LYRA VERSION 2.02 UPDATE
(C) 1987 by Lester Hands

Before you do anything with your new Lyra disk, PLEASE MAKE A BACKUP COPY!! Lyra may be loaded by entering "LOAD" LYRA", holding down the "SHIFT" key until the disk light goes out, then pressing "1" for a buff screen, and "2" for a green screen.

You will notice that a number of minor changes, mostly cosmetic, have been made in the naming and arrangement of the pulldown menus. Take a few minutes to familiarize yourself with the changes.

A full range of note values is available, including 64th notes and rests. Triplets of any note value except a whole note may be entered by selecting the correct note, positioning it on the screen and pressing the "3" key. Any note except a whole may be dotted in the same way by using the "." key.

Loading a file has been simplified so that the mouse is used to select the correct filename. Simply move the mouse around until the desired file is highlighted, then press the mouse button.

An Append command has been added to the FILE pulldown menu. This command will append just the notes from a Lyra file to the end of the current music in memory. Only version 2 music files may be appended. Be sure the original and appended files use identical voices and have the same time signature.

When you select the Save as command on the FILE pulldown menu, you may add a disk drive number at the end of the name. This drive number then becomes the default drive. The Set Drive command remains as before.

The Set Drive command has been moved from the MISC menu to the DISK menu, as have the Load/Save Instr commands from the "IDI menu.

Under the EDIT menu, Note lengths has been added. This command allows you to specify the length of each note as a fraction of 8 for each voice. Eight fractions will appear on the screen when you select this item; each fraction corresponds to each voice 1 through 8. Entering 6 for voice 1 will cause notes in voice 1 to be played for 6/8ths of the note value. Entering 0 has the same effect as 8. Please note that this will affect only MIDI play.

Another command, Fill Voice, allows you to fill a voice with rests up until the start of displayed music. This is useful when you have filled a voice with notes and then decide that you need another voice to add a note to a chord. Instead of going back to the start of the new voice and laboriously adding rests until you reach the point where the new note goes, just position the start of displayed music to where the new note will go, select the Fill Voice command, and enter the voice number that needs to be filled. After the command has been completed, the display is backed up one space. You can specify the position of the inserted rests by first placing a rest at the start of the voice at the desired position.

The Block Copy command has been simplified. Mark the beginning and ending of the block as before, then select Block Copy. It is not necessary to position the cursor before doing this. The cursor will turn into a vertical "COPY". Now position the cursor at the point you wish the copy to occur and press the mouse button. After copying, the screen will update to the start of music.

Several additional commands are available on the MIDI pulldown menu. Filter OFF is a toggle that can be set ON or OFF. When set ON, it lets you filter out all MIDI data except for note and clock information when playing a file. This is useful when you wish to ignore the channel and instrument information, that changes from one synthesizer to another.

Clock OFF allows you to turn the MIDI clock on or off. The "ON" or "OFF" displayed refers to the current state of the clock. When on, Lyra will send timing signals at the rate of 24 every quarter note. In addition, start and stop signals are sent at the start and stop of music. If you interrupt playing with the "U" key and then restart, a MIDI continue signal will be sent instead of the start signal. The main use of the clock is for synchronization with drum machines and other synthesizers.

MIDI delay has been added to correct note sticking and random sounding "garbage" problems with certain synthesizers. There appears to be two reasons for these problems: either the cable connecting the CoCo serial port to the synthesizer is not supplying the correct current to the synthesizer, or the synthesizer is not fast enough to keep up with Lyra. In most cases, the latter is probably the culprit. MIDI delay allows you to enter a number from 00 to 99. The larger the number, the longer the pause that is inserted between MIDI signals when Lyra is playing music. Experiment with your synthesizer to determine what number works best. Note that as you increase the number and consequently the amount of time between MIDI signals, the tempo becomes slower and there is greater variation in tempo depending on the number of notes being played simultaneously.

You may send any byte out to MIDI by the use of the "U" key. Position the cursor at the point in music where you wish the byte to be sent. Press the U key and enter the hex value of the byte you wish to be sent. You will need to consult the manual that came with your synthesizer to determine what value should be used. This option can be used to set volume, sustain, or other special effects on your synthesizer.

Tempo within a piece of music may be altered by positioning the cursor at the point you wish the change to take place, pressing "R" and then entering the tempo. The value "40" is the normal tempo. Note that this tempo value is independent of the "Master Tempo" that you can set in the EDIT menu.

An individual voice may be transposed up or down an octave by use of the "O" key. Position the cursor where you wish the change to take place and press the "O" key. An "8ve" will appear. If the marker is displayed above the grand staff, then it will raise all notes following it in that voice by one octave; if below the staff, then it will lower by an octave. You

may return to normal pitch by presing the "L" key; a "logo" will display on the screen.

Volume may be set by selecting the desired voice, positioning the cursor, and pressing the "V" key. A list of possible volumes will appear; press the number key corresponding to the desired volume. Please note that this command affects only MIDI play, and only if your synthesizer is velocity sensitive.

Provision has been made to modify the volume settings; select the Volume Set command under the MIDI menu. Lyra is preset to certain values that should work for most situations:

```
ppp - 16          pp - 32
  p - 48          mp - 64
 mf - 80           f - 96
 ff - 112         fff - 127
```

The values you enter must all be less than 128 or your synthesizer may behave strangely. These volume settings are saved with the music. You will find that music files written with earlier versions will have the volume settings all set to 64.

If more than one voice is set to black, the cursor will turn to half tone when in the area of the staff to remind you that no notes may be entered until you change the voice settings to only one black.

There are several limitations in this version of Lyra that you should be aware of. First of all, bar numbers greater than 999 will cycle around to 0 and on. The bar move at the bottom of the screen will function until the size of music causes certain counters to "overflow". This occurs at 1365 quarter notes in voice 1 (or 341 bars of 4/4 time). The time signature can handle up to 5/4 or 9/8 time, but 6/4 or 10/8 or greater will cause an overflow error.

You will find that these limitations for the most part will cause little trouble. Time signatures can be adjusted to smaller values (like changing 12/8 to 6/8). By the time you have exceeded 1365 quarter notes in voice one, you probably will have used up only one third to one half of the available memory. You can still use the full amount of memory by making use of the Append command. Break a long piece of music up into smaller chunks (smaller than 1365 quarter notes) and save each part in a different disk file. After you have made sure that each part is correct, then load the first into Lyra, and append each successive part in turn.

Please delete the instructions in the appendix of the manual for how to make your own MIDI cable. While this cable will work with some synthesizers, it will not work with all because of differences in the input circuitry of the synthesizer. Please order your cable from Speech Systems, specifying what synthesizer and computer you have.

A new program file accompanies this version of Lyra. LYRABOY/BIN is a single player program. It allows you to select any number of files from a disk directory and then play them through one

of the Lyra outputs.

If you are using a joystick, you are probably having a
considerable amount of difficulty selecting files and
positioning notes. It is highly recommended that you spend the
extra $$ and purchase a mouse. The mouse is much more accurate
and will save you many frustrated moments.

Revision 2.4: March 1987.

ADDITIONAL INSTRUCTIONS FOR LYRA VERSION 2.2
(C) 1986 by Lester Hands

Before you do anything with your Lyra disk, PLEASE MAKE A BACKUP COPY!! Consult the Radio Shack disk operating manual for details. Lyra may be loaded by one of two methods. If typing "DOS" results in an syntax error message, then enter "RUN LYRA".

The first new thing you will notice is the addition of 64th notes and rests at the bottom of the screen. Triplet notes of any note value except a whole note may be entered by placing the correct note on the screen then and pressing the "3" key.

The file load requester has been simplified so that the mouse is used to select the correct filename. Simply move the mouse around until the desired file is selected, then press the mouse button.

An "Append" command has been added to the "FILE" pulldown menu. This command will append a Lyra file from disk on the end of the current music in memory. The channel, velocity, instruments, and tempo assignments remain unchanged by the new music. Only version 2.2 music files may be appended. See below. Be sure the original and appended files use identical voices and have the same time signature.

When you select the "Save as" command on the "FILE" pulldown menu, you may add a disk drive number at the end of the name. This drive number then becomes the default drive. The "Set Drive" command under the "MISC" pulldown menu remains as before.

Under the "EDIT" menu, "Note lengths" has been added. This command allows you to specify the length of each note as a fraction of 8 for each voice. Eight fractions will appear on the screen when you select this item; each fraction corresponds to each voice 1 through 8. Entering 6 for voice 1 will cause notes in voice 1 to be played for 6/8ths of the note value. Entering 0 has the same effect as 8. Please note that this will affect only MIDI play.

The "Block Copy" command has been simplified. Mark the beginning and ending of the block as before, then select "Block Copy". It is not necessary to position the cursor before doing this. The cursor will turn into a vertical "COPY". Now position the cursor at the point you wish the copy to occur and press the mouse button. After copying, the screen will update to the start of music.

If more than one voice is set to black, the cursor will turn to half tone when in the area of the staff to remind you that no notes may be entered until you change the voice settings to only one black.

There are several limitations in this version of Lyra that you should be aware of. First of all, bar numbers greater than 999 will cycle around to 0 and on. The bar move at the bottom of the screen will function until the size of music causes certain counters to "overflow". This occurs at 1365 quarter notes in voice 1 (or 341 bars of 4/4 time). The time signature can handle up to 5/4 or 9/8 time, but 6/4 or 10/8 or greater will cause an overflow error.

You will find that these limitations for the most part will cause

little trouble. Time signatures can be adjusted to smaller values (like changing 12/8 to 3/4). By the time you have exceeded 1365 quarter notes in voice one, you probably will have used up only one third to one half of the available memory. You can still use the full amount of memory by making use of the "Append" command. Break a long piece of music up into smaller chunks (smaller than 1365 quarter notes) and save each part in a different disk file. After you have made sure that each part is correct, then load the first into Lyra, and append each successive part in turn.

Version 2.2 of Lyra has a slightly different file structure than version 1.2. When you load a music file into memory, Lyra checks the version and automatically adjusts the music to fit the new version. When you save the music again, it is saved in the new 2.2 format. It is highly recommended that you convert all of your present music files to the new format by simply loading the music into Lyra, then saving it back to disk with the "Save" command.

Please delete the instructions in the appendix of the manual for how to make your own MIDI cable. While this cable will work with some synthesizers, it will not work with all because of differences in the input circuitry of the synthesizer. Please order your cable from Speech Systems, specifying what synthesizer and computer you have.

Lyra Convert and the Symphony 12 enhancer have been updated to version 2.0 to reflect the changes in Lyra. You may update your version by sending the original disk along with $7.00 to cover postage and handling to (we must have your warranty registration for this service):

Speech Systems

38 W 255 DEERPATH ROAD   BATAVIA, ILLINOIS 60510

Speech Systems will no longer offer a free update as a part of the purchase price. However, as enhancements are made, you will have the option to upgrade your version of Lyra for a very reasonable charge.

Yes, Lyra is compatible with the new Color Computer 3. If you are using a monochrome monitor, you can change the display to disable the color signal: press the "M" key as the program is loading, releasing it when the disk drive light goes out.

The complete assembly language source code of Lyra is available for $75.00 to registered Lyra owners. The source code, over 70 pages long, is a treasure trove of programming tricks and techniques.

Continued improvements and enhancements in Lyra are possible only with your support. Current plans include volume and tempo changes, printing music, and a built-in MIDI recorder.

Revision 2.2: October, 1986.

LYRA

a MIDI based music sequencer/editor
for the Tandy Color Computer

Version 1.2
July 1986

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INTRODUCTION

LYRA is a MIDI music program for the Tandy Color Computer designed for musicians (and non-musicians!) who hate computers. LYRA follows the new standard of ultra user-friendly programs that should do away with bulky program manuals. But in case you have difficulty, here is information designed to help you out.

LYRA takes advantage of the built in music generation capabilities of the Color Computer as well as the increasingly popular music interface standard, MIDI. Full graphic display allows easy entry and editing of a music score with up to 8 fully independent voices.

To run LYRA you need the following equipment: a Tandy Color Computer with 64K memory, a mouse (or joystick), and a disk drive (Radio Shack DOS 1.0 or 1.1 required) to store music scores on. Optional equipment includes a MIDI synthesizer and a connecting cable. Instructions for making your own cable are given in the appendix or you may purchase one from your dealer. LYRA also supports the hardware MIDI interface "CoCo MIDI" available from Speech Systems.

GETTING STARTED

Load the program from disk by typing:

        LOADM "LYRA"

and then press the ENTER key.

The screen will display a title and copyright message; press any key (or mouse/joystick button) to continue.

The tool you will need to master to get around LYRA is the mouse or joystick. This needs to be plugged into the right joystick connector on the back of the computer. From now on, whenever the mouse is mentioned, assume that the joystick could be used instead. You will find that the mouse will function much better than a joystick and is well worth the additional expense.

Move the mouse up and down. A small black diamond called a "cursor" will move accordingly. You can tell the program what you want to do by placing the cursor in a certain area ("point") and then selecting by pressing and releasing the mouse button ("click"). For example, move the cursor down to the line of notes at the bottom of the screen. As you move across the notes and rests, the item pointed to turns black. Press the mouse button, release it, and move the mouse up above the notes and rests. You will find that the cursor has changed to the selected note or rest. Any time that a note or rest is displayed in this way, you can put it on the music score. Just point to the desired position and click. Voila! Now move the mouse above the music score. Point to the top line and move the mouse horizontally. You will see several boxes filled with commands pop down (called "pulldown menus"). Try selecting one of the commands by carefully moving the mouse down until the desired command is turned black. Click the mouse button and the command will be performed.

You have now learned 90% of what you need to know to make LYRA do your bidding. Go ahead, close this manual and try playing around!

SCREEN DESCRIPTION --

At the top of the screen is a black line with
words. This is the pulldown menu line. Each
word describes the type of commands that can
be accessed by selecting it. To use the pull-
down menu, simply point to the desired word on
the top line; a list or menu of choices will
pop down. By moving the mouse down, each choice
will be highlighted in turn. A choice may be
selected by clicking. If an item is displayed
in halftone, it is not available at the moment;
some other command must first be performed.

At the left below the pulldown menu line is the
current disk or tape file being edited. This is
changed when you change the file name by load-
ing or saving a file through the "FILE" pull-
down menu.

On the opposite side of the screen are 8 num-
bered boxes. Each box corresponds to one of the
8 possible voices that music can be entered
into. When a box is black, that voice is sele-
cted. Clicking that box will change it to half
tone; clicking once more will change it to
green. If notes are displayed, each part will
be displayed in full tone, half tone, or not at
all depending on what the corresponding box
shows. To enter music, only one box can be
black. If more than one is black or none are
black, then no music can be entered.

When the mouse is pointing to the music score
the note name and octave number are displayed
below the filename.

Below the music staff are two arrows pointing

in opposite directions. The music displayed may
be moved either direction by pointing to the
desired arrow and clicking. Between the two
arrows is the fast move bar. You can jump to
any part of music by positioning the cursor in
the bar and clicking. If the cursor is in the
midpoint of the bar, then music will be dis-
played at it's midpoint. Moving the cursor in
either direction will move the music a propor-
tional amount in the same direction.

At the bottom of the screen is the note and
rest menu area. Each item may be selected by
pointing and clicking. When the mouse is moved
up into the music staff area, the cursor chan-
ges to the selected note or rest. When the
mouse is moved above or below the staff, the
note disappears and the diamond shaped cursor
appears. Unless a new note or rest is selected,
the previously selected note will reappear when
the mouse is moved back into the staff area.

NOTE ENTRY --

Before entering any music, you must select the correct voice at the top right hand corner of the screen. The voice you want must be black, and all other voices either half tone or unselected. If more than one voice is black then LYRA will ignore any attempts to enter music.

After a note or rest has been selected, it may be placed on the music staff simply by pointing to the desired location and clicking.

When adding new notes, you must place the cursor immediately after the last note in that voice before clicking. If you have entered music in voice one and have scrolled the display to the right so that now no notes in voice two are displayed, move the display back until a note in voice two is seen before entering notes in that voice.

Note values other than those shown on the note menu at the bottom of the screen may be entered using the musical tie or period key. A tie is entered by pointing to the second note involved and pressing the "T" key. For example, suppose you wish to enter a dotted quarter note. This has the same note value as a quarter note tied to an eighth note. Pick up a quarter note and put it on the staff and then place an eighth note immediately after it. Point to the eighth note and press the "T" key. A tie connecting the quarter and eighth notes will appear. Please note that musical slurs which look like ties are not supported on LYRA.

A dotted note may also be entered by placing the cursor over the desired note and pressing the period (".") key.

Notes may be sharped or flatted by selecting the correct voice, pointing to the desired note, and pressing "S" for sharp, "F" for flat, or "N" for natural.

Editing of existing music is very simple. Select the desired voice using the numbered boxes at the top of the screen. To change a note, point to the new pitch directly above or below and click. A note may be inserted by pointing between two notes and clicking. You can delete a note by pointing to it and pressing the "D" key.

Notes are entered into the voice selected at the top right of the screen. Only one box should be black; if more than one or no boxes are black, then no music can be entered. Any voice may be displayed in half tone by clicking the appropriate voice box until it is half tone. A voice can be turned off by clicking its voice box until it is cleared. These display modes can be used to check parts separately, especially when the display becomes crowded.

One "note" of caution: while it is ok to have less notes in voices 2 through 8 than voice 1, voice 1 should be full up until the end of music. The reason for this is that many of the editing routines in Lyra use voice 1 for positioning. Unpredictable results may occur if voice 1 is not full.

Barlines are automatically displayed for you depending on the time signature. The time

signature can be set by getting the EDIT pulldown menu and selecting "Time signature". More on this in the pulldown menu section.

If there is an error in a voice such that there are too many beats in a measure (such as a whole note in a 3/4 bar), further display of barlines becomes inaccurate.

Note that barlines do not affect the music code stored in memory; you can reset the time signature and the barlines will be re-adjusted accordingly. The time signature can be reset only when the display shows the start of music.

PLAYING MUSIC --

There are two ways to play music. The preferred method is with a MIDI synthesizer hooked up. But if you don't have one or wish to quickly check the music, up to 4 voices can be played through the TV speaker by going to the MISC pulldown menu and selecting "TV Play". This will play the first 4 voices selected (either black or halftone). See the section on pulldown menus for more details.

If you have a synthesizer, first be sure you have connected the Color Computer to it with the correct cable (see the appendix) plugged into the serial connector on the back of the computer and into the "MIDI in" connector on the synthesizer. Go to the MIDI pulldown menu and select "MIDI play". All voices selected (either black or halftone) will be played through the synthesizer. If you have problems with getting the right sound or not being able to get all voices to play, see the appendix.

LYRA also has built in support for Speech System's CoCo MIDI pack. Make sure that you have plugged the pack into your MultiPak or Y-cable and have connected the "MIDI out" connector on the pack to the "MIDI in" connector on the synthesizer according to the directions that come with the pack. Select "MIDI play" and music will be played through the CoCo MIDI pack.

Lyra can also be used with other hardware; at present the Stereo Pak, ORCH-90, and Symphony 12 may be used to output music. The necessary interfacing program may be obtained through your dealer.

STEREO OUTPUT --------------------------

LYRA comes with several command files
that will allow up to 4 voices to be
output to Speech Systems STEREO PAK or
the Radio Shack Orchestra 90 cartridge.
The present version of LYRA outputs to
only one audio channel. While a single
channel is not stereo, there is a big
advantage in using either the STEREO
PAK or ORCH 90 to easily allow connect-
ing LYRA to your home stereo system to
achieve highest sound quality.

For those needing "true" stereo output,
we offer the LYRA STEREO ENHANCER (stk
LS149). However, there is a possibil-
ity that versions of LYRA later than
1.2 will include this option. A quick
check of LYRA will indicate what op-
tions you have.

ORCHESTRA 90 --------------------------

If you have the Radio Shack ORCH 90
cartridge rather than the Speech Sys-
tems STEREO PAK, you must have a MULTI-
PAK in order to use it with LYRA since
ORCH 90 will "grab" control of the
computer and not allow you to load
LYRA. With the MULTI-PAK you can select
the disk controller which will de-
select ORCH 90.

SETTING MIDI PARAMETERS -----------------

MIDI is a standard that allows musical synthe-
sizers and computers to talk to each other. If
properly equipped, synthesizers can pass musi-
cal information to each other and computers can
be used to control one or more synthesizers.

This manual makes no attempt at a tutorial on
MIDI. Every synthesizer is slightly different
in the way MIDI is implememented. If you have
questions about the technical details you
should consult the documentation that came with
your synthesizer.

In order to make your synthesizer work, you
must set up a number of parameters in Lyra.

The most important parameter is the CHANNEL
parameter. Each voice may be sent on any of 8
channels or all voices could be sent on one
channel. Even though there is only a single
cable connecting your computer and synthesizer,
channels make it possible to send musical in-
formation to 8 different instruments. You could
hook up 8 separate synthesizers or your synthe-
sizer could be set up so that it will make 8
different sounds depending on which channel
information is sent.

Which selection you make depends on how your
synthesizer handles channels. If you are not
sure, then the best bet is to set the channels
all to 1.

All MIDI parameters are set through the MIDI
pulldown menu. More details may be found in
that section.

PULLDOWN MENUS --

This section discusses the various commands
available through the pulldown menus in order
of the menu line at the top of the screen. Most
commands request information that must be en-
tered through the keyboard. After this infor-
mation is entered, press the ENTER key and the
command will be performed. The BREAK key may be
used to abort a command.

FILE

To save a composition, go up to the FILES pull-
down menu and select "Save as". Type in the
name of the composition (up to 8 letters) and
press ENTER. Your composition will be saved to
disk. The disk drive used may be changed
through the MISC menu under "Set drive".

A composition may be loaded by selecting
"Load". A directory of LYRA files will be dis-
played. Type in the name of the one you want
and press ENTER. The filename will be displayed
in the left upper corner of the screen as soon
as the music has been loaded.

If you have edited a composition and wish to
save it again, simply select "Save" on the EDIT
pulldown menu. This saves the composition with
the name displayed in the upper left hand cor-
ner of the screen. If you wish to change the
name then use the "Save as" command. You will
notice that if no filename is displayed in the
upper left hand corner the "Save" command is
displayed in halftone and cannot be selected.
This command can be used only after a file has
been loaded or saved.

Lyra saves several things along with the music code: the current voice selections, the key and time signatures, the MIDI instrument table, MIDI velocities, and the synthesizer description.

Should an error occur in loading or saving a file, the type of error that occurred will be displayed and the program will halt until any key is pressed.

Selecting the "New" command will clear memory. Be sure to save any music you may be editing before using this command as there is no way to "undo" it!

The "Quit" command returns you back to Basic. Like the "New" command, there is no way to return to Lyra unless you reload the program.

EDIT

"All voices on" is a quick way to set all 8 voices on. Voice 1 is set to black and the others are set to halftone. Music can be entered into voice 1.

"Time signature" is used to change the time signature. Enter two numbers to correspond to the desired time signature.

"Key signature" may be similarly set. First enter a number corresponding to the number of flats or sharps in the key signature and then either "F" or "S" for flat or sharp. To enter a key signature of 5 flats, enter "5F".

"Master Tempo" allows you to set the master tempo. A smaller number speeds the music up, and a larger number slows it down. It is normally set to 32.

Lyra allows you to edit blocks or sections of music. The next three commands work on blocks. Until a block has been marked, these commands are displayed in halftone and cannot be selected. A block is marked by moving the cursor to the start of the block, pressing the "B" key and then moving forward to the end of the block and pressing the "B" key again. The marked block of music is displayed with colors reversed so you can easily tell where it is. The end of the block may be changed by by pointing to a new location and pressing the "B" key. The start of a block cannot be reset unless the whole block is cleared first.

"Reset block" clears a marked block in case you marked the wrong section of music.

"Block delete" deletes the marked section of music. Be sure you have marked music correctly!

"Block copy" allows you to copy a block of music. Mark the block then position the display so that the point you want the block copied to is at the start of the display. Select "Block copy" and you're done. If you wish to copy to the end of music, first put an extra note in voice 1 at the end of music. Perform the block copy and then delete that extra note.

MIDI

The MIDI pulldown menu provides most of the

commands needed to set up and play music through your MIDI synthesizer.

"MIDI play" will play your music through your synthesizer starting at the point displayed on the screen. Only those voices selected in black or halftone are played. Play may be aborted by pressing any key. Pressing the "U" key causes the screen to update to where the music was interrupted. This is useful for editing music. If you are not getting any sound from your synthesizer, check the appendix for possible causes.

"Channels" allows you to specify which channels the music should be played through on the synthesizer. At start-up, all 8 voices are set to play through channel 1. Most synthesizers will play music correctly in this mode provided they can handle however many voices you have used. Check the documentation with your synthesizer to determine how it implements this feature. Each voice may be set to its own channel if desired. Enter a string of 8 numbers corresponding the to channel desired for each voice. For example, if you have 4 voices being used in your composition, and desire to send voice 1 to channel 1, voice 2 to channel 2, and voices 3 and 4 to channel 3, then you would enter "12331111". The last 4 numbers could be any number since they are not used by a 4 part composition.

"Velocity" allows the MIDI velocity to be specified for each voice. This parameter allows you to simulate the effects obtained with a pressure sensitive keyboard. As with the instrument numbers, the velocity is assigned to

the channel for the selected voice. The first velocity is assigned to voice 1, the second to voice 2, and so on. Check your synthesizer documentation for details on how velocity is implemented.

"Transpose" lets you transpose music up or down up to 9 half steps. Enter the direction ("+" for up and "-" for down) and the number of half steps. To transpose down a whole tone, enter "-2".

"Instruments" allows you to set up to 16 different MIDI instruments (or "program numbers"). The instrument data is arranged in two columns: first is the instrument number (0 to 9 and A to F) followed by a colon, then the MIDI program number (the actual number sent to your synthesizer), and then a seven letter description of the instrument. You can change the program number and descriptions to fit the instruments available on your synthesizer.

To use these instruments in your composition, you must set an instrument marker in the music. Make sure the desired voice is selected, and the cursor is a note or rest. Press the "I" key. The cursor will disappear. Now press the instrument number (0 to 9, A to F) and the cursor will reappear as "I" followed by whatever instrument number you selected. Now enter the marker into music as you would a note. Notice that this marker affects only the channel selected by the voice. For example, suppose you have entered "I3" into voice 3 and the channels selected are "12243111". When the music is played, voices 2 and 3 will be set to the new instrument since they both are on the

same channel. If you wish all the voices to have different instruments, then each voice must be set to a different channel.

Since there is no standardization as to what sound is produced by a program number on a synthesizer, the instrument table used in Lyra helps to circumvent the difficulties that would be encountered if a music file was played on a synthesizer other than the one that the music was originally set up for. One synthesizer might require a program number of 34 for a violin sound and another require a program number of 2. To play a composition set up for the first synthesizer, it is not necessary to go through music and change all the instrument markers (which could be quite a chore!). All that you have to do is to change the program numbers in the instrument table.

To help you get around on the instrument table, the down arrow key moves the cursor to the next field. The left arrow key will move the cursor back until the start of the current field. The right arrow key will advance the cursor one space.

"Load instr." and "Save instr." loads or saves MIDI instrument tables to disk. This provides an easy way to change an instrument table if you wish to use a different set of instruments or if you are changing synthesizers. The synthesizer description is also included in each file so you can tell which synthesizer the table is intended for. These commands function similarly to the "Load" and "Save as" commands of EDIT menu.

"Description" is used to make a note as to what synthesizer was used for the instrument table. This information is stored with the music code and also with instrument tables.

MISC

This pulldown menu catches up on a number of miscellaneous commands.

"TV Play" plays the music through the TV (or monitor) speaker. Up to 4 voices may be played, the first 4 selected voices. If the music is lengthy, only a part of it will be played because of memory limitations. The music starts playing at the point displayed on the screen and may be interrupted by pressing any key. This feature is useful if you don't yet have a synthesizer or you want a quick way to check your work.

"Memory" displays the amount of memory left for music code. You will find that there is more than enough space for most small to medium sized compositions. Press any key to erase the memory box and continue editing.

"Alt Play Load" loads in a special interfacing program to allow Lyra to work with other types of hardware. Currently supported are the Stereo Pak, ORCH-90, and Symphony 12. Supplied with Lyra are two programs "STERPLAY/PLA" and "ORCHPLAY/PLA" that allow simple monophonic use of the Stereo Pak and the Orchestra 90 pack. To use this optional hardware, you must have a Multi-Pak hooked up and the hardware plugged into an unselected slot. After the alternate play program has been loaded, the "TV Play"

selection will be changed to fit the new pro-
gram. To return to the normal "TV Play" you
will need to reload Lyra.

"Key commands" displays a list of the commands
that may be perfomed by just pressing a key.
Use this to jog your memory if you should
forget. Press any key to continue editing.

"Set Drive" is for users who have more than one
disk drive. Just enter the drive number (0-3)
and and files will be loaded from or saved to
that drive.

KEY COMMANDS --

A number of Lyra commands are performed by sim-
ple single keypresses. Here is a summary of
each one in alphabetical order. All of these
commands require that only one voice is set to
black, and that the cursor is either a rest or
note. To perform the command, put the cursor on
the music staff in the appropriate spot, and
press the key.

B - set start and end of music block.

D - delete note in current voice.

F - enter a flat note. This does the same thing
    as pressing the "fire" button except that a
    flat is added.

I - instrument set. After pressing "I", the
    cursor disappears until a second key is
    pressed (0-9, A-F). This sends a program
    number to a MIDI synthesizer when the music
    is played.

N - enter a natural note (cancel sharp or flat
    of key signature).

S - enter a sharp note. This does the same
    thing as pressing the "fire" button except
    that a flat is added.

T - tie a note to a previous one. This is used
    for entering note lengths other than those
    available on the note menu. This has an
    effect only when played on a MIDI synthe-
    sizer.

U - when used to interrupt MIDI play, the music
    score displayed at the point where it was
    interrupted.

. - lengthens note by one-half ("dotted note").

CONCLUSION --

Your purchase price includes one free update.
Lyra is continually being improved and we in-
vite your comments. This update service is
available ONLY if you fill out the warranty
card and mail it in.

Lyra is fully supported by the dealer who sold
you the program. Should you have any questions
or problems, you may call or write. Be sure to
mention the program serial number (which is
displayed when LYRA has just loaded and on the
diskette label).

We hope you find Lyra to be a useful program
and that it is one of the most used diskettes
in your library. The program is not copy pro-
tected because we believe copy protection is
detrimental to both the buyer and seller.
Please do not give copies of Lyra away to your
friends. Doing so not only violates the copy-
right law but also discourages software wri-
ters.

APPENDIX ——————————————————————————————————————

WHAT TO DO IF YOUR SYNTHESIZER DOESN'T WORK
WITH LYRA

1. Check the cable and/or the CoCo MIDI pack.
   If you made your own cable, recheck the
   wiring.

2. Check the MIDI channel assignments (see the
   MIDI pulldown menu section). Some synthesi-
   zers may recognize only one channel. If in
   doubt, change all voices to channel 1 (enter
   "11111111"). Check your synthesizer manual.

3. Check the MIDI instrument table. You may
   have set a program number that your synthe-
   sizer doesn't recognize. If in doubt, check
   your synthesizer manual.

4. Check the MIDI velocities. Your synthesizer
   may implement this feature differently.

WHAT TO DO IF LYRA DOESN'T WORK OR APPEARS TO
IGNORE YOU

1. Make sure you have a joystick or mouse plug-
   ged into the right joystick connector at the
   back of the computer.

2. If you can't enter notes onto the music
   score, make sure that only one voice is set
   on black (right upper screen). Enter a new
   note immediately after the last one in that
   voice (or right after the first barline). If
   the last note in a voice is not displayed

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(display has scrolled beyond the end of a
voice) then back the display up until it is
displayed.

3. Key commands require that a voice and a note
   value have been selected first.

4. 64K RAM is required, and only Radio Shack
   DOS versions 1.0 and 1.1 will work.

MAKING YOUR OWN MIDI CABLE

PLEASE NOTE: the following information is pro-
vided strictly for your information; NEITHER
SPEECH SYSTEMS NOR THE DEALER WHO SOLD YOU LYRA
ASSUMES ANY RESPONSIBILITY FOR DAMAGE ARISING
FROM THE USE OF THIS INFORMATION, NOR WILL THEY
PROVIDE ANY SUPPORT (answering questions or
fixing cables). Unless you are absolutely sure
of what you are doing, it is highly recommended
that you purchase a MIDI cable from your
dealer.

Lyra does not depend on any expensive hardware
to generate MIDI signals. All that is needed to
connect is a simple 2 wire cable that you can
easily make. Your dealer can sell you a cable
if you don't have much experience in making ca-
bles or can't find the right parts.

One word of caution: if you have a CoCo I (gray
case), the voltage level on the serial i/o con-
nector is 12 volts. On some synthesizers this
could damage the internal circuitry if an opto-
isolator or voltage limiter is not part of the
input circuit. This can be taken care of by in-
cluding a limiting resistor and/or a zener di-

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ode in the cable.

The cable required to connect the CoCo to a MIDI synthesizer is very simple. First, you need a 4-pin DIN plug for the Color Computer serial port and a 5-pin DIN plug for the MIDI port. Make sure the MIDI connectors are the right ones (there is more than 1 type of 5-pin DIN plug!). Both plugs are available from Radio Shack.

Now carefully connect pins 4 and 4, pin 3 on the 4 pin plug (Color Computer) to pin 5 on the 5 pin plug (MIDI).

Here is how the pins look (looking at the pins):

```
    1    4         1    3
      2    3         4    5
                       2
  (Color Computer)    (MIDI)
```

The notch on the plug is at the top. Each plug should have the pins individually numbered to help you.

Plug the 4-pin end into the CoCo and the other into the MIDI synthesizer.

The simple connection works only rarely. We sincerely suggest you purchase the LYRA MIDI cable that has additional componencts to assure compatibility $19.95

Lyra may be expanded to work with different types of hardware. Here is the current list of what is available and the prices (summer 1986). Please note that these options are available to registerd Lyra purchasers only (send in your warranty card!). .

LYRA MIDI CABLE - A cable to connect your computer to your MIDI synthesizer.
#MC158 ---------------------------------------$14.95

LYRA STEREO ENHANCER - A program patch for Lyra that lets you use either the Stereo Pak or ORCH-90 pack for stereo music output.
#LS149 ---------------------------------------$14.95

STEREO PAK - Plugs into the cartridge slot on the side of the computer allowing easy connection to your stereo system for stereo sound.
#SP193 ---------------------------------------$39.95

LYRA SYMPHONY 12 ENHANCER - Lets Lyra play up to 8 voices thorugh Symphony 12 (single preset voice).
#LS117 ---------------------------------------$14.95

SYMPHONY 12 - A real hardware music synthesizer. May be used with accompanying software or with Lyra and the Symphony 12 enhancer.
#SY149 ---------------------------------------$69.95

CoCo MIDI Sequencer/Editor - A hardware MIDI interface that provides input/output connectors for MIDI synthesizer. May be used with

accompanying software or with Lyra.
#CM147 --$149.95

LYRA CONVERT - Converts most Musica II files to
Lyra format. Make use of the thousands of avai-
lable music files; add new voices and sound ef-
fects!
#LC164 --$14.95