntington Beach, CA 92647

PROTECTO ENTERPRIZES, 22292 N. Pepper Rd., Barrington, IL 60010

SCARBOROUGH SYSTEMS, INC., 480 California Avenue, Suite 206, Palo Alto, CA 94306

SEQUENTIAL CIRCUITS, 3051 North First Street, Dept. P, San Jose, CA 95134

SIGHT & SOUND MUSIC SOFTWARE, INC., 3200 South 166th Street, New Berlin, WI 53151

SOFTSYNC, 14 East 34th Street, New York, NY 10016

SPINNAKER SOFTWARE, 215 First Street, Cambridge, MA 02142

SPRINGBOARD, 7807 Creekridge Circle, Minneapolis, MN 55435

SWAN, Software for Arts Education, 339 S. 500 E., Provo, UT 84601

SYSTEMS MANAGEMENT ASSOCIATES, 3700 Computer Drive, P.O. Box 20025, Raleigh, NC 27619

TECH SKETCH, 40 Vreeland Avenue, Totowa, NJ 07512

TG PRODUCTS, INC., P.O. BOX 8248, Longview, TX 75607

WENGER CORPORATION, P.O. Box 448, Owatonna, MN 55060-0448

APPENDIX D

VENDORS: MIDI HARDWARE AND SOFTWARE

CHERRY LANE TECHNOLOGIES, 110 Midland Avenue, P.O. Box 430, Port Chester, NY   10573

DR. T's MUSIC SOFTWARE, 24 Lexington Street, Watertown, MA 02172

ELECTRONIC COURSEWARE SYSTEMS, INC., 1210 Lancaster Drive, Champaign, IL   61821

E-MU SYSTEMS, INC., 2815 Chanticleer, Santa Cruz, CA   95062

INTERNATIONAL MIDI ASSOCIATION, 11857 Hartsook Street, North Hollywood, CA   91607

KORG/UNICORD, 89 Frost Street, Westbury, NY   11590

KURZWEIL MUSIC SYSTEMS, INC., 411 Waverly Oaks Road, Waltham, MA   02154-8464

LINN ELECTRONICS, INC., 18720 Oxnard Street, Tarzana, CA 91356

MIMETICS CORPORATION, P.O. Box 60238, Station A, Palo Alto, CA   94306

MUSICDATA INC.,   8444   Wilshire   Blvd.,   Beverly   Hills,   CA 90211

OBERHEIM,   2230   South   Barrington Avenue,   Los   Angeles,   CA 90064

PASSPORT, 625 Miramontes, Half Moon Bay, CA   94019

Q-R-S, 1026 Niagra Street, Buffalo, NY   14213

ROLAND CORPORATION,   7200   Dominion Circle, Los Angeles,   CA 90040

SEQUENTIAL INC., 3051 N. First Street, San Jose, CA   95134

SYNTECH, 7925 Maestro Avenue, Canoga Park, CA   91304

YAMAHA INTERNATIONAL CORPORATION, P.O. Box 6600, Buena Park, CA   90622