

**SOUNDWARE**  
MUSIC SOFTWARE

# POLY WRITER™

POLYPHONIC MUSIC TRANSCRIBING,  
EDITING, AND PRINTING SOFTWARE

## USERS MANUAL



*"The Music Software Source"*



*"The Music Software Source"*

625 Miramontes Street • Half Moon Bay, CA 94019 U.S.A.  
Telephone: (415) 726-0280



Score Writing Software for  
Polyphonic Music Transcription  
and Music Printing

Software written by Phil Farrand  
John L. Borowicz, David Kusek, and John Melcher  
Manual written by Bruce Bethke  
Edited by John L. Borowicz

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625 Miramontes St. Suite 103  
Half Moon Bay, CA 94019  
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Software written by Phil Farrand  
with David Kusek, John Melcher,  
and John L. Borowicz

Manual written by Bruce Bethke  
Edited by John L. Borowicz

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## INTRODUCTION

The direct translation of thought into printed music has long been the dream of musicians. Somehow, the mechanical process of notating music interferes with spontaneity and creativity. The process tends to get in the way of capturing the idea.

As word processors have freed the writer, allowing the author to concentrate on creativity and worry about the mechanics later, so computer researchers and musicians have spent years seeking to bridge the chasm between imagination and the finished product.

It is with this in mind that Passport Designs, Inc. proudly introduces PolyWriter. A system to streamline your creativity and help you get down on paper what you feel when you play, without disrupting the flow of creative energy.

PolyWriter is the fully polyphonic, multiple part, multiple stave, music notation system. Its job is simple; to take what you play on an instrument klavier and turn it into printed music. We confidently state that PolyWriter is the easiest-to-use, most accurate music notation system commercially available today.

Developed over a period of two years by Phil Farrand, a professional music editor and accomplished musician, in conjunction with Passport Design's software engineering staff, PolyWriter takes a great leap towards realizing the dream -- translating imagination into written music.

#### FEATURES:

- PolyWriter is fully polyphonic. It will accurately notate chords with up to 16 voices.
- PolyWriter is correct. It will properly handle ties, beaming, split-stemming, enharmonics, double-sharps, double-flats, seconds, 8vas, and more, in accord with standard notation practice.
- PolyWriter is accurate. You may select resolutions as tight as a triplet sixteenth note.
- PolyWriter is forgiving. If your playing isn't absolutely rhythmically accurate, PolyWriter adjusts it.
- PolyWriter is versatile. You can select 8 different ways to score a piece, including an Orchestral Score that allows up to twenty-eight discrete, individually recorded, polyphonic parts.
- PolyWriter is smart. Orchestral Score mode includes a library of 40 automatic instrument transpositions. Print the Conductor's score in concert pitch and each individual part in its correct transposition!
- PolyWriter is full-featured. After a piece has been entered from the klavier, you still have tremendous flexibility to edit and rewrite as you see fit. Plus you can type in lyrics for vocal parts!
- PolyWriter has a large-capacity. Music is dealt with as pages; there can be 2,512 notes per page and pages can be spread across multiple disks, meaning there is no top limit on the length of your pieces!

#### HARDWARE REQUIREMENTS:

The following hardware is required to operate PolyWriter:

- One Apple II-type computer with 64K RAM memory.
- One (two recommended) Disk Drive w/controller card.
- One Soundchaser system, or MIDI synthesizer with the Passport Designs MIDI interface card.
- One graphics-capable dot-matrix printer with graphic interface card.
- Video and audio monitors.

#### RE: Computer

PolyWriter will not operate in 48K machines; you must have at least 64K RAM in order to use it.

#### RE: Keyboard and Synthesizer

There are three versions of PolyWriter:

- Version 1.0 - for Soundchaser SC (4 Octave) Systems.
- Version 1.1 - for Soundchaser MX-5 (5 Octave) Systems
- Version 1.2 - for MIDI instruments with the Passport Designs MIDI interface card.

While the three versions are identical in operation, they are not interchangeable. You must use the correct version for your particular system.

#### RE: Printer and Interface

Your printer must be able to print high-resolution graphics, and your printer interface must support graphics as well. We find that the following interfaces work with this program: Practical Peripherals GraphiCard, Orange Micro Grappler +, Prometheus.

We find that the following printers work with this program: C. Itoh ProWriter, Apple DMP, Epson (RX-80, FX-80, MX-80/100 with Graftrax). Since PolyWriter allows you to enter printer control codes, you may use special features of your interface such as emphasized, double-width, scaled ("zoom"), or vertical printing.

### USING POLYWRITER WITH TWO DISK DRIVES

The PolyWriter program is much too large to fit entirely into RAM memory, so portions are loaded as needed. This means PolyWriter must have access to the program disk during some operations. PolyWriter is easier to use if you have two disk drives on your system. Put the program disk in Drive 1 and leave it there, then insert your data disk(s) in Drive 2.

When PolyWriter leaves our factory, it is configured for 2 drive systems. If you have one drive, press **(D)** while on the Main Menu and the program will be reconfigured to expect both the program and data disks in Drive 1, and prompt you accordingly.

IMPORTANT! System Configuration is displayed at the bottom of the Main Menu; always check it after boot-up. Improper system configuration may result in the program or data disk being erased by mistake!

Always be sure there is a write-protect tab on your program disk, and always make backup copies of your data disks.

### NOTE TO APPLE //e USERS

The CAPS LOCK key should be down at all times, except when entering lyrics in the Text Editor. If PolyWriter does not seem to be behaving as it should, check your CAPS LOCK key.

### OUT-OF-WARRANTY REPLACEMENT

YOU MUST SEND YOUR COMPLETED WARRANTY CARD TO PASSPORT DESIGNS IN ORDER TO QUALIFY FOR THIS!

After the initial 90-day warranty period, a registered owner of PolyWriter<sup>(tm)</sup> may replace damaged MASTER or BACKUP MASTER PolyWriter disk(s) for a cost of \$35 per disk. You must send us the damaged disk before we will issue a replacement.

## PolyWriter

### MAIN MENU

### GETTING STARTED

PolyWriter is a self-loading program; the easiest way to get it started is to turn your computer off, put the program disk in Drive 1, and turn the computer back on again. The drive will go into action and the "boot screen" will be displayed, informing you of the name of the program and the authors, and giving a brief sample of what PolyWriter does. After the "boot screen", you'll see the MAIN MENU:

```
** POLYWRITER (TM) 1.# **
* PASSPORT DESIGNS, INC. *

      MAIN MENU

1) CREATE
2) EDIT
3) DISK UTILITIES
0) QUIT. BOOT NEW DISK

PROGRAM DRIVE: 1
DATA DRIVE: 2
```

From the MAIN MENU you are routed to all the functions of PolyWriter. Select an operation on this menu by pressing the appropriate number key. You will go directly to the sub-menu for that function.

If you are using PolyWriter on a one-disk drive system, press **(D)** to switch the data drive to 1. You'll be prompted when it's time to swap program and data disks.

At this time check the version number (top line) to make sure you have the correct PolyWriter for your system. Version 1.0 only works on Soundchaser Four Octave Systems; Version 1.1 only works on Soundchaser MX-5; Version 1.2 only works on MIDI systems.



The four options on the MAIN MENU are:

- CREATE -- This is the transcriber; the "blank paper" you're going to write music on.
- EDIT -- This allows you to take previously created pieces and edit them, transpose them, and rearrange them as you see fit. Printing functions are also included in EDIT.
- UTILITIES -- This routes you to a sub-menu where you may either FORMAT data disks, or DELETE music files. FORMAT and DELETE are explained below.
- QUIT -- This should be self-explanatory.

#### DISK UTILITIES

You'll need to have at least one formatted data disk before you can do anything else, so we'll cover the DISK UTILITIES first. From the MAIN MENU, press ③. In the middle of the screen, a prompt appears instructing you to insert your PolyWriter program disk in Drive #1, and press RETURN. When you have done so, the following sub-menu appears:

```
DISK UTILITIES
1)  FORMAT DATA DISK
2)  DELETE FILE
<ESC> TO MAIN MENU
```

At this point you may press:

- ① - To FORMAT A DATA DISK. (Prepare a blank disk for data storage.)
- ② - To DELETE a Music FILE. (Scrap an existing piece.)
- ESC - To exit from the DISK UTILITIES and return to MAIN MENU.

#### FORMATTING DATA DISKS

Get a blank (or eraseable) disk out, and press ①. In the middle of the screen a message appears, directing you to make sure your PolyWriter program disk is in Drive #1, and then to press RETURN. Data disk formatting is a separate routine which must be brought in from the PolyWriter disk before it can be used.

After the FORMAT routine has been loaded:

- 1 - ONE DISK: You're warned that this function completely erases the disk, then prompted to remove the PolyWriter program disk from your drive and insert a blank data disk.
- TWO DISK: You're prompted to insert a blank disk in drive #2.
- 2 - When you're ready, press RETURN

When FORMAT is finished, you are asked if you wish to FORMAT another disk. If you press Y, you're prompted to insert another blank disk in the drive and continue FORMATTING. If you press N you're returned to the DISK UTILITIES sub-menu.

We recommend FORMATTING several data disks at this time. PolyWriter data files tend to be quite large, and quickly consume available disk space. Depending on how dense and polyphonic your music is, you may fit from 60 to 120 measures on a single disk.

#### DELETING A MUSIC FILE

After selecting ② DELETE FILES from the DISK UTILITIES sub-menu, you're prompted to make sure your data disk is in your disk drive and press RETURN. When you've done so, the contents of the disk are displayed:

```
CATALOG          046 UNITS FREE
1) WALTZ/A       032
2) WALTZ/B       016
3) SYMPH MOTIVES 012
4) NEUVO/BOP     022
5) .....       000
6) .....       000
7) .....       000

PRESS <NUMBER> TO DELETE FILE
```

The "UNITS" number to the right of each filename indicates how large the file is, and the amount of space remaining on the disk is shown at the top. A disk holds 128 units. (For those of you familiar with Apple DOS, a unit is 4 sectors, or approximately 1 kilobyte.)

To DELETE a file, simply press the appropriate number key. After the file is DELETED, you're asked if you wish to DELETE another file. If you press **(Y)** you're prompted to select the next file to be DELETED by number; if you press **(N)** you're returned to the DISK UTILITIES sub-menu.

If you wish to leave the disk CATALOG without deleting a file simply press **(RETURN)** without entering anything else to return to the FORMAT/DELETE MENU. Or, hold down the **(CONTROL)** key and press **(RESET)** to return to the MAIN MENU.

#### BACKING UP DATA DISKS

Any decent copy program, including COPYA on your Apple System Master disk, will allow you to make duplicate copies of your PolyWriter data disks. We strongly suggest that you develop the habit of making a backup copy of your data disk(s) at the end of every session. Blank disks are cheap; reconstructing a lost composition is time consuming, aggravating, and not always possible.

Since composing is often a "cut, fit, and try again" process, we've found there's an advantage to using two backup disks. Use one disk to keep the piece before the most recent edit, and the other disk to backup the latest revision. This way if an idea doesn't pan out, it's easy to "undo" the change.

#### QUICK BOOTS

Once you start working with PolyWriter regularly, you'll want to skip the "commercial" that appears on the screen when you first load the program. You may do so by pressing the **(SPACE BAR)** at any time during the presentation.

#### INSTANT POLYWRITER

Beginning on pg.16, we'll treat the CREATE process in more depth. However, for those of you who just can't wait, we now provide a quick "Step-by-Step" guide to creating with PolyWriter.

Before you begin this procedure, you must have a formatted data disk. (See pg.11) Got your data disk ready? Okay...

	POLYWRITER PROMPT	YOUR RESPONSE	EXPLANATION
1	MAIN MENU	Press <b>(1)</b> (CREATE)	PolyWriter is menu-driven for easy use. All user commands appear on screen
		Press <b>(RETURN)</b>	To move on to the next screen.
2	FILENAME?	Think of a name, type it in, and press <b>(RETURN)</b> .	Every piece has a name, of course!
3	FORM OF PRINTED OUTPUT?	Press <b>(3)</b> <b>(RETURN)</b>	PolyWriter notates in 8 formats; treble clef solo to 28-stave orchestra! Piano score is good for "getting acquainted".
4	KEY	Press <b>(RETURN)</b> 5 times, then <b>(Y)</b>	To skip the rest of the questions and get to the fun part!
5	PRESS SPACE TO START RECORDING	Press <b>(SPACEBAR)</b>	You're now ready to begin recording.  To START recording. The metronome will count off two measures, to help you get the beat.

POLYWRITER  
PROMPT

YOUR  
RESPONSE

EXPLANATION

6	RECORDING	Play keyboard.	PolyWriter is recording what you play.
	PRESS SPACE TO STOP RECORDING	Press <b>(SPACEBAR)</b>	When you've played enough press the <b>(SPACEBAR)</b> again to stop.
7	DO YOU WANT TO START OVER?	Press <b>(N)</b>	In case the first take wasn't a "keeper", press <b>(Y)</b> <b>(RETURN)</b> <b>(RETURN)</b> <b>(Y)</b> and go back to Step #5.
8	DO YOU WANT TO TRANSPOSE?	Press <b>(N)</b>	Play a part in a comfortable key and notate it in any key.
9	EDIT CURRENT FILE?	Press <b>(Y)</b>	You can review what you have done or you can keep creating.
10	DO YOU WANT TO TRANSPOSE?	Press <b>(N)</b>	You can printout parts in different keys as needed.
11	MUSIC!	Press <b>(RETURN)</b> to see the next page of music.	We think it speaks for itself.

PRINTING MUSIC

If you have a dot-matrix printer with a Grappler-type printer interface mounted in slot #1 of your computer, you may print out the music now on screen by pressing **(1)** **(P)** **(RETURN)**.

PolyWriter  
CREATING MUSIC

IN DEPTH GUIDE

After selecting **(1)** CREATE from the Main Menu, you're prompted to insert your data disk and press RETURN. You'll proceed to this screen:

```

** POLYWRITER (TM) 1.# **
* PASSPORT DESIGNS, INC. *

FILENAME:.....
FORM OF PRINTED OUTPUT: 1

1) TREBLE           5) TREBLE W/PIANO
2) BASS             6) BASS W/PIANO
3) PIANO            7) CHORAL W/PIANO
4) CHORAL           8) ORCHESTRAL

KEY: C              METER: 4
DENSITY: 7          4

RESOLUTION: 8       TEMPO: 5

<ESC> TO MAIN MENU

```

You've got to deal with all these questions before you can continue. Don't panic! Half of what you're looking at is just a menu, telling you what your choices are.

Filename

First off, locate your cursor. It should be up at FILENAME. FILENAME is, appropriately enough, the name of your composition. It can be anything, as long as it's no more than 16 characters long. Type it in and press **(RETURN)**. If you make a mistake within your filename press **(←)** to back up to the character you want to erase, and retype. Once you've accepted the FILENAME (by pressing RETURN), it cannot be changed.



### Defaults

After FILENAME, all the other questions have default answers supplied. To accept a default value, simply press RETURN.

We suggest you hold off accepting any of the defaults until you've read the next four pages.

### Form of Printed Output

This is what the 8 numbered items (Treble through Orchestral) pertain to. You must at this time pick the SCORE TYPE. Choose carefully! Once you've recorded something as, say, a PIANO score (choice #3), you cannot decide to tack on a treble line later. If you think you may want to add a treble line, you must pick score type #5 now. To help you decide, here are descriptions of the score types:

TREBLE -- One-pass transcription (no overdubbing), up to 16 voice chords notated on a single treble clef stave. Automatic ledger lines and 8va allow a pitch range from two octaves below Middle C to three octaves above it.

BASS -- One-pass transcription (no overdubbing), 16 voice chords, notated on a single bass clef stave. Pitch range from two octaves above Middle C to three octaves below it.

PIANO -- One-pass sixteen-voice polyphonic notation on Grand Staff with five octave range. Correct beaming, ties, and triplets!

CHORAL -- One-pass polyphonic notation on Grand Staff; five octave range. Correct stemming for four-part choral style with easy-to-separate soprano, alto, tenor, and bass parts.

TREBLE W/PIANO -- Treble and Piano notation, as described above, transcribed independently through overdubbing.

BASS W/PIANO -- Bass and Piano notation as described above, transcribed independently through overdubbing.

CHORAL W/PIANO -- Soprano, alto, tenor, & bass parts on two staves plus polyphonic piano score on Grand Staff.

ORCHESTRAL -- Up to twenty-eight independently-transcribed polyphonic instrument parts, each in its own transposition. Built-in library of automatic instrument transpositions; transcribe parts in concert pitch. Print conductor's score in concert pitch and performer's part in correct transposition. For more details, see the Orchestral Score Chapter (pg.81).

For your first run through CREATE mode we suggest 3) PIANO, so press 3. If you change your mind simply type a different number. Do not attempt modes 5 through 8 in your first session! When you've selected the SCORE TYPE you want, press RETURN to move on to the next question.

### Key

Select the KEY SIGNATURE you'll be playing in on the klavier. Remember that you have the capacity to transpose a piece after you have transcribed it -- so if you want the part notated in G-sharp but it's a lot easier to play in G-natural, enter G here, play it in G, and transpose it later.

When doing Orchestral scoring, enter the concert key here. PolyWriter will automatically transpose the performer's part to the correct transposition for that instrument.

To enter a key signature, press a letter key ( A B C D E F or G ), followed by either a + for Sharp keys, a - for Flat keys, or nothing at all for Natural keys. Then press RETURN.

These will always be Major key signatures. If you're working in a minor key, select the key signature for the Relative Major scale. (The keynote of the Relative Major scale is found a minor 3rd up from the keynote of the Relative Minor scale. If you are working in D minor, the Relative Major is F.)

### Meter

After selecting key signature, you must select METER. The procedure is to first enter the number of beats per measure and press RETURN, then enter the value of the beat notes and RETURN.

- Beats per measure may be any integer between 1 and 15.
- Value of beat notes may be 2, 4, or 8.

### Density

DENSITY determines how closely notes will be spaced on the printed page, which in turn determines the number of measures per line. There are ten possible densities, ranging from 0 (tightest) to 9 (widest). Select your DENSITY by pressing a number key.

The actual number of measures per printed line depends on how you play. If you're transcribing The Flight of the Bumblebee, your DENSITY should probably be 9. If you're going to transcribe Pachelbel's Canon, you can use a DENSITY of 2 or 3.

Choose your DENSITY carefully; it cannot be changed after transcription. 8 is a good density for working out ideas; it allows plenty of open space for edits. Remember, paper is cheap.

### Tempo

This is the TEMPO you will be entering the piece at, not the performance tempo. There are 10 possible tempi; select a TEMPO by pressing a number key (0 through 9).

In Version 1.0, a TEMPO of 0 approximately corresponds to a metronome marking of 46; a TEMPO of 9 is approximately 92.

TEMPO NUMBER	0	1	2	3	4	5	6	7	8	9
	+-----+-----+-----+-----+-----+-----+-----+-----+									
METRONOME MK.	46	50	54	58	63	66	72	80	84	92

In Version 1.1 and 1.2, a 0 TEMPO approximately corresponds to a metronome marking of 72; a TEMPO of 9 is approximately 176.

TEMPO NUMBER	0	1	2	3	4	5	6	7	8	9
	+-----+-----+-----+-----+-----+-----+-----+-----+									
METRONOME MK.	72	76	84	92	100	112	126	144	168	176

### Resolution

This is the last factor you must select; the accuracy with which you must play. There are six possible RESOLUTIONS:

Ⓑ	Beat resolution.
②	Half-note.
④	Quarter-note.
⑧	Eighth-note.
①	Sixteenth-note.
Ⓕ	Full resolution.

One of the past problems with computerized notation systems has been their unforgiving accuracy; they will notate exactly what you play, which usually results in great strings of 32nd-notes and rests. RESOLUTION is an automatic "rounding-off" (also called "quantizing" or "auto-correct") factor which compensates for the fact that very few humans play with absolute rhythmic precision.

For example if you've selected 8th-note RESOLUTION, all notes with a duration equal to or greater than a sixteenth note are rounded up to become eighth notes. Notes with lesser duration are ignored.

In BEAT RESOLUTION the resolution factor equals the beat note you selected in METER. FULL RESOLUTION notates exactly what you played; you may be surprised.

#### CHANGING YOUR MIND

After you've finished dealing with all the transcription variables, you're asked to confirm your choices. If you answer YES, you'll get on with transcribing. If you answer NO, you'll be returned to the KEY line. Press RETURN to skip any variable you don't wish to change, and key in new choices for the ones you do.

NOTICE: You are not allowed to change the FILENAME nor the PRINTED OUTPUT (SCORE TYPE). Once you've declared a FILENAME the file is there until you delete the file from the disk. (See DISK UTILITIES, pg.12, for more details.)

#### PolyWriter

#### TRANSCRIPTION

After you've selected your transcription options, you'll see this message in the lower left corner of the screen:

PRESS <SPACEBAR>  
TO START  
RECORDING

PART:

You'll see the name of the part you're entering displayed. In SCORE TYPES 5, 6, and 7, you'll always enter the PIANO part first (see pg.75).

#### Visual and Audio Metronome

In the lower right corner of the screen you'll see BEAT and MEASURE NUMBER. This is the Visual Metronome; it's there to help you keep track of where you are in the piece.

There is also an audible metronome, which comes through the speaker in the Apple. If you'd like a louder pulse, the metronome signal also comes out the CASSETTE OUT jack on the back of your Apple, and may be connected to an external amplifier.

#### Audio Monitor

Since you probably would like to hear what you're playing, at this time make sure your audio monitor is on and the volume is set to a comfortable level. PolyWriter will support up to 16 voices in recording or playback during overdub. If you're using a Soundchaser version of PolyWriter, though, please note that the voices don't start working until the recorder is started.

The voicing in Soundchaser versions has an "organ" envelope with immediate attack and short release. This was chosen to make durations more clearly audible. MIDI users are advised to select a similar preset on their instrument.



When you're ready, press SPACEBAR. The message switches to:

PRESS <SPACEBAR>  
TO STOP  
RECORDING

The klavier is "live" as soon as the SPACEBAR is pressed. The METRONOME counts off two measures to help you get the beat, and then the message RECORDING appears. During the two measure "count-off", if you decide you'd like a different TEMPO (or key or what-have-you), you may press SPACEBAR to stop the recorder and go back to the RESOLUTION prompt.

After the two measure "count-off", begin playing the music you wish to notate on the klavier. PolyWriter is a post-time system, which means the music is not displayed on the screen until you go into EDIT.

#### Some helpful hints about playing for transcribers

- Play legato; the "rounding" factor can cause PolyWriter to ignore staccato notes.
- Pay attention to your articulation; if you play a note before you've let go of the previous note, the "rounding" factor may cause PolyWriter to notate them as a second.
- If you make a mistake, don't worry and keep playing. You can always fix it later, so long as you've got the basic rhythmic sense of it down.

#### Starting Over

When you have entered everything you wish to notate, press the SPACEBAR to stop recording. You'll be asked:

WOULD YOU LIKE TO START OVER (Y/N) ?

If you decide to start over at this point (by pressing Y), you'll do just that: Start over. The music you just played in will be erased and you'll return to the RESOLUTION question.

You can not "tack on" a few more measures to the end of a transcribed piece; if you want to extend the music you must open a new file, and add a new "page".

If you decide not to start over (by pressing N), your music is converted into notation files and saved on the disk.

#### Meter Changes & Modulation

What we've just said about extending a part also holds true for meter changes and key changes in the middle of a piece.

For example, if you want the first 20 measures of a piece in  $4_4$ , and the next 12 measures in  $3_4$ , you must first transcribe the  $4_4$  section as one file. Then you must open a new file for the  $3_4$  section.

This may sound a little cumbersome, but in fact is quite easy and allows you extremely wide notational flexibility. You can freely change key, meter, tempo, density, resolution, or printed form as you like. This allows you to, say, write a Largo  $4_4$  section in the key of D-sharp for choir with piano, then give the soprano an Allegro  $3_4$  solo in the key of G.

#### TRANSPOSITION

After you have played the part and decided it's a keeper, you're asked if you want to TRANPOSE it. Transposing is easy; enter + to transpose up, or - to transpose down, followed by the number of half-steps (maximum = 9) up or down you wish to transpose it.

For example, if you wished to transpose the entire part a Major 3rd up, you would type: **(+)** **(4)** **(RETURN)**

If you elect to TRANSPOSE at this time, the entire piece, including the key signature, will be transposed. It will be as if you had been working in the transposition all along, and the piece will be saved in the transposed key.

Sometimes using TRANSPOSE will result in an ambiguous key. For example, if you enter a piece in C, then TRANSPOSE it **(+)** **(3)** half-steps, the resulting music could be in either D# or Eb. In this case you'd be shown D#/Eb?, and asked to choose the key by pressing either **(D)** or **(E)**.

If you chose not to TRANSPOSE, the piece will be saved in the key you played it in.

In either case, after the piece is automatically saved, you are routed to the DISK CATALOG. Please turn to the next chapter.

PolyWriter

EDITING MUSIC

There are two ways you can get to the PRINT/EDIT MENU:

- 1) At the end of a CREATE session you are automatically brought here.
- 2) By selecting option #2 from the MAIN MENU.

In either case, you must pass through the DISK CATALOG first (your filenames will be different, of course):

```
          ** POLYWRITER (TM) 1.# **
          * PASSPORT DESIGNS, INC. *

CATALOG
1) WALTZ/A
2) WALTZ/B
3) SYMPH MOTIVES
4) NEUVO/BOP
5) .....
6) .....
7) .....
```

If you are coming here from a CREATE session, you're asked if you want to EDIT THE CURRENT FILE? Sometimes you may not want to; at those times answer NO by pressing **(N)**. Otherwise, answer YES by pressing **(Y)**.

When going to the PRINT/EDIT MENU from the MAIN MENU, or if you've elected not to EDIT THE CURRENT FILE, you're asked to pick a file to edit by pressing its number.

You may return to the MAIN MENU by pressing **(CTRL)** **(RESET)**.

### EDIT PAGE TRANSPOSITION

After a file has been selected for EDITING, you'll see the prompt: DO YOU WANT TO TRANPOSE (Y/N)? As usual press either **(Y)** for YES or **(N)** for NO.

Transposition here is different from transposition at the end of a CREATE session; this transposition is temporary, for EDITING or (more often) PRINTING purposes only, and is not saved to disk. This allows you to store a part in an original key, and print it out in different keys as needed.

In SCORE TYPES 1 through 4, the TRANPOSE command uses normal syntax: enter either **(+)** for up or **(-)** for down, the number of half steps (maximum 9), and then press RETURN .

If you are working in SCORE TYPES 5, 6, or 7, there is another way transposition is different. You may selectively transpose either the soloist's part, the piano part, or both. This is very handy when working on music for piano and solo instrument.

In SCORE TYPES 5 through 7, transposition uses a different command syntax:

To transpose only the top (soloist or or choral staves),  
Enter **(T)** **(+)** or **(-)** and the number of half steps,  
and press **(RETURN)** .

To transpose only the bottom (piano) staves,  
Enter **(B)** **(+)** or **(-)** and the number of half steps,  
and press **(RETURN)** .

To transpose both the top and bottom staves,  
Enter **(T)** **(+)** or **(-)** the number of half steps **(,)** **(B)**  
**(+)** or **(-)** and the number of half steps, and then press  
**(RETURN)** .

After entering the transposition command(s), the new key(s) are displayed and you're asked if this is what you intended. If so, press **(Y)** to go on.

### VIEWING YOUR MUSIC

Having selected a piece to Print or Edit and transposed it (or pressed **(N)**), you'll arrive at the first page of your music. Beautiful, isn't it?



As a general rule music is divided into "pages" of four staves or two Grand Staves (Piano & Choral scores) each. To VIEW the next page without editing, press **(RETURN)**. You cannot "turn back the page" after pressing **(RETURN)**. When all the pages have been viewed, you'll return to the MAIN MENU.

From the MAIN MENU, you need to re-select EDIT and re-select this piece from the DISK CATALOG in order to EDIT or PRINT it.



## THE PRINT / EDIT MENU

When there's music on the screen, all of the EDIT functions are available. The EDIT prompts will appear on the Music Editing Screen as abbreviations, which may seem a little arcane until you become familiar with PolyWriter's Music Editor.

Therefore, you may press **CONTROL** **C** at any time to flip to a MENU SCREEN listing the current options. Press **CTRL** **C** again to flip back to the MUSIC EDITING SCREEN. Do this a few times to get comfortable with this feature.

Initially, the MENU SCREEN looks like this:

```
1) PRINT MUSIC
2) EDIT MUSIC
3) EDIT TEXT

CURRENT FILE: OPUS.#1
FORM OF OUTPUT: PIANO

<ESC> TO MAIN MENU
```

To make a selection from this PRINT/EDIT MENU, press a number. In the rest of this chapter we'll cover Music Editing functions, so press **2**. After selecting the EDIT MUSIC option, the MENU SCREEN changes to:

```
MUSIC EDIT


C)HANGE
A)DD
D)ELETE
```

Press **CTRL** **C** to return to the MUSIC EDITING SCREEN. (Remember: **CTRL** **C** toggles between MENUS and MUSIC.) Before we explain how to use CHANGE, ADD, and DELETE, we'll tour the Music Editing Screen.

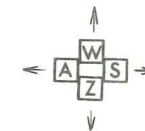
## MUSIC EDITING SCREEN GLOBAL COMMANDS



### The Cursor

In the upper left hand corner of the screen you'll find a **1**, telling you which staff you're currently editing, and a little lower a  cursor, which is used to point to the specific note being edited. Use these keys to move the cursor around the screen:

- CTRL** **W** -- Move UP one dot.
- CTRL** **Z** -- Move DOWN one dot.
- CTRL** **A** -- Move LEFT one dot.
- CTRL** **S** -- Move RIGHT one dot.
- SPACEBAR** -- Move RIGHT ten dots.
- /** -- Down one stave.
- CTRL** **C** -- Toggle between MUSIC SCREEN and MENU SCREEN.



On the Apple //e these keys automatically repeat; Apple II+ owners may use the **REPT** key for cursor scrolling. The cursor is "bounded" by the Editing Zone. If you scroll off the right edge of the screen the cursor "wraps around" to the left side, and vice versa. If you scroll too far down you'll wrap to the top of the Editing Zone, and vice versa.

### Editing Zones

Each staff is a separate EDITING ZONE, which allows faster screen redrawing after edits and faster cursor movement. When you first enter EDIT mode, the cursor is located in the first ZONE, or the top staff (as indicated by the number 1 at the top of the screen). To work on another staff you must select it by pressing ⌘. The number in the upper left will change accordingly.

### Erase and Redraw

Sometimes editing operations leave extraneous material on the screen when they're finished. You may ERASE unwanted, extra-neous, markings permanently by placing the cursor over them and pressing CTRL D.

On occasion, an EDIT function may erase stems or ledger lines in a neighboring zone. To REDRAW an Editing Zone and recover things you may not have wanted to erase, use the ⌘ key to move the cursor into the appropriate Zone and press CTRL R.

### Edit Prompt Line

In the top left corner of the Music Screen you'll find the number of the Editing Zone (staff) the cursor is in, and the current Edit MODE (C, A, D, or blank). As you enter specific CHANGE, ADD, or DELETE commands, prompts appear here to list your options and remind you of what you're doing.

To back up one step in a Music Edit command, press CTRL E

To back out to PRINT/EDIT level, press CTRL X (You won't actually see the MENU unless you press CTRL C.) This backs out of the current Edit command and MODE.

To save the page you've edited and proceed to the next page, first press CTRL X to back out to PRINT/EDIT level, and then press RETURN.

To exit from PRINT/EDIT level without saving your current page, and return to the MAIN MENU, press CTRL X and then ESC.

### Main Editing Functions

Once you've elected to EDIT MUSIC and are in the Music Editing Screen (look for the ⌘ cursor), there are three basic types of changes (Edit MODES) you can make to the notated music. Press CTRL C to view the Edit MODE menu:

MUSIC EDIT C)HANGE A)DD D)ELETE
--

To select an Edit MODE press the appropriate key: C, A, or D.

CHANGE. CHANGE allows you to rewrite the pitches, polyphonic textures, or durations of existing notes. This allows you to do anything from tidying up rough spots in your original playing, to notating things you can't physically play yourself by entering something during transcription and changing it around later.

CHANGE also allows you to manually lay out your page, if you don't like the way PolyWriter spaced the notes.

ADD. This function allows you to insert new material without changing already existing material. For example, if you have an alto part written on a treble staff, you can ADD a soprano part on the same staff.

However, you cannot extend the length of the piece beyond that which you have already transcribed. You can't "tack on" a few more measures at the end, or "wedge in" an extra measure in the middle.

DELETE. This allows you to DELETE notes, accidentals, ties, or 8va markings on the page. DELETE has one major limit: you can't "delete and close up" entire measures. DELETE does not actually erase notes; rather it replaces them with the equivalent rests. Deleting a measure results in a whole-rest measure.

### CHANGING

After selecting this option by pressing **C** from the Edit MODE Menu, a "C" appears next to the Editing Zone/Staff number, and you're shown an abbreviated list of the music items you're allowed to CHANGE. (This list is called a "pop-up menu".)

IC      N)OT   D)UR   P)OS   S)TM   2)ND   E)NH



The six items are: Notes, Duration, Position, Stem direction, 2nds, and Enharmonics. You select an item by pressing its letter or number.

#### Changing Notes

This allows you to change the pitch of notes or chords without changing the duration.

To CHANGE a NOTE:

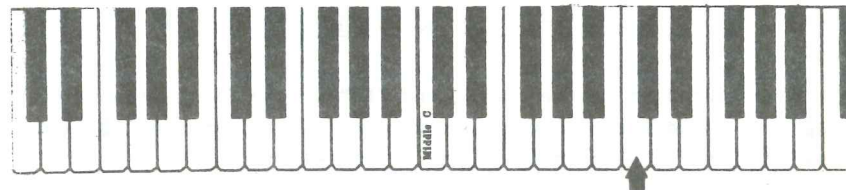
- 1) Place the cursor on the head of the note to changed.
- 2) Select **N** (for NOTES) from the pop-up menu.



and press **RETURN**.

(NOTE: If you are not positioned correctly the computer will "beep" once. Reposition the cursor and press **RETURN** again.) When you have positioned the cursor properly and pressed **RETURN**.

- 3) The computer emits two "beeps" and places a question mark after the "1CN" in the upper left corner. This is your cue to hold down the new note (or notes) on the klavier...



and press **RETURN**.

The computer will beep once to acknowledge your input, and the staff is redrawn with the new change in place.



#### Change with No Klavier Entry

If you're not holding anything down on the klavier when you press **RETURN**, PolyWriter will automatically insert a Middle C and beep twice.

#### Changing Chords

If you're changing a chord, it's only necessary to place the cursor on one of the notes in the chord; the chord is treated as a unit. Also remember, single notes may be changed into chords, and chords may be changed into single notes.

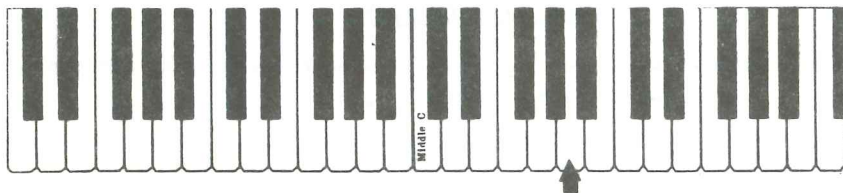


### Changing to Non-Scale Pitches

CHANGE NOTES requires all material to be entered in natural form, with accidentals added later. For example, consider the following music notated in the key of D Major:



If we wanted to change the second "F#" in the first measure to a "A", we would first have to position the cursor on the "F#" and press RETURN, then hold down "A" on the klavier...



and press RETURN.

The result would be notated like this.



Then, using the ADD ACCIDENTAL function (pg.52), we would add the #.

You might ask, "Why can't I just hold down the "A#" key?" The answer is, PolyWriter has no way of knowing whether you mean "A#" or "Bb". When you attempt to enter ambiguous notes, it will beep three times, to suggest that you try again.

### Changing Notes in Transposition

If you have elected to do a Music Edit Screen transposition (the temporary transposition after the DISK CATALOG -- see pg.27), you must remember, when changing notes, to enter all your changes in the original key.

For example, consider the following music:



The music was transcribed, and saved to disk, in the key of C Major. Now we're EDITING a part for a Bb trumpet player, so when we brought the music back from the disk we transposed it up 2 half-steps, into D Major:

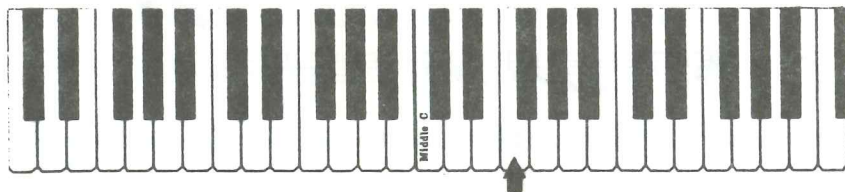


Now, suppose we want to change that first "D" to an "G". We position the cursor on the note, press RETURN, and the computer beeps twice, prompting us to select a new pitch on the klavier. So we hold down the "G" and press RETURN again. And the "D" changes to an "A"???



Remember, we've got a "plus 2 half-steps" transposition in effect. So anything entered from the klavier in editing will be automatically transposed up 2 half-steps.

To get the "G" we desire, then, we must hold down an "F" on the klavier. Which means, this:



Given a transposition of "+2", yields:



#### Changing Normal & Controlled Notes

Consider the following music, and the question of changing the pitches in the interval at the beginning of the first measure:



If we were to place the cursor on one of the notes in the interval and give PolyWriter the CHANGE NOTES command, it would simply place a "?" after the "LCN" prompt.

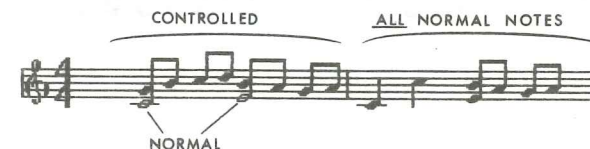
Press **CTRL C** to flip to the MENU SCREEN, and sure enough, at the bottom of the screen it's asking:

NORMAL OR CONTROL?

What's that all about? Well (as is also explained beginning on pg.46), when you're doing polyphonic notation with proportional spacing, there is one sticky problem that pops up now and then. Sometimes you will have several notes of different durations which occur during the same span of time. When this is the case the question becomes, which notes do you use to determine the graphic layout of the measure?

The solution we adopted is to divide notes into two classes: NORMAL notes, and CONTROLLED notes. The NORMAL notes determine the layout of the measure, and the CONTROLLED notes have their placement controlled by the NORMAL note.

95% of the time, the NOTES you're CHANGING will all be NORMAL notes, and you won't even run into this question. But when you do run into it, remember that the NORMAL note is the note with the longest duration. So, in the example:



The half-note is the NORMAL note, and the eighth-notes are all CONTROLLED notes. When you move the cursor onto the interval at the start of the first measure and ask to CHANGE NOTES, PolyWriter sees two separate music events there (a NORMAL note and a CONTROLLED note) and needs to know which one you wish to change. You may change the pitch of the NORMAL note or the pitch of the CONTROLLED note, but not both at the same time.

### Other Uses of Change Notes

In addition to giving you the opportunity to fix errors in your playing, CHANGE NOTES is also a great resource for composing.

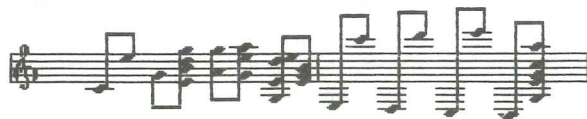
We all have times when we wish to notate a part for another performer which is difficult to play ourselves. By playing the correct rhythm on a single key during transcription, we can allot space and "raw materials". Then, using CHANGE, we can insert the pitches we really want afterwards.

Another instance is when we wish to notate exceedingly complex or fast-changing polyphonic textures. Again, by playing just a few voices in the correct rhythm during transcription we allot space and "raw materials" to construct what we really want later. Once the measures are in place we can change those simple notes into dense chords and clusters.

As an example the following part was entered from the klavier:



And then, using CHANGE NOTES, was turned into this:



### Changing Duration

Place the cursor on the note to change and press **(D) RETURN**. (If the computer beeps at you, you missed the note -- try again.) In this example, we'll change the half note to a dotted-quarter.

1CD



When the cursor is "on target", you're prompted with a "?" to enter the duration code for this note.

Here are the codes for valid durations:

- 1 = Whole Note.
- 2 = Half Note.                    .2 = Dotted Half Note.
- 4 = Quarter Note.                .4 = Dotted Quarter Note.
- 8 = Eighth Note.                .8 = Dotted Eighth Note.
- 0 = Sixteenth Note.

Triplets are indicated by typing a "3" before the note value.

- 34 = Triplet Quarter.
- 38 = Triplet Eighth.
- 30 = Triplet Sixteenth.

Enter the new duration code for the note being changed, and then press **RETURN**. In this example, we enter **(.4) RETURN**.

1CD?





Note that, since the new duration is smaller than the previous duration, rests were added to make up the difference. Rests are automatically added or deleted when the durations of notes change.

YOU CANNOT EDIT RESTS. Rests are automatically drawn by PolyWriter and are defined by the notes around them. To CHANGE a rest's DURATION you must CHANGE the DURATION of the notes BEFORE or AFTER the rest.

Beyond adding or deleting rests when Changing Duration, PolyWriter does not check rhythmic correctness. If you want a dotted half note in the middle of a  $\frac{3}{8}$  measure, that's your business.

#### Changing Position

The spacing of notes, and the number of measures per line, is determined by your choice of recording density (pg.19). While you can't change the number of measures per line, CHANGE POSITION lets you change the layout of notes within the measure.

This is especially handy when matching up music to text; words often spell-out longer than the time it takes to sing them.

To change the position of a note or chord, place the cursor on the note to be moved and enter **P** (for Position) **RETURN**.

1CP



If the cursor isn't positioned quite right, you'll hear a "beep". When the cursor is positioned correctly (and **RETURN** is

pressed), you'll see a "?" prompt, which is your cue to move the cursor to the desired new location of the note.

1CP?



With the cursor positioned in the new location, press **RETURN**. The staff is redrawn with the note moved to its new location.



There are four things to remember when using Change Position:

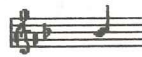
- 1) This only affects the horizontal spacing. If you want to change pitch, use Change Notes.
- 2) You cannot reposition rests.
- 3) You cannot reposition bar lines.
- 4) Be careful not to reposition notes on top of other notes.

### Change Stem

This is a simple switch; place the cursor on the note whose stem you wish to change and press **(S)** (for Stem).



If the stem was up, it flips down. If the stem was down, it flips up. If the stemming was correct for this kind of score, nothing will change.



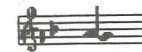
This is a particularly useful command for distinguishing voice leading in Choral scores. (See Adding a Split Stem, pg.52, and Appendix A: STEMMING, pg.89, for more insight on how PolyWriter handles stems.)

### Change Second

The correct way to notate a second is like this:



However, between klavier play and the rounding factors in resolution (pg.20), PolyWriter will occasionally notate a second like this:



If you wish to change the appearance of the second, place the cursor on the notehead on the "normal" side of the stem (the left notehead for an up stem, the right notehead for a down stem), and press **(2)** (for Second). The change is immediate; the staff is redrawn.

### Change Enharmonic

When it comes to dealing with non-scale pitches (say flat 3rds in a Major scale) PolyWriter has some limited knowledge of theory. It will handle minor, diminished, and augmented pitches correctly when in the context of chords, but there will be occasions when it marks a lone note **B $\flat$**  when you meant **A $\sharp$** .

To change a note to its enharmonic, place the cursor on the note and press **(E)**.



BEFORE



AFTER

The change is immediate; the staff is redrawn with the note changed to its enharmonic.

**REMEMBER:** The Editor assumes you want to stay in the CHANGE mode until you cancel CHANGE mode. To quit CHANGE mode, press **(CTRL) (E)** to back out of the command codes until the CHANGE prompt (the "C" next to the Editing Zone/Staff number in the top left corner of the Music Editing Screen) disappears, leaving only the Editing Zone/Staff number.

To SAVE the page you've been working on, press **(CTRL) (X)** to back out to PRINT/EDIT level, then press **(RETURN)**. The page will be saved and the next page of the piece is displayed on the Music Editing Screen.

To ABANDON any and all changes made on a page, and not save it, press **(CTRL) (X)** to back out to PRINT/EDIT level, and press **(ESC)**. You will return to the MAIN MENU.

## ADDING

After selecting this option by pressing **(A)** from the Edit MODE Menu, an "A" appears next to the Editing Zone number, and you're shown a pop-up menu of the music items you are allowed to ADD:



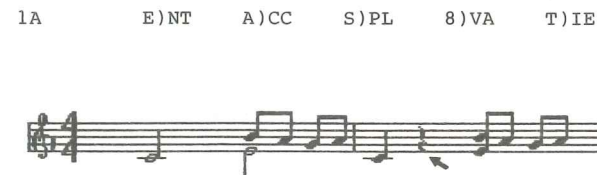
The five items are: Entry, Accidental, Split stem, 8VA (up or down), and Tie. Select the item to ADD by pressing its letter or number and pressing **(RETURN)**.

### Adding an Entry

In many respects, adding a note entry to an existing file is the most complicated thing you can do. (We advise reading through this entire procedure before trying it out.)

**Step 1:** Locate the measure you wish to add material to. With the appropriate music page on screen, press **(V)** to move the cursor into the correct Editing Zone. (In fact it's a good idea to press **(V)** to initialize the cursor even when it appears to be in the correct zone.)

In this case, we're going to add a note in the second measure of the first staff. With the cursor positioned in Editing Zone 1, use the normal cursor commands to place the cursor within the measure you're going to ADD to. (You don't need to place the cursor precisely at the point of insertion.)



**Step 2:** Now you may select E)NT from the ADD MENU by pressing **(E)** and pressing **(RETURN)**. At this point, the computer begins issuing a series of prompts. Press **(CTRL) (C)** to flip to the MENU SCREEN and see what they are.

**Step 3:** The first prompt is, NORMAL OR CONTROL?

The space allotted to a note within a measure is usually an indication of the durational value of the note, relative to the other notes in measure. A half note takes up about half the measure; an eighth note considerably less.

The actual length of the measure on the printed page then becomes a result of how many notes are packed into the measure, what their durations are, and how the density was set. When doing single-note lines, laying out the notes on the page is a pretty simple process.

In polyphonic notation it gets considerably more complicated. It is entirely possible to have notes of different



durations which begin at the same time, or notes that begin and end at different points during the same span of time. Which notes do you use to determine the graphic layout of the page? That is a problem.

The solution we adopted in PolyWriter was to divide notes into two classes: NORMAL and CONTROLLED notes.

CONTROLLED NOTES are notes which occur during the time span of a larger-duration note. We call them CONTROLLED notes because their graphic placement is controlled by another note. In this example the half-note controls the graphic placement of the eighth-notes so the eighth-notes are all CONTROLLED notes.



A NORMAL NOTE is any note that isn't a CONTROLLED note. In the above example, the half-note which controls the eighth-notes is a NORMAL NOTE.

In the example below, all the notes are NORMAL NOTES.



Press **(CTRL) (C)** to flip back to the Music Editing Screen, look at the measure, and decided whether the note you're adding is going to be a Normal or Controlled note. Then press either **(N)** or **(C)**.

Step 4: The next prompt is, BEAT?

PolyWriter needs to know which beat of the measure you're putting the new material in to. Answer by entering the number of the beat.

For example, there are four beats in a <sup>4</sup>/<sub>4</sub> measure. If we wanted to add a note that occurs during the second beat we would enter **(2)**.

Step 5: NUMBER OF NOTES IN?

Step 6: KIND OF NOTES IN?

We group these prompts together because they're two parts of the same question. What you're being asked is, "How far along in the time span of the beat do you want to place the new entry?"

In the example, we've already decided to place the new entry in the second beat of the measure. But there are a lot of different music events that could occupy one beat of <sup>4</sup>/<sub>4</sub> time.

It could be a single quarter-note:



It could be two eighth-notes:



It could be an eighth-note triplet:



It could be four sixteenths:



The possibilities go on and on. The point is, PolyWriter needs a way to distinguish between when you mean...

This:



And when you mean this:



Adding a quarter-note to the example is easy enough. Since there can only be one quarter-note in a quarter-note beat, we would answer the NUMBER OF NOTES IN? prompt with ①, and the KIND OF NOTES IN? prompt with ④ (the duration code for a quarter-note - See pg.50).

But let's say for the sake of argument, that what we want during the second beat of the measure is an eighth-rest followed by an eighth-note.

Remember, we edit notes, not rests. As far as the Poly-Writer Music Editor is concerned, rests "don't exist". The editor and the data files only deal with notes; rests are inserted by the graphics routines during screen display or printout.

This means we can't just "type in" a rest and a note. We have to tell it where to place the note, and it'll add rests automatically.

So, looking at the ENTRY we want to ADD, we realize that the KIND of note we want is an eighth-note; there can be two eighth-notes in a quarter-note beat; we're going to place our eighth note in the second half of the beat; the first half of the beat will be filled by an automatically-placed rest.



So we'd answer the NUMBER OF NOTES IN prompt by entering ② and the KIND OF NOTES prompt with ⑧.

Always remember: The answers to these two questions are contingent upon the kind of notes you're adding and the meter you're working in. If we'd been adding a sixteenth note, or working in  $\frac{7}{8}$ , the numbers would be different. For example,  $\frac{6}{8}$  time is conducted as two dotted-quarter-note beats, so there are three eighth-notes in a  $\frac{6}{8}$  beat.

Here are the codes for the kinds of notes you can work with:

1 = Whole Note.	
2 = Half Note.	.2 = Dotted Half Note.
4 = Quarter Note.	.4 = Dotted Quarter Note.
8 = Eighth Note.	.8 = Dotted Eighth Note.
0 = Sixteenth Note.	

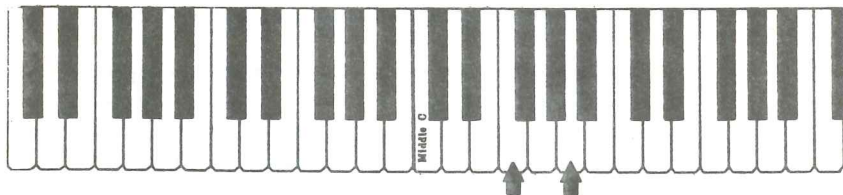
Triplets are indicated by typing a "3" before the note value.

34 = Triplet Quarter.
38 = Triplet Eighth.
30 = Triplet Sixteenth.

#### Step 7: DURATION?

The last visual prompt in the ADD ENTRY process asks for the DURATION of the note being entered. Use the duration codes listed above.

Step 8: After you've entered the duration code, the computer will emit two "beeps". This is your cue to select the pitch or pitches to be ADDED by holding it/them down on the klavier, and pressing RETURN.



After you press **RETURN** you'll hear one beep if your response was recognized and entered, and the staff you're working in will clear and redraw, with the new material included.

If the computer beeps twice and draws Middle C, either you weren't holding anything down on the klavier, or you may have misidentified the note at the NORMAL OR CONTROLLED? prompt. Try again.

If the computer beeps three times, you're holding down a key that would require an accidental. Remember, you must enter notes in natural form, and ADD ACCIDENTALS later. (See pg.52)

**Step 9:** If you're looking at the Menu Screen, the DURATION prompt will be replaced by CHOICE. Press **CTRL C** to flip to the Music Editing Screen, and see your addition.



### Adding an Accidental

To ADD (or remove) an ACCIDENTAL, place the cursor on the note in question (not the accidental), press **A** to select ACCIDENTAL from the pop-up menu, and press RETURN.



If your computer beeps at you, the cursor isn't quite on the note. Adjust and try again. When you're properly "sighted in" on the note, you'll be prompted with a "?". Press either:

- S** = Sharp ( # )
- N** = Natural (  $\natural$  )
- F** = Flat (  $\flat$  )

The staff is redrawn, with the ACCIDENTAL in place.



### Adding a Split Stem

Since any given note's stem direction can be changed by your use of TRANSPOSITION and CHANGE NOTES, PolyWriter handles stemming dynamically at the time the note is put on the screen. This means stemming will automatically be correct and in accord with current standard notation practices.



On occasion, you may wish to depart from standard practice in order to indicate voice leading, fingering, or mallet usage. In these situations, use the ADD SPLIT STEM function and the closely-related CHANGE STEM function (pg.43) to SPLIT notes that share a common stem, and then CHANGE the direction of one of the stems.

An essential part of using ADD SPLIT STEM and CHANGE STEM is that the Music Editor see the notes to be split as two separate music events. This means ADD SPLIT STEM and CHANGE STEM will only work in measures containing NORMAL notes and CONTROLLED notes (See pg.46). (To CHANGE STEM or ADD SPLIT STEM in a measure containing only NORMAL notes, see Appendix A: STEMMING, pg.89).

To ADD a SPLIT STEM, position the cursor on the note, interval, or chord in question:



Press **S** to select SPLIT STEM from the pop-up menu, and press RETURN. PolyWriter responds by placing a "?" after the "LAS" prompt. Press **CTRL C** to flip to the Menu Screen, and look for the question:

NORMAL OR CONTROL?

Decide whether the note is a NORMAL or CONTROLLED note, press either **N** or **C**, and then RETURN. The staff is redrawn with no apparent effect. What has happened is the dynamic stemming for that note has been turned off. You may now go to the CHANGE STEM function (pg.43), and set the stem however you like.

### Adding an 8va

If you consistently play more than five ledger lines above or below the staff you're working on, PolyWriter will automatically add octave up or down (8va) indicators during transcription.

You may on occasion want to add these octave indicators where PolyWriter didn't. To do so, position the cursor on the first note of the section that is to be 8va-ed:



Press **B** (for 8va) from the pop-up menu, and press RETURN. Assuming the cursor is "on target", you may then press either **T** (for Top of staff) or **B** (for Bottom of staff). For this example we picked **B**:



The staff is redrawn with the 8va mark, and the note is moved accordingly. To extend the 8va bracket, move the cursor to the next note of the section that is 8va-ed, and again enter **B** RETURN **T** or **B**



### Adding a Tie

You can only TIE notes of the same pitch! What appears in commercially printed music to be a tie between notes of different pitch is actually a slur, or legato mark, indicating pitch bend. PolyWriter makes no attempt to notate use of pitch bend controls.

So, given that the two notes you're going to TIE are the same pitch; position the cursor on the left note of the pair.



Select **(T)** from the ADD MENU and press **(RETURN)**. The "target" note will be tied to the following note.



If you ADD a TIE, and then use CHANGE NOTES to change the pitch of one of the tied notes, the tie marking will disappear from the screen. The tie remains in the data file, though, which means that if you later CHANGE either of the two notes so that they are both on the same pitch again, the TIE marking reappears.

**REMEMBER:** The Editor assumes you want to stay in the ADD mode until you cancel ADD mode. To quit ADDING and start CHANGING or DELETING, press **(CTRL) (E)** to back out of the command codes until the ADD prompt (the "A" next to the Editing Zone/Staff number in the top left corner of the Music Editing Screen) disappears, leaving only the Editing Zone/Staff number. Then press **(C)** or **(D)**.

To SAVE the page you've been working on, press **(CTRL) (X)** to back out to PRINT/EDIT level, then press **(RETURN)**. The page will be saved and the next page of the piece is displayed on the Music Editing Screen.

To ABANDON any and all changes made on the page and not save it, press **(CTRL) (X)** to back out to PRINT/EDIT level, and press **(ESC)**. You will return to the MAIN MENU.

## DELETING

After selecting this option by pressing **D** from the Edit MODE Menu, a "D" appears next to the Editing Zone number, and you're shown a pop-up menu of the music items you are allowed to DELETE:

1D    E)NT    A)CC    S)PL    8)VA    T)IE



The five items are: Entry, Accidental, Split stem, 8VA, and Tie. Select an item to DELETE by pressing its letter or number and pressing **RETURN**.

### Deleting an Entry

This allows you to DELETE a music event, which can be either a single note or chord. You cannot DELETE rests (CHANGE the DURATIONS of surrounding notes instead), nor can you delete bar lines.

To DELETE an ENTRY place the cursor on the head of the note to be changed (or any notehead in a chord), press **E** (for ENTRY) from the pop-up menu,

1DE



and press **RETURN**.

If the computer "beeps" once and nothing else happens, the cursor is not positioned quite right. Reposition the cursor and press **RETURN** again.

If the computer "beeps" twice, then the DELETE command has been accepted, and the staff is redrawn.

1DE



On occasion, the computer may respond by placing a "?" after the "1DE" in the upper left corner. When this happens, press **CTRL C** to flip to the MENU SCREEN, and look for the prompt:

NORMAL OR CONTROL ?

This means there are two music events which occur at the place you've positioned the cursor, and you need to specify whether you wish to DELETE the NORMAL or the CONTROLLED music event. (For a quick explanation of these two terms, see "Changing Normal & Controlled Notes", pg.37).

After deciding which event you're DELETING, press either **N** (for NORMAL) or **C** (for CONTROLLED), and press **RETURN**. The staff will be redrawn.

### Deleting Chords with DELETE ENTRY

This function is used to delete notes or entire chords and replace them with rests. If you wish to remove just some of the notes in a chord, but leave the remainder intact, use CHANGE NOTES (pg.33) instead.



### Deleting an Accidental

To DELETE an ACCIDENTAL, place the cursor on the note in question (not the accidental), press **(A)** (for ACCIDENTAL) from the DELETE pop-up menu,

1DA



and press **(RETURN)**.

The staff is redrawn.

1DA



### Deleting a Split Stem

To DELETE a SPLIT STEM, place the cursor on the notes, press **(S)** (for SPLIT STEM),

1DS



and press **(RETURN)**.

The staff is redrawn, with the split-stemming removed.

1DS



### Deleting an 8va

It is not necessary to place the cursor directly on the 8va-ed note to delete the marking, but the cursor must be in a vertical line with the note.

1D



Position the cursor, press **(8)** (for 8VA) from the DELETE pop-up menu, and press **(RETURN)**.



### Deleting a Tie

Position the cursor on the leading note of the TIE, not on the TIE marking itself. Press **(T)** (for TIE) from the DELETE pup-up menu,

1DT



and press **(RETURN)**.

The staff is redrawn.

1DT



Remember, TIES may dissappear as a result of CHANGING NOTES, but a TIE is not really gone until you DELETE it.

### PolyWriter EDITING TEXT

In SCORE TYPES 1 through 7, you also have the capacity to mix text with your music. This enables you to enter lyrics, titles, or chord symbols into your music, and print them out.

Text Editing is available whenever you have music on the screen. If you are in the Music Editor (Change, Add, or Delete functions), press **(CTRL) (X)** to back out to PRINT/EDIT level. If you are coming to the Text Editor fresh from the MAIN MENU, press **(CTRL) (C)** to see the PRINT/EDIT MENU.

- |                    |
|--------------------|
| 1) PRINT MUSIC     |
| 2) EDIT MUSIC      |
| 3) EDIT TEXT       |
| <ESC> TO MAIN MENU |

To begin entering text into your music, select option #3 from this menu.

To distinguish the Text Editor from the Music Editor, the cursors are different. The Text Editor cursor is an inverse video square **■**. The Music Editor cursor is an arrow **▼**. Check to make sure you've got the correct cursor on your screen.

You can freely switch back and forth between the Text Edit and Music Edit modes by pressing **(CTRL) (X)** to get to PRINT/EDIT level, and then pressing either **(2)** to get to the Music Editor, or **(3)** to get to the Text Editor.

A few pointers about the Text Editor:

- Apple //e users have full upper and lower case; Apple II and II+ users are restricted to upper case.
- Text lines in PolyWriter are 32 characters long.
- It's not intended to be a word processor.
- You cannot enter text into Orchestral scores.
- Text files are separate from music files; don't panic if you write a text file and then don't see words the next time you load the music.

Using the Text Editor

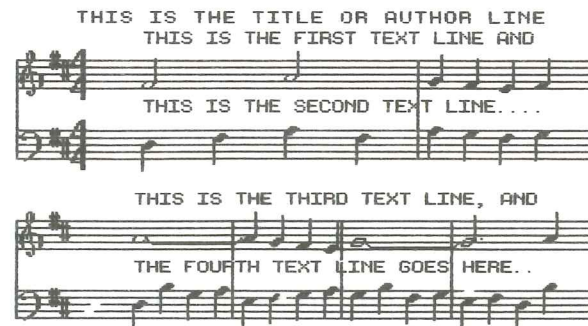
Depending on the score type you're working with, there are between three and five text areas on the screen.

The first text area is at the top of the screen and is usually used for song title, author, publisher, etc. Simply type in the information you want on this line. You may use the left arrow ← key as a backspace; you must **(SPACE BAR)** over a letter or word to erase it.

For the Text Editor, the "@" symbol is replaced by a copyright "©" symbol. Apple //e users will find the copyright by pressing **(SHIFT) (2)** ; Apple II+ users should press **(SHIFT) (P)** .

When you've put everything you want on the title line, proceed to the next line by pressing **(RETURN)**.

The other text areas are all on top of the staves. Again, just type in the text and press **(RETURN)** when you're finished and wish to move to the next line.



Character Set

This is a complete list of the characters that can be entered into music on an Apple //e.

```

A a B b C c D d E e F f G g H h I i J j K k L l M m
N n O o P p Q q R r S s T t U u V v W w X x Y y Z z
0 1 2 3 4 5 6 7 8 9
; : , . ? !
b h # ©

```



As you can see a number of them are specialized music symbols. These symbols can be printed by pressing these keys:

(CTRL) (S)	=	#	
(CTRL) (F)	=	b	
(CTRL) (N)	=	h	
(SHIFT) (P)	=	©	(Apple II+)
(SHIFT) (2)	=	©	(Apple //e)

#### Erase & Redraw

Don't be alarmed by text apparently erasing part of the music notation; this only occurs on screen and does not affect the file or the printed result. You may restore the music by pressing (CTRL) (R) (for Redraw). This will redraw the music in the Editing Zone/Staff the cursor is currently in.

#### Saving your Text, or Quitting

When you've entered all the text you wish to enter on a page, or decided to give up text editing for the moment, press (CTRL) (X) to SAVE the page and go to the PRINT/EDIT level. Press (RETURN) and the next page is displayed. After you've viewed or edited the last page of music in a file, you'll automatically return to the MAIN MENU.

#### Reviewing and Printing Text Files

Text files are saved separately from the music files. To review a text file after it is saved, it is necessary to load the music file first (through the EDIT option on the MAIN MENU), and then, at the PRINT/EDIT level, press (3) EDIT TEXT. Once EDIT TEXT has been selected, the text file will be loaded in.

Text can be printed by either PRINTING a PAGE, or PRINTING a complete SCORE. Because text files are saved separately, they can not be printed with a single INSTRUMENT line. (See pg.67 for more details on PRINT functions.)

If you elect to PRINT a PAGE, everything currently on the screen, including text, is printed out. (Press (CTRL) (C) to preview the page before printing it out.)

BEAUTIFUL MUSIC ©1984 B. BETHKE  
DMAJ7 F#MIN7 F#MIN9

THERE SHE WAS JUST WALKING DOWN

DMAJ6 D9 GMAJ7 GMAJ7

THE STREET SINGING DO WAH DIDDY

If you elect to PRINT a SCORE, all pages of the music, including text, are printed out.

PolyWriter  
PRINTING MUSIC

Music Printing with PolyWriter requires a graphics-capable dot-matrix printer and a Grappler<sup>(tm)</sup>-compatible graphic printer interface card. The interface must be mounted in slot #1 of your computer.

In theory, PolyWriter should work with any graphics-capable dot-matrix printer supported by a graphics-capable interface card. In practice, we have used it with the C.Itoh ProWriter, the Apple Dot Matrix Printer, and five different Epson printers, with satisfactory results.

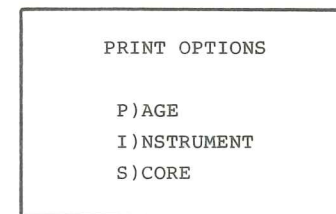
We have also used PolyWriter with the Orange Micro Grappler and Grappler+, Practical Peripherals GraphiCard, Prometheus, and Wizard printer interfaces, with satisfactory results.

HOWEVER, the single biggest cause of panic-stricken phone calls from our customers has been the configuration switches on the interface! Make sure you have the switches on the interface card set correctly for your printer. Once this is done PolyWriter will deliver fine, highly-readable printed music, and can exploit all the features of your printer interface.

Getting to the PRINT Function

To print music from PolyWriter, press (2) EDIT from the MAIN MENU. After you've gone through the DISK CATALOG and selected the piece you wish to deal with, you'll proceed to the Music Editing Screen.

With music on the screen, press (CTRL) (C) to flip to the PRINT/EDIT MENU. Press (1) PRINT MUSIC. The screen will change to read:



Make a selection by pressing the respective key. (Apple //e users, make sure your CAPS LOCK key is down!) Your choices are:

- (P) -- To PRINT the currently displayed screen page of music, including any text you may have added.



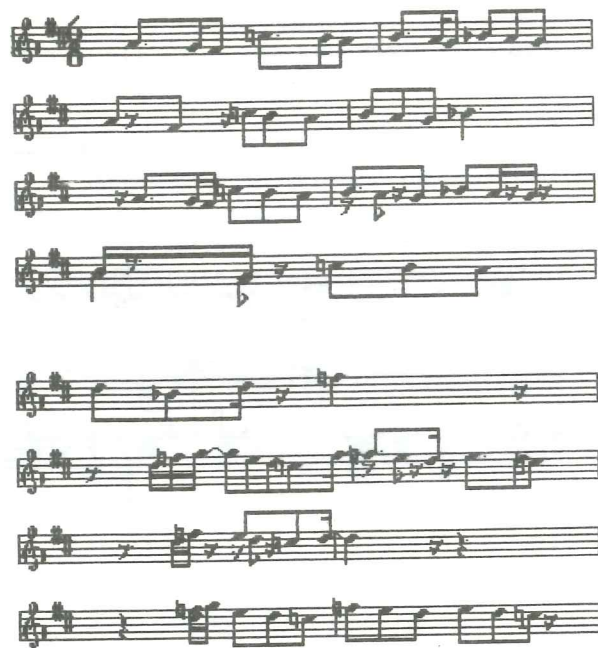
After printing the page, you'll return to the PRINT/EDIT level. You may press (RETURN) to advance to the next page of music, or (ESC) to return to the MAIN MENU.

① -- To PRINT a SINGLE INSTRUMENT line.

In score types 1 through 7, you must then press **CTRL C** to flip to the Music Screen, use the **↵** key to select the staff to be printed out, and press **RETURN**.

In score type 8 (ORCHESTRAL), you're prompted to name the instrument to be printed out.

After you've selected the single staff you wish to print (you cannot use PRINT INSTRUMENT to print both staves of a piano part), the entire part is printed from beginning to end of the piece. In ORCHESTRAL score type, the part is printed in the correct transposition.



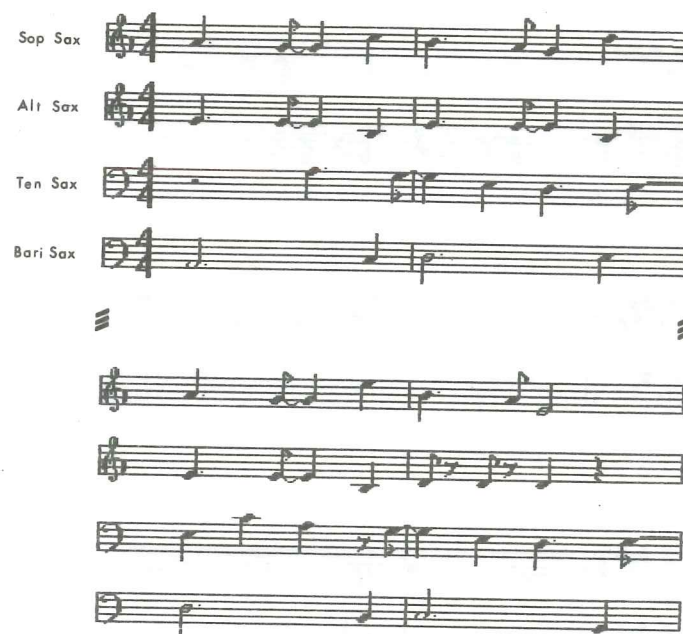
The image shows a musical score for a single instrument, consisting of four systems of staves. Each system contains four staves. The notation includes various note values, rests, and accidentals, all in a single clef and key signature.

When the entire part is finished printing out, you are automatically returned to the MAIN MENU.

⑤ -- To PRINT the ENTIRE SCORE, from beginning to end.

In ORCHESTRAL score type, the system first prints out a complete conductor's score, all parts, in concert pitch, and then individual instrument parts in transposition.

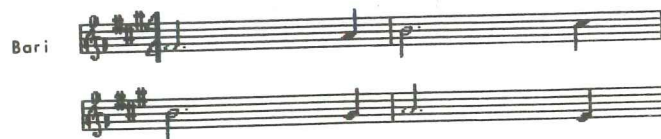
When printing large, multi-movement, multi-file pieces (see pg.24) remember to print the files in the order you want them performed in.



The image shows a musical score for multiple instruments, consisting of four systems of staves. The first system has four staves labeled 'Sop Sax', 'Alt Sax', 'Ten Sax', and 'Bari Sax'. The second system is a double bar line. The third system has four staves, and the fourth system has four staves. The notation includes various note values, rests, and accidentals, all in a single clef and key signature.



After printing is finished, you're returned to the MAIN MENU.



### Printer Code

After you've selected the type of printout you wish, you're asked to enter a printer code. This question is only presented the first time you use the print function in a session. Once this question has been answered (by either entering a code or accepting the default) PolyWriter presumes you wish to keep using the same printer code for the rest of the session. To enter a new printer code, you must reboot PolyWriter.

The printer code question allows you to use special features of your printer and interface, such as emphasized print, double-strike, double-size, or vertical printing. You may enter the appropriate code here, or press **RETURN** to accept the default mode of normal-size, one-strike printing.

### Graphic Page

PolyWriter uses Hi-Res page 2 for all music notation. You must remember to include the page 2 reference in any custom printer code you enter, or you will get strange results.

If you choose to enter an alternative printer code, note that the symbol "^" stands for CONTROL. You would enter ^I by holding down the **CTRL** key and pressing **I**. The following codes are for Grappler and Grappler-compatible interfaces.

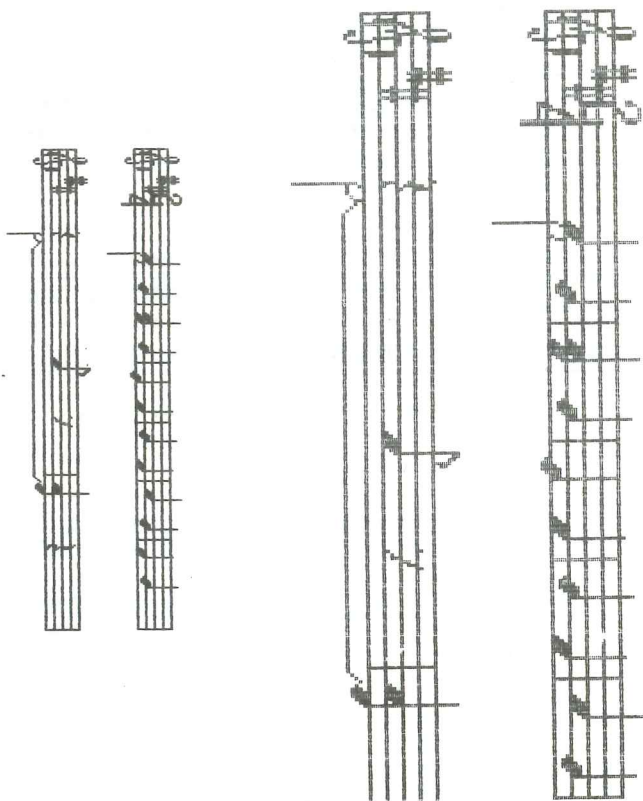
^I G 2 (Default) Normal, horizontal print.

^I G 2 E Horizontal print, bold.

^I G 2 R Vertical print.

^I G 2 R D Vertical print, double-size.

Samples of the results achieved with different printer codes are on the next page. Of course, you may make up your own combinations of these codes, or use codes specific to your system.



### Printing a Single Instrument, Orchestral Score Type

The simplest way to print an individual instrument part from an Orchestral (Type #8) Score is, when given the option at the start of Edit to view either a single instrument or four instruments, to elect to edit the single instrument part.

Then, when you have the part on the Music Editing Screen, elect to print either Page or Score. Choosing to print Instrument produces identical results to printing Score.

### EXITS from Print

After you've finished either an Instrument or Score print, you'll be returned to the MAIN MENU.

After you've finished a single Page printout, you'll return to the PRINT/EDIT level. From there you may press **(ESC)** to return to the MAIN MENU, or **(RETURN)** to move to the next page of music.

You may also select the Edit Music or Edit Text options. This is very convenient for trying out an editing idea, getting a quick print of it "for the record", and then trying out different ideas.

## PolyWriter

### OVERDUBBING

In this chapter we'll explore the differences between working with SCORE TYPES 1 through 4, and SCORE TYPES 5 through 7.

To review:

- Type #5 is Treble Clef, with Piano Accompaniment.
- Type #6 is Bass Clef, with Piano Accompaniment.
- Type #7 is Choral on Treble & Bass Clefs, with Piano Accompaniment.

All three of these are two-pass processes. After selecting CREATE from the MAIN MENU, and going through the set-up screen (see pg.16), you record the piano part. Then, after accepting the piano part as a "keeper", you immediately record the solo or choir part. You cannot defer putting down the second track.

### TRANSCRIPTION

#### Monitoring while Recording Two-Pass Score Types

Turn up your audio monitor. You'll hear the piano track played back in sync while recording the second track, which is an invaluable aid to recording a good second track.

Version 1.2 (MIDI) users should remember, though, that some MIDI instruments have as few as five voices. This may result in your not hearing everything on the piano track while recording the

second track. Don't worry. PolyWriter still notates the keys you press, even if no sound is heard.

### Metronome

Pay special attention to the BEAT and MEASURE numbers in the lower right corner while recording the piano part. These numbers are valuable reference points when recording the second part.

### Recording the PIANO Part

After selecting your SCORE TYPE, and answering all the other questions about your music, you proceed to the prompt:

```
PRESS <SPACEBAR>  
TO START  
RECORDING
```

```
PART: PIANO
```

The PIANO part is always recorded first. Press the SPACEBAR to begin recording; as always, PolyWriter counts off two measures before beginning to record.

It is usually best to keep the piano part rhythmically simple and concentrate on getting it harmonically correct. You can add all the embellishments you want in the EDIT section, but simple parts are the least distracting to listen to during overdub.

After you finish recording the PIANO part and press SPACEBAR to stop, you're asked, WOULD YOU LIKE TO START OVER (Y/N)? If you aren't satisfied with the way you performed the piano part, this is your last chance (before EDIT) to change the PIANO part. Press Y to scrap the PIANO part you've just entered, and start over.

Assuming you press N to accept the PIANO part, the music you recorded is immediately put through the RESOLUTION filter, and rhythmically corrected. It is important to note that this is done to the PIANO part before you record the second part; meaning that



between RESOLUTION and the accuracy of your playing there may be a noticeable difference between what you heard when you recorded the PIANO part, and what you will hear when the PIANO part plays back.

#### Changes Between 1st & 2nd Parts

After you've accepted the PIANO part and it's been processed, you return to the RESOLUTION prompt on the set-up screen. Between recording the piano part and the soloist (or choir) part, you may change RESOLUTION and TEMPO. You may not change KEY, DENSITY, or METER. If the second part you're recording is for a transposing instrument, enter the part is concert pitch. You're given ample opportunity to TRANPOSE it later.

We often find it handy to slow down the TEMPO and increase the RESOLUTION after recording the piano part, as soloist parts are usually more "active" than the accompaniment.

Slowing down the TEMPO slows down playback of the piano part, allowing easy entry of intricate parts. The music is scored as if you'd played both parts at the same tempo.

#### Recording the Second Part

If you aren't sure just yet what you want in the soloist's (or choral) part, let it "time out" for the length of the piano part. That is, let the recorder run, but enter nothing from the klavier. PolyWriter will notate the part as measures of whole rests, which is okay. Think of it as raw material. Later, you can come back to the part in EDIT mode and change it.

If, at the end of recording the second part, you are not satisfied with it, you're given the opportunity to START OVER, but only on the second part. If you decide you need to redo the PIANO part before you can lay down a good soprano part, you must press **CTRL** **RESET** to return to the MAIN MENU, and start over.

#### Transposition after Recording

After accepting the second part, you're given the opportunity to TRANPOSE. Since you're dealing with two parts, you're allowed to separately transpose them. This requires a different command syntax.

To avoid transposing anything, press **(N)**.

To indicate that you wish to transpose, press **(Y)**.

If you elect to transpose, the piano part is considered the bottom part, and the single treble, single bass, or two choral staves (depending on your score type) is considered the top part.

To transpose just the top part, enter **(T)** **(+)** or **(-)** and the number of half steps you wish to transpose up or down (max.9).

To transpose just the bottom part, enter **(B)** **(+)** or **(-)** and the number of half steps you wish to transpose up or down (max.9).

To separately transpose the top and bottom parts, enter:

**(T)** **(+)** (or **(-)**) n , **(B)** **(+)** (or **(-)**) n **RETURN**

( n is the number of half steps up or down; maximum = 9)

If you enter a TRANPOSITION here, the music is saved to disk in the new key. Depending on your personal composing process, you may or may not want to TRANPOSE at this time. For example, if you know that the TREBLE CLEF soloist part you just transcribed will always be played on alto saxophone, you'd want to TRANPOSE the top part **(T)** **(+)** **(9)**.

However, if you're not sure what instrument the soloist part may be given to, we suggest saving the part in concert pitch. You can always TRANPOSE it later.

## EDITING

### Edit Page Transposition

After proceeding through the DISK CATALOG and EDIT CURRENT FILE prompts in the usual way, you're again given the opportunity to TRANSPOSE either, or both, parts.

While TRANSPOSITION for the Music Editing Screen uses the same syntax as on pg.78, the effect is different. This transposition is for EDITING or PRINTING purposes only, and is not saved to disk.

After dealing with transposition, the remainder of the EDIT process works in the normal fashion. It is important to remember, though, that if you've done an Editing (temporary) transposition, any pitches entered from the keyboard must be entered in the concert key (see pg.36).

### Editing Zones/Staves

In SCORE TYPES 5 and 6, (PIANO w/TREBLE, PIANO w/BASS) the Music Editing Screen is laid out somewhat differently. Instead of having four Editing Zones/Staves on the screen, you have three:



The soloist's part, and two staves of PIANO. This also affects the layout of printed PAGES and SCORES (see pg.80).

In SCORE TYPE 7, there are four Editing Zones/Staves on the screen -- two choral, and two piano.

## PRINTING TWO-PASS SCORE TYPES

There is one significant difference in printing two-pass score types. In addition to printing PAGES and full SCORES, as previously described, you may also print individual INSTRUMENT parts. This, coupled with the transposition features described on the previous pages, allows you to work on pieces in concert pitch, and then print out performer's parts in different transpositions as needed.

For the purposes of printing, an INSTRUMENT part is defined as one staff. This means you may print the TREBLE clef solo part in TYPE #5 or the BASS clef solo part in TYPE #6. However, if you use INSTRUMENT to print out the PIANO part, you'll get either the TREBLE clef or the BASS clef, but not both. This also applies to SCORE TYPE #7.

To print out a single INSTRUMENT part:

From the PRINT/EDIT MENU, select ① PRINT. (If you are in Music or Text Edit mode, you'll need to press CTRL X to back out to PRINT/EDIT level first, and then CTRL C to see the PRINT/EDIT MENU.) Press CTRL C to flip to the Music Editing Screen, and note that the cursor appears on the top staff.

Use the ① key to select the Editing Zone/Staff you wish to print. Then press ① (for INSTRUMENT).

If this is the first time you've printed from PolyWriter in today's session, remember the printer code. (See pg.72)

PolyWriter will proceed to print out the part you have selected, from the beginning of the piece to the end. When it's finished, you're returned to the MAIN MENU.

PolyWriter  
ORCHESTRAL SCORE

ORCHESTRAL SCORE TYPE is the most complex and sophisticated option in PolyWriter. We also realize that many users will buy PolyWriter specifically for doing orchestral scores, and so there is a terrific temptation to make your first PolyWriter-assisted project a brass quintet.

We strongly recommend that you become familiar with the PolyWriter entry, editing, and printing systems by experimenting with SCORE TYPES 1 through 4, before tackling Orchestral Scoring.

With that said, we'll now discuss how working with type #8 scores differs from the other types.

Disk Usage

Type #8 music files are enormous. Because of the way parts can be added to an orchestral score days or even months apart, each orchestral piece should be kept on its own set of individual data disks.

In PolyWriter's DISK CATALOG, all individual instrument parts of a piece are stored under the same filename. You may work on any instrument part in the piece by selecting the piece's filename/number from the DISK CATALOG, and then naming the individual instrument. (Remember, an "individual instrument" means a single stave. You can have up to 16-voice polyphony per stave.)

Setting up for Orchestral Recording

The process of setting up to record orchestral-format music is similar to ordinary recording, except at the FILENAME and FORM OF PRINTED OUTPUT prompts.

Filename

When working with the Orchestral Score Type, you must use the same FILENAME for all parts of the piece. You can enter up to 28 discrete, polyphonic, instrument parts under a single FILENAME. Parts are entered one at a time.

Form of Printed Output

After pressing (8) to select Orchestral Score Type, the prompt INSTRUMENT: appears at the bottom of the screen. At this time you must name the instrument part you'll be entering, by typing in a four-letter abbreviation for the name of the instrument. (A complete list of the abbreviations is found on pg.87)

After typing in the INSTRUMENT name, the cursor jumps back up to FORM OF PRINTED OUTPUT prompt, allowing you to confirm your selection. Press (RETURN) to go on, or (8) to change your mind about the instrument.

Remaining Prompts

KEY, METER, DENSITY, RESOLUTION, and TEMPO are all entered as normal. Remember, when selecting KEY, that you are entering the part in concert pitch. Transposition to the correct key for the performer is handled automatically.

Because of the large number of parts in an Orchestral Score, DENSITY has limited effect. The layout of measures is fixed at 2 measures per printed line.

KEY, METER, and DENSITY are constants. You define them when you are setting up to record the first instrument



part, and you are not allowed to change them later.  
(See pg.24)

#### Recording an Orchestral Instrument Part

Recording a part for an Orchestral Score is exactly the same as recording any other score type. Again, all parts are "played in" in concert pitch (except for Contrabassoon, Contrabass Clarinet, and Bass Saxophone which are played in an octave up, and Piccolo, which is played in an octave down. The keyboard's not long enough.)

One word of caution: No other instrument parts can be longer than the first part played in, so the first part played in should be the longest part in the piece. Remember to let it "time out" through any tacet measures at the end.

Pay close attention to BEAT and MEASURE numbers on the metronome; there is no audio playback of previously recorded parts when overdubbing in Orchestral Score Type. The metronome is your only reference point.

At the end of recording a part, you'll go through the usual check on whether it was a "keeper", and are asked if you wish to TRANSPOSE. This gives you an opportunity to change the concert pitch. Remember, transpositions for player's parts are done automatically. After dealing with TRANSPOSITION you are routed to the DISK CATALOG.

#### Recording Additional Parts

If you wish to record another instrument at this time you may press **CTRL** **RESET** to leave the DISK CATALOG and go directly to the MAIN MENU. Otherwise, you're required to pick a file to EDIT, and routed into the PRINT/EDIT function. (Skip to pg.85)

From the MAIN MENU, select **1** CREATE. When you reach the FILENAME prompt (pg.82), enter the same filename you used for

the first part you recorded. Then, after selecting SCORE TYPE **8**, you're prompted to name the INSTRUMENT part you wish to record.

After you've entered the INSTRUMENT name, PolyWriter goes out to the data disk and checks to see if the FILENAME exists, and if the INSTRUMENT name you've just entered has already been used. You cannot enter two separate parts with the same INSTRUMENT name. This does not mean you can't write separate parts for players of the same instrument, though. Remember, PolyWriter is capable of 16 part polyphony per stave.

If, for example, you have two trumpet players and you want them to play different lines, you can "play in" both lines when you record the TRUMPET part, or "play in" one line and use EDIT to "write in" the second line; then mark the part "divisi" when you give it to the players.

Or, you could look for another instrument that has the same transposition, and enter the second trumpet part under an assumed name. Consulting the list of transpositions (pg.88), we discover that a CORNET part can pass for a second TRUMPET part, and so we enter CORB.

After you've entered an acceptable INSTRUMENT name and confirmed it the cursor jumps directly to the RESOLUTION prompt. As stated before, KEY, METER, and DENSITY are automatically set when adding instrument parts to an existing file. (For changing KEY or METER between movements, see pg.24.)

The remainder of the process is just like recording any other score type. Remember, though, the TRANSPOSE function before the disk catalog changes the concert key. Transposition for the performer's part is automatic.

After every additional instrument part is recorded and accepted, you're routed to the DISK CATALOG.

### Editing Orchestral Scores

After electing to EDIT an Orchestral Score, either by selecting EDIT from the MAIN MENU, or agreeing to EDIT CURRENT FILE at the end of a CREATE session, the abbreviated names of all the INSTRUMENT parts currently in the file are displayed, and you're asked:

#### EDIT SINGLE PART?

If you answer YES (by pressing (Y)), you're asked to name the INSTRUMENT part you wish to edit. Enter the abbreviation and press (RETURN). The instrument part will appear on screen, in correct transposition, and you may EDIT or PRINT it as you see fit.

If you answer NO (by pressing (N)), you're prompted:

#### CLEF 1:

This is your cue to pick the INSTRUMENT part to be displayed on the top clef (Editing Zone 1) during this EDIT session. Due to screen space limits, only four staves can be displayed on screen at any one time. However, you can pick any four instrument parts, and "mix 'n match" them as you please.

In this mode, the instrument parts will be displayed in concert pitch.

After selecting an INSTRUMENT for the top staff, you're prompted to select instruments for the three remaining staves. If you do not yet have four instrument parts recorded, enter any valid name for the "empty" clefs. The parts will appear on screen as whole rest measures.

After selecting the instrument part or parts to be displayed, you go directly to the Music Editing Screen.

Orchestral parts are EDITED in just the same way other parts are. The only caution is, when CHANGING PITCHES or ADDING NOTES while EDITING a SINGLE PART, remember that the part is transposed, and all entries from the keyboard should be in concert pitch.

### Printing Orchestral Parts

PRINT PAGE in Orchestral Score Type mode is identical to page printing in the other score types. If you're EDITING a SINGLE PART, you'll print up to 8 measures of the part you're editing, in transposition. If you're EDITING SEVERAL PARTS, you'll print 2 measures of each part in concert pitch.

If you elect to PRINT SCORE, all recorded instrument parts, from beginning to end of the file, are printed out in concert pitch, and in standard orchestral conductor's order. If you were EDITING SEVERAL PARTS before electing to PRINT SCORE, the arrangement of clefs you dictated when you began EDITING the music is disregarded.

All recorded parts are printed out. PolyWriter may add a few blank staves at the bottom of the page to "fill it out", but as a rule parts which haven't been at least "timed out" will not be printed.

After printing out a complete conductor's score, the PRINT SCORE function then proceeds to print out individual performer's parts. Each part is printed in correct transposition. After printout is finished, you're returned to the MAIN MENU.

If you elect to PRINT INSTRUMENT, you're prompted to name the individual INSTRUMENT you wish to PRINT. The INSTRUMENT part is then printed, in correct transposition, from beginning to end, and you are returned to the MAIN MENU.

INSTRUMENT ABBREVIATIONS

VOCT -- Vocal, Treble Clef	FHRN -- French Horn in F
VOCB -- Vocal, Bass Clef	HRNE -- Horn in E-flat
PNOT -- Piano, Treble Clef	TRPC -- Trumpet in C
PNOB -- Piano, Bass Clef	TRPB -- Trumpet in B-flat
PICC -- Piccolo in C	CORB -- Cornet in B-flat
FLUT -- Flute	TBTB -- Tenor Trombone in B-flat
OBOE -- Oboe	TBBT -- Tenor Bass Trombone in C
RECD -- Recorder	TBBB -- Trombone Bass in B-flat
CLSE -- Sop. Clarinet in E $\flat$	BART -- Baritone, Treble Clef in B $\flat$
CLSB -- Sop. Clarinet in B $\flat$	BARB -- Baritone, Bass Clef in C
CLNA -- Clarinet in A	TUBA -- Tuba
CLAE -- Alto. Clarinet in E $\flat$	GLOK -- Glockenspiel
CLBB -- Bass Clarinet in B $\flat$	TYMP -- Tympani
CCBB -- Contrabass Clar. in B $\flat$	ORGT -- Organ, Treble
EHRN -- English Horn	ORGB -- Organ, Bass
BSSN -- Bassoon	ORGF -- Organ, Foot
BSNC -- Contrabassoon	VLN1 -- Violin
SXSB -- Sop. Sax in B-flat	VLN2 -- Violin
SXAE -- Alto Sax in E-flat	VCLA -- Cello
SXTB -- Tenor Sax in B-flat	BASS -- Double-bass
SXBE -- Bari. Sax in E-flat	
SXBB -- Bass Sax in B-flat	

NOTE: All instruments are notated in either Treble or Bass clef.  
PolyWriter does not use C clef.

INSTRUMENT TRANSPOSITIONS

Instrument	Key	Sounds
Piccolo	C	One octave higher than written.
Flute	C	As written.
Recorder	C	As written.
Sop. Clarinet	E-flat	Minor third higher.
Sop. Clarinet	B-flat	Major second lower.
Clarinet	A	Minor third lower.
Alto Clarinet	E-flat	Major sixth lower.
Bass Clarinet	B-flat	Major ninth lower.
Contrabass Clar.	B-flat	Two octaves and a second lower.
Oboe	C	As written.
English Horn	F	Perfect fifth lower.
Bassoon	C	As written.
Contrabassoon	C	One octave lower.
Soprano Sax	B-flat	Major second lower.
Alto Sax	E-flat	Major sixth lower.
Tenor Sax	B-flat	Major ninth lower.
Baritone Sax	E-flat	Octave and Major sixth lower.
Bass Sax	B-flat	Two octave and a second lower.
French Horn	F	Perfect fifth lower.
Horn in E	E-flat	Major sixth lower.
Trumpet in C	C	As written.
Trumpet	B-flat	Major second lower.
Cornet	B-flat	Major second lower.
Tenor Trombone	B-flat	Major second lower (treble clef).
Tenor Bass Tmbone	C	As written (bass clef).
Bass Trombone	C	As written.
Baritone, Treble	B-flat	Major second lower (treble clef).
Baritone, Bass	C	As written.

NOTE: All other instruments not listed here sound as written.



## Appendix A: STEMMING

### Standard Practice

PolyWriter handles stemming dynamically, at the time the note is placed on the screen. This is done to ensure correct stemming at all times; PolyWriter always stems correctly in accord with current standard notational practice.

For example, consider a single "G" above Middle C, placed on the treble staff. PolyWriter will give that note (assuming it isn't a whole note, of course) an up stem when it is placed on the staff. However, if you were to use the Edit Screen TRANSPOSE to move everything up a fifth, the "G" would display as a "C" on the Music Editing Screen, and PolyWriter would give it a down stem.

Similarly, if you used the CHANGE NOTES function to replace the "G" with a note or chord that should be stemmed differently, the stemming would be changed accordingly. PolyWriter always stems correctly.

### Departures from Standard Practice

There are times, though, when you may wish to depart from standard stemming practice. Notating piano fingering, pitched percussion mallet usage, and in particular, choral voice leading, sometimes calls for "incorrect" stemming. In older styles of choral notation, the alto part is often down-stemmed when it "should" be up-stemmed, to distinguish it from the soprano part.

Non-standard stemming can be done on PolyWriter, but it is closely tied in with the concept of NORMAL and CONTROLLED notes. (If you are not familiar with these terms, read pgs.46 & 47 before proceeding.)

Assuming you've got NORMAL and CONTROLLED notes down, we're going to introduce you to one more concept. NORMAL notes can be further divided into two categories: NORMAL CONTROLLING notes and ORDINARY NORMAL notes.

NORMAL CONTROLLING notes are the NORMAL notes which appear in a measure containing both NORMAL and CONTROLLED notes. They are controlling the graphic placement of CONTROLLED notes.

ORDINARY NORMAL notes appear in measures containing no CONTROLLED notes.

### Changing Stems

The CHANGE STEM function (pg.43) only works on measures containing CONTROLLED and NORMAL CONTROLLING notes. It will not work in measures containing only ORDINARY NORMAL notes.

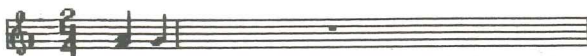
Fortunately, ORDINARY NORMAL notes can be changed into NORMAL CONTROLLING notes by using the ADD SPLIT STEM function -- but only single notes. If you have two ORDINARY NORMAL notes of equal duration which share a common stem, you cannot SPLIT them. (The reasons for this are explained beginning on pg.91.)

When you have both NORMAL CONTROLLING and CONTROLLED notes in a measure, you may change the stems of any of the notes by using the CHANGE STEM function. If the note you're changing is beamed to another note, though, you'll have to change the stemming on all the notes in the beam before the beam "flips".

When both the NORMAL CONTROLLING and a CONTROLLED note share a common stem, it is necessary to use the ADD SPLIT STEM function first, to separate the two music events, and then use the CHANGE STEM function to set each note's stem as you please.

### Splitting Stems

Now, consider the following measure of a CHORAL score. The soprano and alto lines move in parallel rhythm, which means all the notes in this measure are ORDINARY NORMAL. This in turn means PolyWriter handles stemming automatically.



An "old-school" composer would probably want to stem this differently; split-stemming the Major Third to indicate voice leading, and double-stemming the "G" to indicate a unison.

Let's deal with the Major Third first. You might think this simply a matter of using ADD SPLIT STEM to separate the two notes, then CHANGE STEM to flip the alto stem down. PolyWriter "sees" it a little differently, however.

When there are two ORDINARY NORMAL notes sharing a common stem, PolyWriter does not see two music events. Rather, it sees one music event which happens to be polyphonic. Since a single music event cannot be divided any smaller, you cannot ADD a SPLIT STEM at this point.

Instead, follow these steps:

- 1 -- The first thing you should do is PRINT the page you are working on (the reason for doing this will be obvious in a moment).
- 2 -- Next, use the CHANGE NOTES function to erase one of the notes in the Major Third.

- 3 -- Now that our Major Third has been reduced to a single note, you can use the ADD SPLIT STEM function to turn that ORDINARY NORMAL into a NORMAL CONTROLLING note.

Among other things, this activates the Controlled/Rest routine. Instead of having a single music event, PolyWriter assumes there will be two music events occurring at this point in time, and looks for a CONTROLLED note. When it doesn't find one, it inserts equivalent rests.

- 4 -- Use ADD ENTRY to restore the note you erased in Step #2, but ADD it as a controlled note. This is an important distinction; PolyWriter now sees the Major Third as two separate music events -- a NORMAL CONTROLLING and a CONTROLLED note -- and is now able to deal with them separately.
- 5 -- Now you may use CHANGE STEM to set the stems of soprano and alto notes as you please.

### Double-Stemming

Double-stemming the "G" is done in a similar manner. First you must use ADD SPLIT STEM to change the "G" to a NORMAL CONTROLLING note, and then use ADD ENTRY to insert another "G" of identical duration, but CONTROLLED, at the same point.

While it looks on screen as if you've just got one note there you actually have two; a CONTROLLING and a CONTROLLED "G", and you may set their stems as you please.

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