USER'S GUIDE

San Andreas Press

Acknowledgements

SCORE has been in development for more than twenty years, having its genesis in the Stanford Center for Computer Research in Music and Acoustics (CCRMA), and the Stanford Artificial Intelligence Laboratory. Very many people have contributed important ideas on the philosophy and implementation of SCORE. Editors and engravers from the major publishing houses (including C.F. Peters, G. Schirmer, Hal Leonard, and Schott) have given input regarding the optimum use and function of the program. The built-in music fonts were created by Leland Smith and Stefanie Feldman. Additional symbols were created by William Holab and Dennis Riley. The library of percussion symbols was created by Hsueh-Yung Shen; the lute symbols by Douglas A. Smith. Clement Smith created the module for dot-matrix printing. Proofreading and testing of these manuals was done by Robin Schiff, Allen Schultz, and Bruce J. Taub. Passport Designs, Inc., of Half Moon Bay, California was the first to make SCORE available to the public. San Andreas Press would like to thank all of these people (as well as those too numerous to mention) for their hard work and patience in making SCORE the best music typography program available and the first choice of music publishers and professionals the world over.

Colophon

This manual was typeset on an Hewlett Packard ES/12 (12 megahertz 80286) computer equipped with 3 megabytes of RAM using Ventura Publisher™ 2.0. The music examples were created in SCORE 3.0 and imported into Ventura™ as Encapsulated PostScript Files (.EPS). Screen dumps were created with Collage Plus. Camera-ready artwork was produced on a QMS-PS2200 laser printer at 300 dots per inch.

USING SCORE

A Step-by-step Guide to Learning the SCORE Program

Manual written and designed by William Holab

Version 3.0

The SCORE program was written by Leland Smith with additions by Perry Devine

Notices

Please return your warranty card to San Andreas Press immediately. Your name will be placed on our mailing list so that we can inform you of all program updates and related developments.

San Andreas Press reserves the right to make improvements or changes in the product described in this manual at any time and without notice. All specifications are subject to change without notice.

Published by:

San Andreas Press
3732 Laguna Avenue
Palo Alto, CA 94306
(415) 856-9394 (Voice and FAX)

SAN ANDREAS PRESS LICENSE AGREEMENT

This legal document is an Agreement between you, the end user, and San Andreas Press. BY OPENING THIS SEALED PACKAGE YOU ARE AGREEING TO BECOME BOUND BY THE TERMS OF THIS SOFTWARE LICENSING AGREEMENT. THIS AGREEMENT CONSTITUTES THE COMPLETE AGREEMENT BETWEEN YOU AND SAN ANDREAS PRESS. IF YOU DO NOT AGREE TO THE TERMS OF THIS AGREEMENT DO NOT OPEN THE DISK PACKAGE AND PROMPTLY RETURN THE UNOPENED PACKAGE INCLUDING ALL WRITTEN MATERIALS TO THE PLACE WHERE YOU OBTAINED THEM FOR A FULL REFUND.

SAN ANDREAS PRESS SOFTWARE LICENSE

1) Grant of license. In consideration of payment of the LICENSE fee, which is a part of the price you paid for this product, SAN ANDREAS PRESS, as Licensor, grants to you, the LICENSEE, a non-exclusive right to use and display these copies of the SCORE software program group (hereinafter the "SOFTWARE") on a single COMPUTER (i.e., with a single CPU) at a single location. SAN ANDREAS PRESS reserves all rights not expressly granted to LICENSEE.

2) Ownership of Software. As the LICENSEE, you own the magnetic or other physical media on which the SOFTWARE is originally or subsequently recorded or fixed, but SAN ANDREAS PRESS retains title and ownership of the SOFTWARE recorded on the original disk and all subsequent copies of the SOFTWARE, regardless of the form or media in or on which the original and other copies may exist. This License is not a sale of the original SOFTWARE or any copy.

3) Copy Restrictions. This SOFTWARE and the accompanying written materials are copyrighted. Unauthorized copying of the SOFTWARE, including SOFTWARE that has been modified, merged, or included with other software, or of any written materials is expressly forbidden. You may be held legally responsible for any copyright infringement that is caused or encouraged by your failure to abide by the terms of this License.

4) Use Restrictions. As the LICENSEE, you may physically transfer the SOFTWARE from one computer to another, provided that the SOFTWARE is used on only one computer at a time. You may not electronically transfer the SOFTWARE from one computer to another over a network. You may not distribute copies of the SOFTWARE, or accompanying materials, to others. You may not modify, adapt, translate, reverse engineer, decompile, disassemble, or create derivative works based on the SOFTWARE. You may not modify, adapt, translate, or create derivative works based on the written materials without the prior written consent of SAN ANDREAS PRESS.

5) Transfer Restrictions. This SOFTWARE is licensed only to you, the LICENSEE, and may not be transferred to anyone without the prior written consent of SAN ANDREAS PRESS. Any authorized transferee of the SOFTWARE shall be bound by the terms and conditions of this Agreement. In no event may you transfer, assign, rent, lease, sell, or otherwise dispose of the SOFTWARE on a temporary or permanent basis except as expressly provided herein.

6) Termination. This License is effective until terminated. This License will terminate automatically without notice from SAN ANDREAS PRESS if you fail to comply with any provision of this License. Upon termination you shall destroy the written materials and all copies of the SOFTWARE, including modified copies, if any.

7) Update policy. SAN ANDREAS PRESS may create, from time to time, updated versions of the SOFTWARE. At its option, SAN ANDREAS PRESS will make such updates available to the LICENSEE who has paid the update fee and returned the Registration/Warranty Card to SAN ANDREAS PRESS. Registered owners of SCORE entitled to purchase an updated version of SCORE must send current program disk(s) along with the update fee directly to SAN ANDREAS PRESS.

8) Miscellaneous. This Agreement is governed by the laws of the State of California.

DISCLAIMER OF WARRANTY AND LIMITED WARRANTY

THE SOFTWARE AND ACCOMPANYING WRITTEN MATERIALS (INCLUDING INSTRUCTIONS FOR USE) ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND. FURTHER, SAN ANDREAS PRESS DOES NOT WARRANT, GUARANTEE OR MAKE ANY REPRESENTATIONS REGARDING THE USE OR THE RESULTS OF THE USE, OF THE SOFTWARE OR WRITTEN MATERIALS IN TERMS OF CORRECTNESS, ACCURACY, RELIABILITY, CURRENTNESS OR OTHERWISE. THE ENTIRE RISK AS TO THE RESULTS AND PERFORMANCE OF THE SOFTWARE IS ASSUMED BY YOU. IF THE SOFTWARE OR WRITTEN MATERIALS ARE DEFECTIVE, YOU, AND NOT SAN ANDREAS PRESS OR ITS DEALERS, DISTRIBUTORS, OR AGENTS, ASSUME THE ENTIRE COST OF ALL NECESSARY SERVICING, REPAIR, OR CORRECTION.

SAN ANDREAS PRESS warrants to the original LICENSEE that the disk(s) on which the SOFTWARE is recorded is free from defects in materials and workmanship under normal use and service for a period of ninety (90) days from the date of delivery as evidenced by a copy of the receipt. Further, SAN ANDREAS PRESS hereby limits the duration of any implied warranty on the disk to the period stated above. Some states do not allow limitations on duration of an implied warranty, so the above limitation may not apply to you.

SAN ANDREAS PRESS's entire liability and your exclusive remedy as to the disk(s) shall be replacement of the disk that does not meet SAN ANDREAS PRESS's limited warranty and which is returned to SAN ANDREAS PRESS with a copy of the receipt or warranty. If a failure of the disk has resulted from accident, abuse or misapplication, SAN ANDREAS PRESS shall have no responsibility to replace the disk(s) or refund the purchase price. Any replacement disk(s) will be warranted for the remainder of the original warranty period or thirty (30) days, whichever is longer.

Defective media returned by the LICENSEE during the warranty period will be replaced without charge, provided the LICENSEE has signed and returned the Registration/Warranty Card enclosed with the product, and provided that the returned product has not been subjected to misuse, damage, or excessive wear. Following the initial ninety-day warranty period, defective media may be replaced for a replacement fee - contact SAN ANDREAS PRESS for details.

All product returns must be accompanied by a Return Materials Authorization number issued by SAN ANDREAS PRESS. Please call SAN ANDREAS PRESS and request an RMA number before returning any product to SAN ANDREAS PRESS. Returned media should be shipped in a protective package (with RMA number on the outside), postage or shipping costs prepaid, to SAN ANDREAS PRESS, accompanied by a brief description of the problem. SAN ANDREAS PRESS will not accept returns of any kind without a proper Return Materials Authorization number.

THE ABOVE ARE THE ONLY WARRANTIES OF ANY KIND, WHETHER EXPRESSED OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, THAT ARE MADE BY SAN ANDREAS PRESS ON THIS PRODUCT. NO ORAL OR WRITTEN INFORMATION OR ADVICE GIVEN BY SAN ANDREAS PRESS, ITS DEALERS, DISTRIBUTORS, OR AGENTS SHALL CREATE A WARRANTY OR IN ANY WAY INCREASE THE SCOPE OF THIS WARRANTY AND YOU MAY NOT RELY ON ANY SUCH INFORMATION OR ADVICE. THIS WARRANTY GIVES YOU SPECIFIC LEGAL RIGHTS. YOU MAY HAVE OTHER RIGHTS, WHICH VARY FROM STATE TO STATE.

NEITHER SAN ANDREAS PRESS NOR ANYONE ELSE WHO HAS BEEN INVOLVED IN THE CREATION, PRODUCTION OR DELIVERY OF THE PRODUCT SHALL BE LIABLE FOR ANY DIRECT, INDIRECT, CONSEQUENTIAL OR INCIDENTAL DAMAGES (INCLUDING DAMAGES FOR LOSS OF BUSINESS PROFITS, BUSINESS INTERRUPTION, LOSS OF BUSINESS INFORMATION AND THE LIKE) ARISING OUT OF THE USE OF OR INABILITY TO USE SUCH PRODUCT EVEN IF SAN ANDREAS PRESS HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. BECAUSE SOME STATES DO NOT ALLOW EXCLUSION OR LIMITATION OF LIABILITY FOR CONSEQUENTIAL OR INCIDENTAL DAMAGES, THE ABOVE LIMITATION MAY NOT APPLY TO YOU.

You MUST complete and return the enclosed Warranty card to register as the owner of the SOFTWARE with SAN ANDREAS PRESS. This will entitle you to full warranty protection, customer service and notice of any product updates. If you need to write or call us regarding customer service you must state the serial number of your SOFTWARE and your full name as it appears on the warranty card.

Should you have any questions concerning this Agreement, or if you desire to contact SAN ANDREAS PRESS for any reason, please contact in writing: SAN ANDREAS PRESS, Customer Service, 3732 Laguna Avenue, Palo Alto, CA 94306, or call your local Customer Service Representative, or call us at (415) 856-9394 (Voice or FAX).

Table of Contents

Introduction

Congratulations on your purchase of SCORE. You now own the most complete and powerful computerized music notation program available. SCORE allows you to create *any* type of printed music with your computer: lead sheets, piano-vocal scores, chamber works, operas, orchestral scores (of any size and number of staves) and print it out on a variety of printers, from a simple dot-matrix type to a sophisticated phototypesetter. Since SCORE employs the PostScript page description language, you have instant compatibility with hundreds of printers and computers. SCORE can also output files that may be used with most popular word processing and desktop publishing programs—even those that run on other computer systems like the Apple Macintosh.

SCORE is quickly becoming the standard for music publishers throughout the world. Very many professional engravers and autographers have converted their operations to SCORE, and it is also being used in many MIDI studios.

With the inclusion of ESCORT* and SCOREINPUT, SCORE becomes a sophisticated MIDI transcription program. Create a standard MIDI file in your favorite sequencer (even on a different computer system like the Macintosh) and "read" it into SCORE through ESCORT. ESCORT transcribes your MIDI file, quantizes it (at your preference), and even adds many custom features along the way (lyrics, measure numbers, etc.) Or use SCOREINPUT to play in your composi-

* ESCORT and SCOREINPUT are sold by Passport Designs, Inc. Half Moon Bay, CA 94019. Phone (415) 726-0280.

tion in real time. With these add-on programs, SCORE becomes a powerful music transcription program, and the most sophisticated music notation program available.

What You Need to Know Before Using SCORE

Since many people who purchase SCORE have never used a computer before, we suggest you take some time to get acquainted with the computer first. It is a good idea to spend some time learning DOS (the "**D**isk **O**perating **S**ystem" that allows you to interact with the computer) and to learn a simple word processing program, too. It's not essential, but the skills you will learn will be very beneficial when it comes time to learning SCORE. **These manuals assume you understand basic DOS commands and concepts.**

DOS

To use SCORE, you must understand the following DOS commands and how to use them:

COPY (or XCOPY)
DIR
CD (or CHDIR)
CHKDSK
DEL (or ERASE)
FORMAT
TYPE

In addition, you should understand what the following are (and how to create them):

AUTOEXEC.BAT file
CONFIG.SYS file
a DOS text file (also called an ASCII file)
the PATH statement
Directories
Subdirectories

If you are unfamiliar with any of the above, we strongly suggest you read your DOS manuals (supplied with your computer) or any of the third-party books currently available. One excellent book we recommend is Van Wolverton's *Running MS-DOS* (Microsoft Press), Many of the problems people encounter when using SCORE have nothing to do with the program and everything to do with DOS and their system configuration.

Music Engraving

When you create a piece in SCORE, the program emulates traditional plate engraving standards and practices. It has many automatic procedures to take out the "guess work" for the less experienced user, yet allows the freedom to position any symbol anywhere. The program usually makes the best choice when it comes to its automatic settings, but there are many exceptions to the rules which must be accounted for. Throughout *Using SCORE* we will show you how to correctly deal with some of these exceptions. But our purpose here is not to teach good notational practice. Neither this manual nor the SCORE program will teach you the fine points of music engraving. If you are interested in learning more about this, we suggest you consult *The Art of Music Engraving and Processing* by Ted Ross (Hansen Books).

What is SCORE?

SCORE is actually five separate modules:

1) **SCORE** (for inputting and editing music)

2) **PAGE** (for doing page layout and parts extraction from a score)

3) **SPRINT** (for batch printing of music to various printers)

4) **JUST** (for justifying large orchestral scores)

5) **DRAW** (for editing and creating your own symbols)

Using These Manuals

Using SCORE is a careful walk through SCORE in great detail, and introduces PAGE, JUST, and SPRINT. DRAW has its own separate manual found at the end of this binding. There is also the separate SCORE *Reference Manual* which explains every SCORE command and concept in great detail. If you have a question about a specific topic (for example, ties), look it up in the alphabetical index in the *Reference Manual* to find the appropriate section. In addition, there is a *Quick Reference Chart* which contains information that you will find helpful as you use SCORE.

Definition of Terms

We use the following conventions in these manuals:

- A word in small caps indicates a key to be pressed. For example: ENTER means press the Enter key, not type the word "enter."

- Any text to be typed is preceded by "Type" and is set in a monospaced font.
  For example: Type `SA SAMPLE.MUS`

(We use the convention of indicating text to be typed in all uppercase letters, but it doesn't make any difference whether you use upper or lowercase.)

- Sometimes we will ask you to hold down a key and press a different key at the same time. We will indicate this with a plus (+) (eg. CTRL+F5)

- We assume that the user's hard disk (which contains the program and its associated files) is disk C. If you have installed the program on a different disk drive, substitute the appropriate drive letter when we refer to drive C.

- We use the word staff to describe a single line of music. "Staves" refers to more than one staff. A system is a group of staves.

Using a Mouse

Many of the procedures in this manual are explained in terms of using a mouse. The best mouse to use for SCORE is one with three buttons (and must be Microsoft compatible). It is possible to use SCORE without a mouse, but some operations are easier if you have one.

- Mouse terminology:

  Click means to move the mouse pointer to the appropriate place and quickly press one of its buttons (usually specified in the manual).

  Drag means to click with the mouse and *hold down* the button. Without releasing the button, move the mouse to "drag."

> If you already own SCORE version 1.X or 2.X, we suggest you skip to the Installation Chapter for instructions on how to proceed. After that, make sure to read the appendix which summarizes the new features in version 3.0.

Before You Begin

Because SCORE is so powerful, it is also somewhat complex. We urge you to be patient when learning SCORE; you didn't learn to read and write music in a few days, so don't expect to learn how to notate it with a computer in a few days. You may not need to learn every SCORE feature at first. We suggest you take the following steps to learn the program:

1) Install the program following the directions in the Installation section.

2) Carefully read the section "What you need to know before using SCORE."

3) Begin by reading *Using SCORE* (at the computer) and create its examples. If you don't understand something, try to repeat the examples in the chapter.

If you are new to computers, it may take a while to get accustomed to some of the abstract concepts associated with them. Don't worry. This is perfectly normal, and with time, they will become second nature.

What To Do If You're Stuck

If you are having trouble installing the program, turn to the back of the installation chapter for advice on what to do. If, after correctly installing the program, you cannot get something to work correctly, please check the following:

- Is there a discrepancy between the manual and the prompt or display on the screen? It is always possible that there may have been some recent updates to the program which might cause a discrepancy. Check the disks for a file labelled READ.ME for last minute program information.

- Try to repeat the action(s) you performed and see if the problem occurs again. If so, make a note of the steps you took before the problem occurred.

- If an error message appears, write it down *exactly* as it appears on the screen.

- Read the Troubleshooting chapter in the *Reference Manual,* and see if the problem is described there.

- Check the online help system for details regarding the action you are having problems with. (Help may be accessed by pressing F1.)

- If the problem is not described in the *Reference Manual,* and persists, then call technical support at (415) 856-9394. It is best if you call from a phone that is near to your computer, as the technical support staff may offer suggestions for you to try while you are on the phone. The best hours for calls are 9 A.M. to noon, Pacific Time, on Mondays through Fridays.

INSTALLATION

The first step towards using any computer program is installing it on your computer's hard disk. To simplify the procedure, we have created an automatic installation program. But before you install SCORE, please check the following list to insure your computer is correctly configured. (If you don't understand some of the terms listed below, please read your computer's manuals for explanation.)

Hardware Requirements

Your computer must meet the following minimum standards to run SCORE.

- It must be an IBM or IBM-compatible computer (PC, XT, AT, 386, or 486).
- It must have a minimum of 640K RAM. (If you are unsure, use the DOS CHKDSK command to verify this.)
- It must have some type of graphic display monitor (CGA, EGA, VGA, Hercules, etc.).
- It must have a hard disk drive and at least one floppy disk drive. **Note: you must have at least 1.6 megabytes of available disk space on your hard drive to install SCORE.**

DOS Versions

To operate SCORE your computer must have either MS-DOS or PC-DOS, version 3.0 or later. SCORE will operate with some earlier versions of DOS, but you may experience some problems.

Using DOS 4.0

Unfortunately, DOS 4.0 (and 4.01) occupies a large amount of conventional memory (making it less than ideal for SCORE). If you are currently using either of these versions of DOS, make sure you read the section "Adjusting Available Memory" below.

Optional Hardware

The following are not required, but highly recommended.

- **A math co-processor.**
  This is a chip which is installed on the motherboard of your computer and which takes over math calculations (also called floating point calculations). *We urge all users of SCORE to purchase this option as it can speed up operation of the program considerably, especially if you are using an older computer with an 8088 or 80286 processor.* If you have an 80386 computer, the co-processor will speed up operation, too. Users with 80486 computers do not need to purchase this option as it is built onto the motherboard.

- **A mouse with a microsoft-compatible driver.**
  Although SCORE may be run without it, a mouse makes many aspects of the program (such as editing) easier to accomplish. As the price of mice has dropped tremendously, we urge the user to purchase this option. Although you may use either a two-button or three-button mouse, SCORE makes full use of all three buttons and we

recommend purchasing the latter. In addition, make sure the mouse has a microsoft-compatible driver (two good examples are the Genius™ and Logitech™ mice). Ironically, the Microsoft mouse is not a good choice as it only has two buttons.

- **Additional RAM memory (beyond 640K).**
  Although SCORE does not directly access this memory, there are ways to speed up the operation of the program (by using a RAM disk and/or a disk cache). See the Reference Manual chapter on Using Extended/Expanded Memory for a full description of the ways you may use this memory to speed up operation of the program.

- **A printer.**
  SCORE directly supports dot matrix and PostScript laser printers. Either 9-pin or 24-pin dot matrix printers may be used, but the 24-pin type will yield better results. Any type of PostScript laser printer may be used (such as the Apple Laserwriters™ or the QMS 810, 410, etc.). SCORE does not directly support non-postscript laser and inkjet printers such as the HP laserjet, deskjet, Canon Bubblejet, etc. If you own any of these printers, you must either upgrade them to PostScript compatibility (by purchasing additional memory and add-on PostScript emulation cartridges) or use a third-party *software* emulation such as GoScript™, UltraScript™, or Freedom of the Press™. For further information, we recommend you contact your dealer.

- **MIDI equipment.**
  SCORE directly supports MIDI input of pitches via any standard MIDI interface (such as the Roland MPU-401 MIDI interface, or a compatible model). If you have

purchased ESCORT, you have the capability to transcribe MIDI files created in a separate sequencer program (such as Master Tracks Pro). If you purchased SCOREINPUT, you may use a MIDI interface and keyboard to transcribe live performance (in real time) with SCORE. The MIDI interface and keyboard are not required for using SCOREINPUT—you may also "play" your music on the computer's keyboard. See the separate manuals that come with these products for further information.

> Note: SCORE has been very carefully designed so that you may gradually upgrade your hardware as you learn to use the program. If you do not want to purchase a math co-processor or additional expanded/extended memory right away, SCORE will still function correctly. In fact, you will not necessarily notice the advantages of these options while you are learning the program. Once you have some experience using SCORE, the advantages of these various options will become more apparent.

Before you install SCORE, make sure you know the following information:

- What type of graphic display you are using (EGA, VGA, etc.)
- What type of printer you are using (PostScript laser, Dot Matrix, etc.) and what port it is assigned to (LPT1, COM1, etc.).
- What type of MIDI interface you have (if you are using one) and its interrupt (IRQ) level.

Installation

SCORE is available on either 5¼" (360k) or 3½" (720k) disks and the installation process is essentially the same for either format. To begin, place the disk labelled number one in your computer's floppy disk drive. Change to the floppy disk drive by typing `A:` ENTER. (If you are using the B drive, substitute B: instead.)

> Note: during the installation process SCORE will periodically ask you to insert a different disk. Make sure you have all of the installation disks handy before you begin.

Type `INSTALL` ENTER

After a few seconds, the following message will appear:

```
This program will install SCORE, Version 3.00 on
your computer system.
It will also allow you to choose your screen,
printer and MIDI interface.

You may press the [Esc] key at any time to abort
the installation.
```

For Those Who Are Updating From an Earlier Version.

```
If you are updating from an earlier version of
SCORE you may want to install this version on
different drives and/or in different direc-
tories. In this way you may continue to use the
older version while you make the transition to
SCORE 3. Since the library files must reside in
the \LIB directory, we suggest that you use a
lower hard disk volume letter for the new
libraries. If you only have one hard disk volume
available you may install the new libraries on
```

```
top of the old ones, but you should make sure
that you have backed up any of your own custom
libraries, because they may be overwritten.


Press [Esc] to quit, any other key to continue
...
```

The first paragraph simply explains that you are installing SCORE version 3.0 and will be allowed to select the type of screen display, printer, and MIDI interface if you are using one.

The second paragraph contains information for users who are upgrading from a previous version of SCORE. If you are upgrading (rather than installing for the first time) see the section "Installing SCORE over an existing version" below. If you are installing SCORE for the first time, disregard the following section and skip to the heading, Beginning Installation, below.

Installing SCORE over an existing version

If you are updating SCORE from an earlier version, you will probably want to keep both versions of the program on your computer for a while. One way to do this is to keep each version in a separate directory (perhaps calling the old directory \SCORE2 for version 2.x). Alternatively, you may wish to keep all of the program files in the \SCORE directory, but rename the old files. Using the DOS REN command, you could rename the old version of SCORE from SCORE.EXE to SCORE2.EXE. Then you would type `SCORE2` to start version 2. Do not rename SCORE 3—it must be named SCORE.EXE to function. **If you do not make either of these alterations, this installation program will overwrite all of your existing program files.**

In addition, SCORE's libraries have many new symbols. You may wish to keep your old libraries (in case you have created custom symbols of your own). SCORE requires the libraries to reside in a directory named \LIB. One easy way to keep both sets of libraries on your hard disk is to create two directories both named \LIB, but on different disk volumes. When SCORE starts, it searches for a directory named \LIB starting with the highest disk volume first. Once inside SCORE, you may alter this setting with the DR command. [After starting SCORE, type DR ENTER. SCORE will display the current drive being used for the libraries. Type a different drive letter to alter the setting, or press ENTER to leave it as is.]

Similarly, the help files must reside in a directory named \HLP. This installation will overwrite the current help files, so you should use a similar procedure to preserve your old help files. Once inside SCORE, you may use the DRH command (in the same manner as the DR command) to specify which drive contains the help files. Only users of version 2.x will have the help files in a separate directory; version 1.x keeps these files in the \LIB directory.

After making these changes/modifications, you may proceed with installation according to the following instructions. After you have finished, we suggest you turn to the appendix which details the new features in version 3.0.

Beginning Installation

Press any key to continue with the installation process. The following message appears:

```
After completing the install process, reboot
your system so that any environment variables
and paths that may have been set will take ef-
fect.
```

```
If you get an "out of environment space" message
after rebooting, add the following line to your
config.sys file:

shell=command.com /p /e:512

This should provide ample DOS environment
space.
```

This message is simply warning you that you should reboot your computer *after* you have completed installation. The easiest way to do this is to hold down the CTRL and ALT keys and press the DELETE key. This is called a soft reboot. Don't type this key combination until you have completed installation.

The message below informs you of a possible error that may occur in your system. If, after installing SCORE, you get the message `OUT OF ENVIRONMENT SPACE` add the line indicated to your CONFIG.SYS file in the root directory of your computer. Otherwise, ignore this information for now.

Press any key to continue.

```
Select Installation Option:

Install the entire SCORE system
Re-install display, printer or MIDI
```

Notice that the first option is flashing and highlighted. Press ENTER to accept this option and install the entire program. Later, if you change monitor type, printer, or MIDI interface, you may run the second option to only alter that information. You can use the cursor keys to move up or down in this menu.

```
Please specify the destination drive for
SCORE's program files:
```

```
Drive A:
Drive B:
Drive C:
Drive D:
Drive E:
```

(This list of drives will vary depending on your system's configuration.)

The installation program allows you to select which drive to install SCORE on. Most users should select drive C. If you have a different configuration, or want to place the program files on a different drive, select that drive here by using the up or down cursor keys. Remember that the drive you install SCORE on must have at least 1.6 megabytes of available disk space for the program and its files. The SCORE directory will require about 925K of disk space. Press ENTER to continue.

```
The SCORE Executive requires that you use the
default directory name, \SCORE but you may use a
different name if you do not want to use the Ex-
ecutive.
```

```
Enter the directory for SCORE's program
files:
\SCORE
```

SCORE has a separate, RAM-resident menuing program called the SCORE Executive. If you intend to use this program, the program files must be in a directory labelled \SCORE. We suggest you use this name for now. Press ENTER to continue.

```
Please specify the destination drive for the
library files:
```

```
Drive A:
Drive B:
Drive C:
Drive D:
Drive E:
```

Once again, you may select a drive for SCORE's library files (which contain the many symbols used to create the music). The libraries occupy about 360K of disk space. Most users should select drive C. You may use the up or down cursor keys to select a different drive. Press ENTER to continue.

```
Please specify the destination drive for the
help files:
```

```
Drive A:
Drive B:
Drive C:
Drive D:
Drive E:
```

```
Please specify the destination drive for the
sample music files:
```

```
Drive A:
Drive B:
Drive C:
Drive D:
Drive E:
```

SCORE includes some sample music files (that you will use when you go through *Using SCORE*). Select a drive to install these on. (Most users should select drive C.) The samples occupy about 116k of disk space.

```
Enter the directory for the sample music
files:
\MUSDAT
```

SCORE will automatically call the directory with the sample music files, \MUSDAT (for MUSic DATa). If you prefer to use a different name, use the backspace key to erase the line and type a new name.

```
Please select your display type:

  Tandy 2000 ——- 640 x 400
  Hercules ———- 720 x 348
  IBM CGA ——— 640 x 200
  IBM EGA ——— 640 x 350
  IBM EGA w/ monochrome monitor
  MCGA, PS/2 ——- 640 x 480
  VGA, PS/2 or PS/1: 640 x 480
  ATT 6300 or DSCGA: 640 x 400
  EGA PLUS ———- 640 x 480
  Yamaha C1 ——— 640 x 400
  C1 with external mono monitor
  GENOA EGA/VGA — 800 x 600
  GENOA EGA/VGA — 640 x 528
```

Use the up or down cursor keys to move to your selection and press ENTER. If you do not see a listing for your monitor type, try to select one that is closest to it. Make sure to read *Possible Problems section,* below.

```
Select the Port to be used for a Postscript
Printer. If you select None, you will be asked
for a port if you attempt to do Postscript print-
ing.
```

```
None
Serial COM1:
Parallel LPT1: or PRN:
Parallel LPT2:
```

If you are using a PostScript printer, select which port it is connected to. If you are unsure, you may select "none" and SCORE will prompt you for the port each time you print, or redo this part of the installation process later. Press ENTER to continue.

Select a Dot Matrix printer to be used with SPRINT. If you select None, you will be asked for printer type when you attempt to do dot matrix printing:

```
None
IBM Proprinter and EPSON RX/FX/LX/EX
Series.
NEC P5/P6/P7/P9 or EPSON LQ-1500
Tandy TRS CGP-220
EPSON LQ-800/850/1000/1050
IBM Proprinter X24/XL24
FUJITSU DPL24 Series.
EPSON EX or FX Wide Carriage.
```

SCORE asks you to select the type of dot matrix printer you are using. If you do not see your printer listed, consult your printer's documentation to determine if your printer emulates any of the printers listed here. SPRINT, by the way, is a separate printing program that is included with SCORE. If you do not specify a printer type here, SPRINT will ask you what type of printer you have whenever you try to print. If you are unsure of what type of printer to select, you might select "none" for now. Later, when you use SPRINT to print, experiment with different selections and see which works best with your printer. Once you have discovered

what type works well, make a note of it and re-run the installation program to make that choice permanent. Press ENTER to continue.

```
Please select the type of MIDI Interface that
you want to use with SCORE:
```

```
None
MPU-401 or compatible
Passport MIDI Transport
IBM Music Feature
Yamaha C1
```

If you are not using a MIDI interface, select "none" and press ENTER to continue. If you have a MIDI interface, select the appropriate type. SCORE will prompt you for the interrupt level:

```
Please select the Interrupt IRQ Level to be used
with a MPU-401 type MIDI interface:
```

```
IRQ 2 or 9 - Default
IRQ 3
IRQ 4
IRQ 5
IRQ 7
```

If you are unsure what interrupt level your interface uses, consult the documentation that came with it. If you are not installing a MIDI interface, this screen will not appear. Press ENTER to continue.

```
VERIFY
May I create/modify your AUTOEXEC.BAT file
if needed (Y/N)?
```

If you type "Y" here (for yes), SCORE will automatically create an AUTOEXEC.BAT file in your root directory if you

do not have one. Most users should select this option. If an AUTOEXEC.BAT file already exists, SCORE will modify it (by adding or modifying the PATH statement) so that SCORE may be started from any disk or directory on your computer. After completion, SCORE will display what changes it made, for example:

```
The node "C:\SCORE" has been added to the exist-
ing PATH command
```

```
PRESS ANY KEY
The AUTOEXEC.BAT file on drive C: has been
created/modified.
The original AUTOEXEC.BAT file has been
renamed to AUTOEXEC.BAK
If you have any problems with the new
AUTOEXEC.BAT file when
you reboot your computer, you should re-
store the original file.
```

SCORE makes a safety copy of your original AUTOEXEC.BAT file named AUTOEXEC.BAK in case any problems occur.

If you type "N" (for no) at the prompt, SCORE will not alter (or create) your AUTOEXEC.BAT file. SCORE will, however, display the information you should manually add to your AUTOEXEC.BAT file's PATH statement. Press ENTER to continue, and installation is complete. Remove the disk from the floppy disk drive and reboot the computer (Press CTRL + ALT + DELETE).

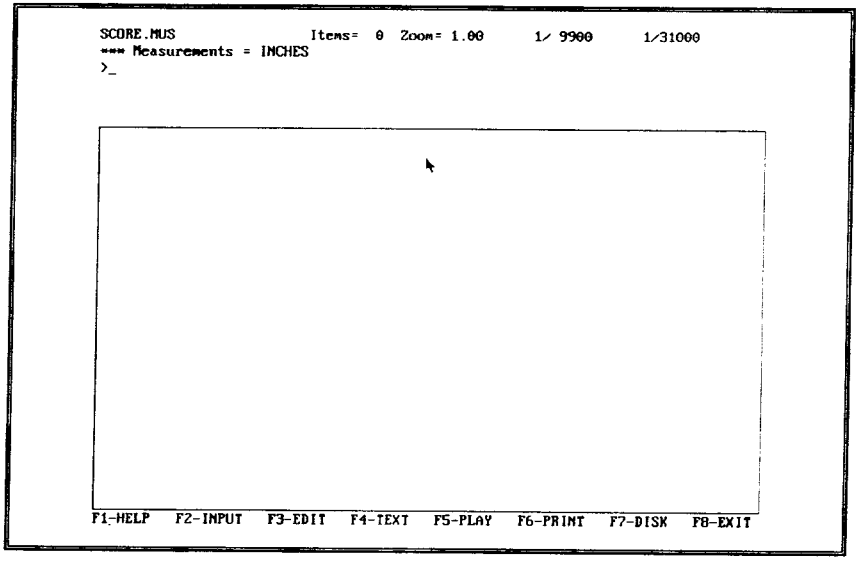
Mouse Installation

If you are using a mouse, you should install it according to the instructions in its manual. Most mice use a driver (MOUSE.COM or MOUSE.SYS) which is loaded when you

start your computer. Make sure that this driver is loaded correctly before using SCORE. This will require adding a statement to either your CONFIG.SYS or AUTOEXEC.BAT file.

Determining if SCORE is Installed Correctly

To test if SCORE will function correctly, type SCORE ENTER at the DOS prompt. A title page should appear (with the authors' names and version number of the program. After a few seconds, you should see a screen that looks like this:



(It may look slightly different depending on what type of graphic monitor you have; we used a VGA monitor to create this screen dump.) Notice the arrow in the middle of the screen. This is the mouse pointer, and will only appear if you own a mouse and it is installed correctly. If you have a mouse installed, and no arrow appears, check the documentation for your mouse to determine if it is installed correctly. If no screen appears, try pressing F8 to exit. If your computer locks (will not function) you will need to reboot to exit.

If you receive the message, `Program too big to fit in Memory`, then you do not have enough available RAM to run SCORE. Read the following section for a discussion of how to adjust available RAM.

Checking Available Memory

Before you use SCORE, you must make sure that you have enough available RAM memory. To check this, type `CHKDSK` ENTER. DOS will display the total disk space, the amount of space used (and how many files), the number of bad sectors (if any), the number of hidden files (such as DOS itself), and then two very important lines of text at the bottom. The first indicates how many bytes of total memory. This is how much RAM your system has, and is usually around 650000 bytes. (If it displays a figure such as 512000 bytes, you cannot run SCORE. See your computer dealer about upgrading your system to 640K of RAM.)

The next line indicates how many bytes are "free" and this figure is most crucial. SCORE needs about 570000 bytes free in order to operate properly. If you decide to use the SCORE Executive (a menuing program) you will need about 6 to 8K of additional RAM available. Although your system has about 650000 bytes (or 640K) of RAM, you do not actually have that much RAM at your disposal. There is a DOS "kernel" which is permanently loaded into memory when you start your computer and which can occupy 40 to 50K. In addition, many users have "device drivers" loaded when they start their computer. Your mouse driver (if you have a mouse) is one such device driver, and it can occupy 8 to 10K of RAM. If you use any terminate-and-stay-resident (TSR) programs, they also use this RAM memory. **If you do not have about 570000 bytes of available memory (after loading your device drivers, etc.) SCORE will not operate correctly.**

Adjusting Available Memory

If you need to adjust your system's available memory, we recommend examining your CONFIG.SYS file in the root directory of your computer. Make a safety copy of this file named CONFIG.OLD, then edit the contents of CONFIG.SYS. You will probably see two lines:

```
FILES = 20 (or some other number)
BUFFERS = 30
```

Each buffer setting consumes 528 bytes of memory. To operate SCORE, the BUFFERS setting probably needs to be set at 6 or 8. If you have DOS version 4.0 or 4.01, you may need to set this to 4. Try not to set it lower than that, as lower settings may cause problems with operating SCORE. DOS version 3.3 is better for SCORE users as its kernel is smaller and occupies less memory.

While you are looking at your CONFIG.SYS file, make sure that the ANSI.SYS driver is not loaded. If there is a line that reads: `DEVICE = ANSI.SYS`, SCORE will not function correctly. Delete this line from your CONFIG.SYS file.

> **Note To Windows™ Users**
> If you have installed Microsoft Windows™ on your computer, you will probably need to have a separate CONFIG.SYS file for SCORE. Windows™ users may have buffers set as high as 30, and that does not leave enough RAM for SCORE to operate. Accordingly, SCORE will not run from within any version of Windows™ at this time.

After altering the buffers setting in your CONFIG.SYS file, you will need to reboot the computer. Now run CHKDSK and see how much RAM is available. If it is close to 570000 bytes, try starting SCORE again as we described above. If

you still get the message `Program too big to fit in memory`, then we suggest trying a "plain vanilla" CONFIG.SYS file with only the following contents:

```
FILES = 10
BUFFERS = 7
```

You should also check your AUTOEXEC.BAT file and remove any TSRs from your system.

Creating Multiple System Configurations

If you discover that you need special settings in your CONFIG.SYS file to run SCORE, you may need to create a separate CONFIG.SYS (and possibly AUTOEXEC.BAT) file just to run SCORE. In this instance, we recommend creating a DOS Batch file to simplify reconfiguring your system. For example, if you have Windows™ on your system, you might have two CONFIG.SYS files—CONFIG.WIN and CONFIG.SCR—for each program. You could use a Batch file to rename one of the files to CONFIG.SYS, then reboot your computer so that you may use either of the programs. (See your DOS manual on how to create Batch files.)

Possible Installation Problems

SCORE starts, but the display looks funny, flashes constantly, or doesn't display at all.

You may have chosen a display type that will not work with your monitor/graphics card. There is an easy way to experiment with the display options. Change to your library directory (\LIB). There is a DOS Text file in this directory named PREF.SCR which contains your preferences for running SCORE. It also contains information regarding the type of display you selected as well as your printer port. Use the DOS rename command and change this file's name to PREF.OLD (type `REN PREF.SCR PREF.OLD` ENTER). Now start SCORE by typing `SCORE` ENTER. A title page ap-

pears for a few seconds, then you are presented with a list of monitor/graphic cards to choose from since SCORE cannot find the preference file. Pick one of the options, and press ENTER. SCORE should display a screen similar to the one printed above. If not, press F8 to exit SCORE, and then start the program again. This time, select a different option. If it does not function, press F8 to exit. Continue in this fashion until you have selected a display type that works well on your system. Make a note of which number you selected, then exit SCORE. Rename the file PREF.OLD back to PREF.SCR. Re-run the installation program, and select the option to Re-install display, printer or MIDI. Select your new display choice and exit. SCORE should now operate correctly.

ANSI.SYS

If the display does not function, or has some problems, it may be due to the ANSI.SYS driver. You must make sure that your CONFIG.SYS file *does not* include a line `DEVICE = ANSI.SYS`. SCORE will not function correctly if you are using the ANSI.SYS driver.

Selecting Screen Colors

SCORE allows you to alter the color of the foreground, background, and text of your display. Once you determine which color combination works best for your system, you may add this information to the preference file (PREF.SCR) in your \LIB directory so that it will automatically be set when you start the program.

Start SCORE by typing `SCORE` ENTER.

Type `COL` ENTER. SCORE prompts you for three numbers representing foreground, background, and text. The following chart indicates these color options:

0 = black	8 = gray
1 = blue	9 = light blue
2 = green	10 = light green
3 = cyan	11 = light cyan
4 = red	12 = light red
5 = magenta	13 = light magenta
6 = brown	14 = yellow
7 = white	15 = bright white

Type three numbers, and press ENTER to see the change. If the entire screen goes blank, do not be concerned. You may have selected a color combination that has no contrast and will not display. Press F8 to exit SCORE, and then repeat the entire process with a different color selection.

> Note: the COL command may not function on some systems (Hercules has no support for color, some monochrome drivers will not access these colors) and some systems may not support all 15 colors. And, in fact, the colors may differ on some systems, too.

If you have a monochrome monitor, you may be able to set it to color (using a software utility that is supplied from the manufacturer) to access these "colors." Many VGA cards, for example, come with a utility called VGA.EXE which allows a monochrome monitor to emulate a color monitor and display colors in various shades of gray. See your system documentation for more information.

If you determine you prefer a specific color setting and wish to make it the default for your system, you need to alter the preference file. Change to the \LIB directory and edit the file PREF.SCR (you may use a text editor, like

EDLIN, or a word processor). Insert a line with the text `color X Y Z` where X Y Z represent the numbers of the colors you want to be your preference. Save the file under the same name and exit. Remember to save the file as a DOS Text File (sometimes called Text Only format) if you are using a word processor. Start SCORE by typing `SCORE` ENTER and your color settings should automatically take effect.

Chapter 1
Getting Familiar With SCORE

In this chapter you will learn how to create a staff of music using the *Input Window* and how to do some basic editing. You'll also learn how to use the help screens, to save a file, and quit the program.

This chapter describes:

- Starting SCORE
- The Main Window
- The Input Window
- Creating a Staff of Music
- Asking For Help
- Saving Your File
- Inserting Text
- Editing
- Fixing a Mistake
- Quitting SCORE

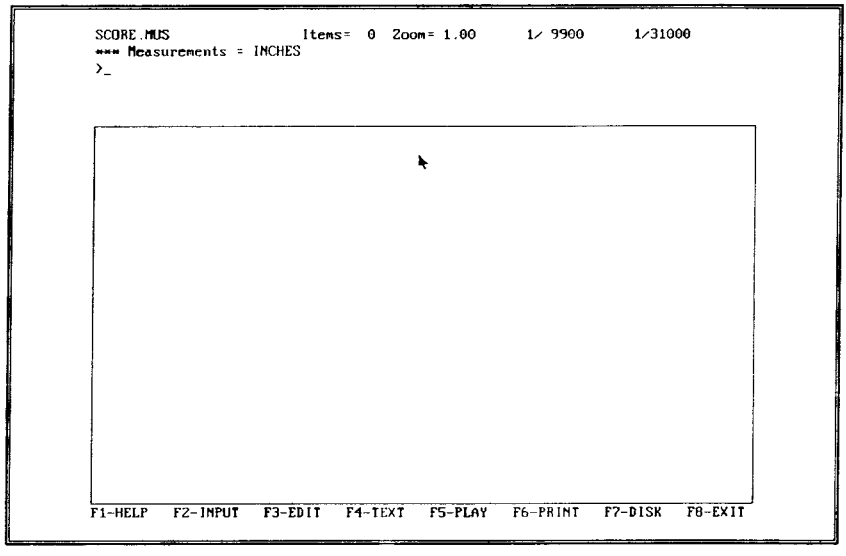
Note: the music examples in this manual are original creations of the author. To assist you, the finished examples for each chapter are included with the program and may be found in the directory, MUSDAT, which was created during installation.

Starting SCORE

Type: SCORE ENTER

The "title screen" appears, displaying the author's names, version number of the program, etc. Press any key to continue.

You will now see the *Main SCORE Window.*



You will notice the screen is divided into three areas. They are:

Status Line and Command Prompt

The *Status Line* is the top line of text on your screen. It displays the following information (going from left to right):

`File Name` - this is the name of your file. When SCORE first starts, it opens a file called "SCORE.MUS" which is displayed here until you give it a name of your own. (How to name and save a file will be discussed later.)

`Items =` - this indicator displays how many items are in your file. SCORE defaults to "Items = 0" because this is a new file and has nothing in it yet. (A further explanation of items will be discussed later.)

`Zoom` - this is the current magnification you are viewing your file at. SCORE defaults to "Zoom = 1" which is full size (you can think of 1 as 100%—the actual size your page will print at). Later, we will explain how you can change views and use this feature.

`1/9900, 1/31000` - these indicators display available working memory, any may vary depending on your system configuration. For now, you may ignore them.

`Measurement* = INCHES` SCORE gives you a choice of working in either inches or centimeters. The default is inches.

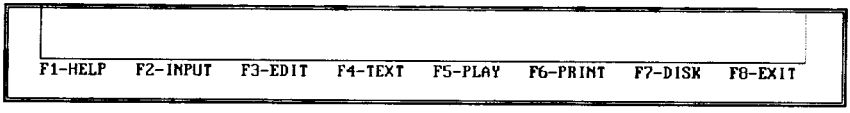
`>_` - This is SCORE's command prompt. It functions like DOS's ">" prompt, and is used to type text and commands into SCORE.

> Using the keyboard, try typing a short sentence (do not press ENTER when you are done). If you make a mistake, use the left and right cursor keys to go back through the line to make a correction. The BACKSPACE key will delete any character to the left of the cursor, the DELETE key (usually located above the cursor key pad) will delete any character directly over the cursor.
>
> Now try to insert a word in the middle of your sentence. If you just try to type, SCORE automatically replaces the existing text of your sentence. Instead, use the cursor key to position the cursor where you want to insert the text, then press the INSERT key (usually located above the DELETE key). The cursor changes to a shaded box, and any characters you type will now be inserted in the line. Try experimenting with typing and correcting text on this line.

(If you accidentally hit ENTER, you may get an error message as the program tries to interpret what you've typed. Pressing the ESCAPE key will usually return you to the prompt.) When you are done, and want to continue, type: RS ENTER. This will restart the program and clear the screen.

Window Area

This is the area inside the large box in the center of the screen. It is where your music will be displayed during input and editing.



Function Key Menu

The line of text across the bottom of the screen contains a menu indicating the function key commands. Pressing any function key on your keyboard (on an AT, they are at the top of your keyboard; an XT often has them on the left side) executes the command indicated in this menu.

Creating a Staff of Music

To create a staff of music, you need to be in the *Input Mode*.

Press: F2

The screen changes to the *Input Window*. It is divided into three areas as before.

- *The Staff Setup Menu*- the top two lines of text on the screen. Below the Staff Setup menu is an instruction:

  `Alter Parameters, Get Staff Setups, Press SPACE to Continue or Press ESC to Exit.`

- *The Window Area* - the area inside the large box, as before.

- *The Function Key Menu* - the line of text on the bottom of the screen. Once again it lists what commands can be executed by pressing a function key. Notice that the keys now have different functions than in the Main Window. Throughout SCORE, these keys have a chameleon-like quality and change according to what part of the program you are in.
  Press: F1

  (Pressing F1 selects a "preset" staff setup that SCORE provides for you, in this case a single staff with a treble clef. Later, we'll explain how you can create your own Staff Setups.) Press the space bar to continue. A new instruction appears at the top of the screen:

  ```
  Enter barlines, clefs, key signatures, time
  signatures, pitches and rests.

  Type notes, etc. >_
  ```

  (When you pressed the space bar, some text scrolled by at the top of the screen. This is normal.)

The Five Stage Input

SCORE's input section is divided into five stages:

1) Pitches

2) Rhythm

3) Marks

4) Beams

5) Slurs

To input music, you use a simple letter code. There are five ways you can create this code:

1) Typing letter commands from the keyboard

2) Using the mouse

3) Using a MIDI keyboard

4) Creating an Input File with SCOREINPUT (real-time input)

5) Importing Sequencer files through ESCORT

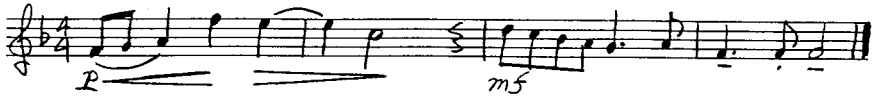
For now we will explain method one (typing) as it is the most precise and comprehensive. If you want to use either the mouse or MIDI keyboard, their input methods are discussed at the end of the chapter. **We suggest that all users learn method one, even if they ultimately choose another method for their daily work.**

The Pitch Stage

The Pitch Stage is for entering:

- Pitches
- Rests
- Clefs (and clef changes)
- Time Signatures (and time changes)
- Barlines.

Let's begin by entering this example:



First we need a key signature.

Type `K1F` [1F means one flat, for F major. Similarly, D major would be K2S, E-flat major would be K3F, etc.]

Follow it with a "/". (Each item in an input line is separated by the "/" character. Make sure you do not confuse it with the backslash "\", which DOS uses to indicate directories.)

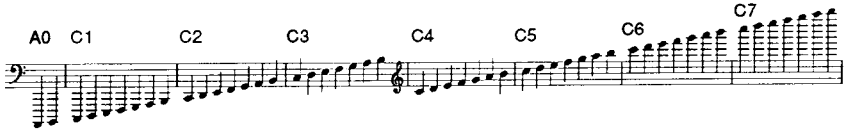
> A note to European users of SCORE.
> The slash key is sometimes quite awkward to type on European keyboards. As an alternative, SCORE allows you to type a comma (,) in its place. The examples in this manual only display the slash, but you may use either one. American users may use the comma also, if they desire.

The next item is the time signature.

Type `4 4` [note that you must put a space between the two numbers when inputting a time signature.]

Now we are ready to input the pitches.

To input pitch, SCORE uses the actual letter to represent the pitch, followed by a number indicating the octave it is in. Here is a chart of the octaves on the piano keyboard, and their correct numbers for input purposes.



Notice that an octave begins with "C", and ends with "B". For our example, you would type:

```
K1F/4 4/F4/G/A/F5/E/
```

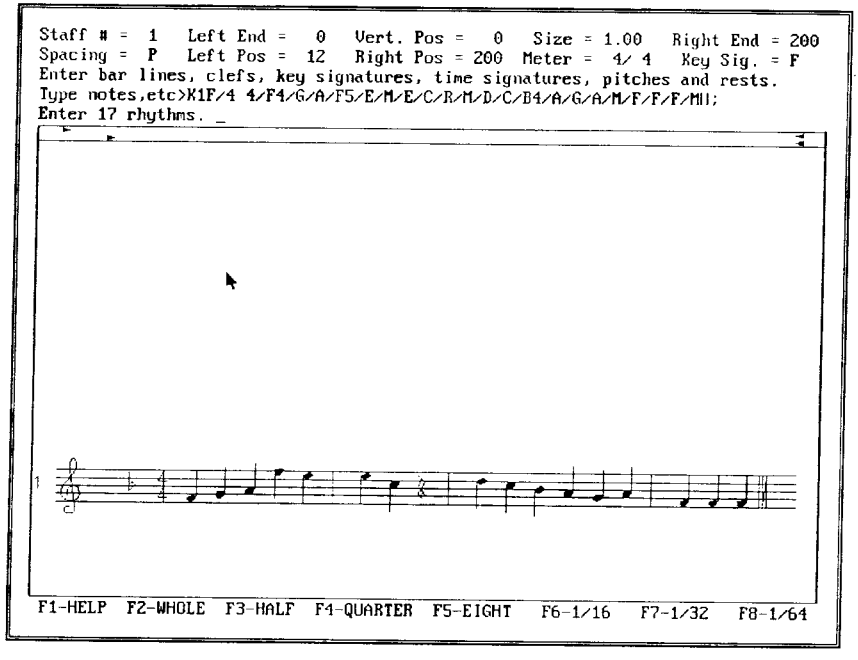
We did not type a "4" after the G or A since they are in the same octave as the first note. You only need to specify the octave if it is different from when you last indicated it. Now we need to enter a barline.

Type `M` for **M**easure, Then continue with the pitch input.

There is a quarter rest at the end of the next measure. Type R for **R**est. When you assign it a rhythm, the program creates the exact type of rest required. When finished your text line should look like this:

```
K1F/4 4/F4/G/A/F5/E/M/E/C/R/M/D/C/B4/A/G/
A/M/F/F/F/MH;
```

To create a heavy barline to end a piece, you type MH (**M**easure **H**eavy). At the end the line, type a semicolon (instead of a "/"), then press ENTER. The screen will display the input.



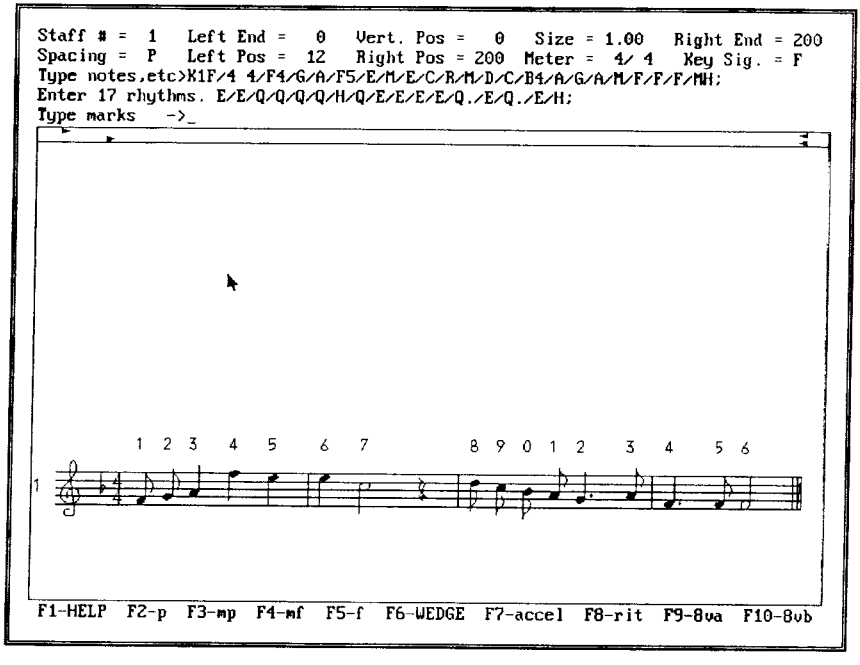
The Rhythm Stage

The program now asks you to Enter 17 rhythms. SCORE needs to know the rhythmic value of every note and rest on the line. You type in the information on the keyboard, using the first letter of the value ("Q" for quarter note or rest, "H"

for half, "E" for eighth, "S" for sixteenth, and "W" for whole). If a value is dotted, type a period (.) after the letter. The input for this line should be:

```
E/E/Q/Q/Q/Q/H/Q/E/E/E/E/Q./E/Q./E/H;
```

Once again, the last item has a semicolon after it instead of a "/".



What happens if you make a typing mistake? Try it. The program will not let you enter too many rhythms, or enter a value it does not understand. If you do not end the line with a semicolon, the program will tell you there is a "syntax error," and ask you to correct the line.

Shortcuts

That probably seemed like it was a lot of typing. SCORE has many shortcuts to make this task easier. For instance, if any item repeats, you only need to type a second slash. "F4//" would be equivalent to "F4/F4/"

This works with any number of repeats (F4//// = F4/F4/F4/F4/) but there is another way to input items that repeat many times. Instead of typing "F4/F4/F4/F4/", you can type "F4x4". It's like saying F4 times four. The rhythm line could have been typed like this:

```
E//QX4/H/Q/EX4/Q./E/Q./E/H;
```

Although either way is correct, it's a good idea to learn these simple shortcuts and try to use them wherever possible.

The Marks Stage

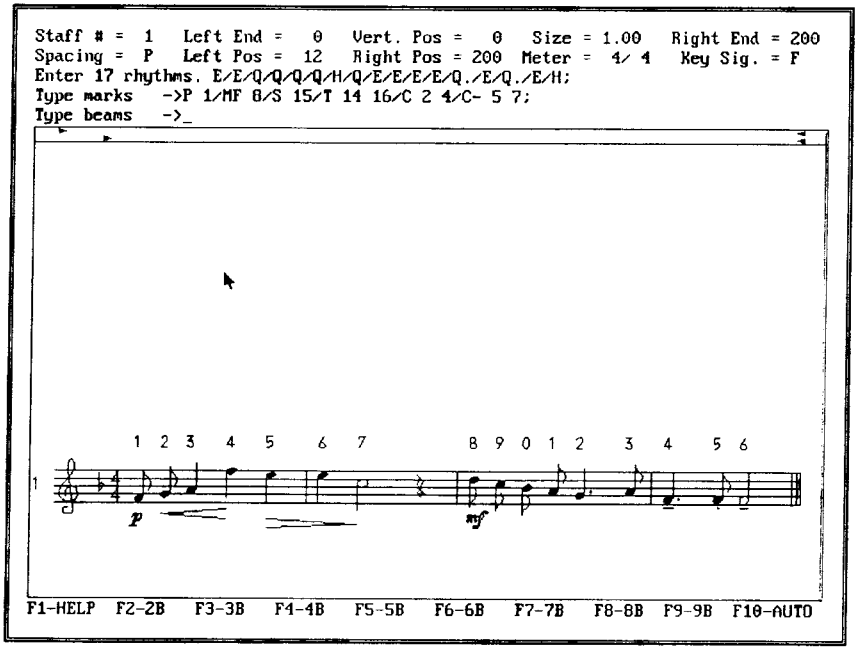
Press ENTER and the screen prompts you to `Type marks`. This input stage lets you enter:

- dynamics
- articulations
- hairpins
- various other marks

The program temporarily displays a number above every note in the line. To input dynamics, type the letter of the dynamic followed by a space and then the number for the note it should appear under. You would type `P 1` to put a *piano* under the first note. Once again type a "/", then `MF 8`. You can also input articulations, like the staccato dot under note 15, by typing `S 15`. The tenutos are input as `T 14 16`. You do not need to repeat the "T" as long as you put a space between the numbers and don't type a slash until the end of the "T" section. Your input should look like this so far:

```
P 1/MF 8/S 15/T 14 16/
```

To enter hairpins, you need to type two numbers to indicate its beginning and ending notes. Type `C` (for *crescendo*), and follow it with the number of the note where the hairpin begins, a space, and the number of the note where the hairpin ends. In this example, you should type `C 2 4`. For a `diminuendo` hairpin, repeat the process but type `C-` instead of `C`. End the line with a semicolon, press ENTER, and the marks will display.



Your input should have read: `P 1/MF 8/S 15/T 14 16/C 2 4/C- 5 7;`

Asking for Help

If it seems like SCORE asks you to remember a lot of codes for musical symbols, don't worry. Help is always available, simply by pressing F1. Try it now. You'll see lots of useful information that is *context specific*. If you are in the Marks

Stage, it will give you a list of the codes for each marking that is available. In the Rhythm Stage, it will tell you what to type for any given rhythm you might encounter. Just remember to press F1 for help whenever you aren't sure how to proceed.

The Beams Stage

The display now asks you to `Type Beams`. You can either specify the notes to beam together, or select SCORE's automatic beam function. We'll demonstrate both methods.

To specify each beam, type the first note number, a space, the last note number, and a slash. Continue for every beam on the line and end the last entry with a semicolon. For this line, your input would be: `1 2/8 11;`

If the input has a regular beaming pattern, SCORE will automatically beam the notes (wherever it is possible) based on a given number of eighth notes that you specify. In other words, if you want every four eighth notes beamed together (every two beats in 4/4 time), you would type "4B;" or press F4. [This feature will then beam anything which occupies the *space* of four eighth notes together. If one measure contained eight sixteenth notes on the first and second beat, they would also be beamed together as one group.] Try it and watch how it works.

Suppose that you wanted every two eighth notes beamed together instead. SCORE lets you edit the input you have created during the input stage. Press the ESCAPE key. The program prompts `Abandon input? (y/n)` Type `N`. SCORE now displays the input you have typed up until this point. Press ENTER to display the first line of input. This line represents the settings you made in the Staff Setup Menu. Press ENTER repeatedly until you see `4B;`, the beam

input. Press the left cursor key until the cursor is under the "4" and type 2. Press ENTER and the screen will recalculate your new input.

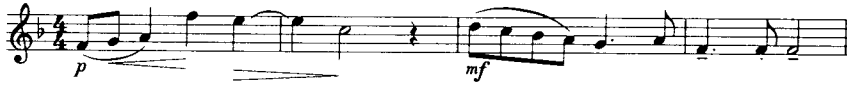
The Slurs Stage

The last part of the input stage is typing slurs. As with beams, you simply type the number of the first note, a space, then the number of the last note. At this stage, SCORE automatically decides if you need a slur or a tie for the notes involved. The correct input is: `1 3/5 6/8 11;`

SCORE now asks you if you want to `Save staff of input in a file?` This sometimes confuses people because they think this is the opportunity to "save" this file to disk. In reality, it is an advanced feature which we will explain later. Type N for No and press ENTER.

The program automatically skips to the next staff so that you can continue input. In this case we are finished, so press ESC to exit from the input mode.

You have now completed the input for your first piece.



Saving Your File

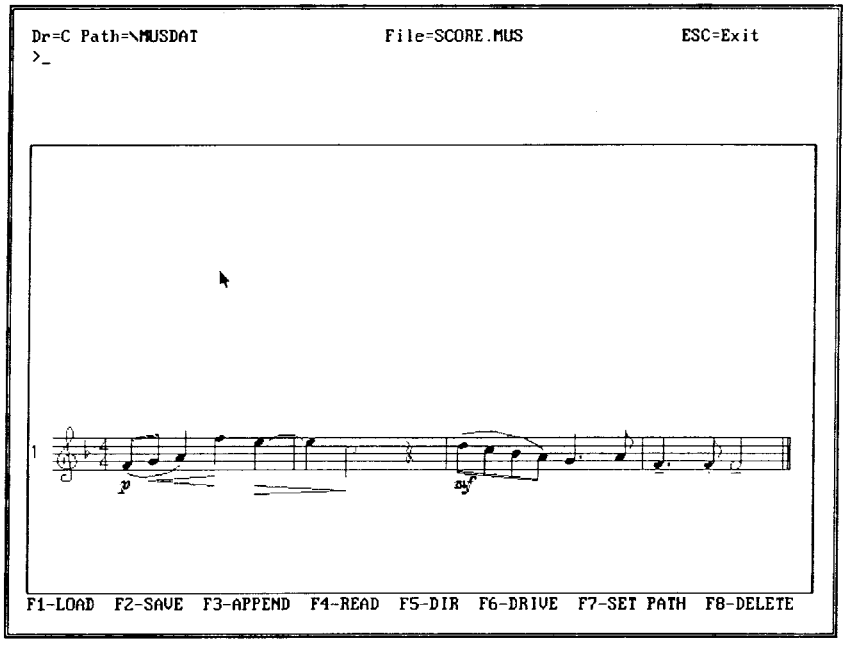
Although the music you have just input appears on the screen, it is not stored permanently in the computer. Instead, this information is kept in a special place called RAM (Random Access Memory). This is a type of short-term memory which is emptied whenever you exit SCORE or turn off the computer. Accordingly, it is very important that you save this information in a file on a disk (either a hard disk or a floppy disk).

To save your file, you must first return to the Main Window.

The easiset way to access disk functions is to change to the *Disk Window.*

Press F7

Once again, the screen changes, and it is divided into three areas.



The Status Line

This is the line of text at the top of the screen. From left to right, it contains:

`Dr=C` - this indicates which disk drive you are currently using. (If you are using a floppy disk system, it will probably read `Dr=A`.)

`Path=\` - this indicates what directory or subdirectory, if any, you are in.

`File=SCORE.MUS` - this is the name of the file that is currently open. By default, it is called SCORE.MUS until you give it another name.

`ESC=Exit` - if you press ESCAPE, you will return to the Main Window.

The Window Area

- displays your music, as in the other modes.

The Function Key Menu

Notice that these keys now have new functions, and that help is not available when you are working in the Disk Window.

To save your file to disk, press F2. The screen now displays:

```
Save current file.
Enter filename
```

You need to provide the program with a name for your file. Let's call this file, PRACTICE.MUS. (Later on, we will discuss suggested methods for naming files in SCORE.) Type `PRACTICE` ENTER and your file is saved to disk. SCORE automatically adds the extension .MUS. Notice that the "file=" indicator in the status line changes to confirm this.

Editing

Although the example you created is complete, some of the symbols may not be positioned exactly where you want them. SCORE has a versatile *Edit Mode* which allows you to control every aspect of the music.

Using the mouse, point at the "mf" in the third measure and click the middle button. A small arrow should appear on the lower lefthand corner of the "mf". You are now in the Edit Mode where you can do many powerful alterations to your music.

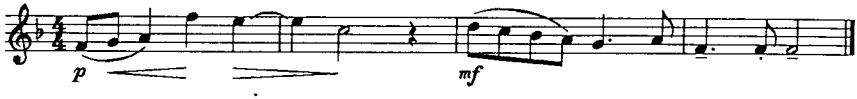
What if you don't have a mouse?
As the cost of mice is so low these days, we think it's an indispensable tool to have when working in SCORE. If you don't have one, we'll explain another method to select the item for editing.
Type: `ST1 9` ENTER. This enters the Edit Mode and selects dynamics (on this staff) for editing. Press ENTER again and you will skip to the second dynamic, the ***mf***.

When you are in the Edit Mode, both the top part of the screen and the Function Key menu change. For now, ignore the information at the top of the screen. Use the cursor keys to adjust the position of the dynamic. If you hold down one of the cursor keys, the "mf" will move continuously in the direction indicated.

Suppose you wanted to add a "mf" on the last note of the piece. Simply use the right cursor key to move the dynamic until it is positioned under the last note, then press F3 (or the INSERT key) to copy it. Now use the mouse to select the hairpin at the beginning of the piece. (Objects are always selected by clicking their lower left corner.) If you have a three-button mouse, click the middle button to select the hairpin. If you have a two-button mouse, hold down the CTRL key and click either button to select the hairpin. (If you do not have a mouse, type `ST1 4` ENTER.) Use the down cursor key to move the hairpin until it is level with the next hairpin. When you are done, press ENTER to make the change permanent. **When an item is being edited, none of the changes you make are permanent until you decide to accept them by pressing** ENTER.

If you want to lengthen or shorten the hairpin, select the item with the mouse, then press F10. This allows you to alter the right side of the object *without* moving the left side. Use the left and right cursor keys to alter the position of the

right side of the hairpin. Similarly, if you press F9 instead of F10, you may alter the left side of the hairpin instead of the right. Experiment with these functions on the hairpins and slurs in your example.



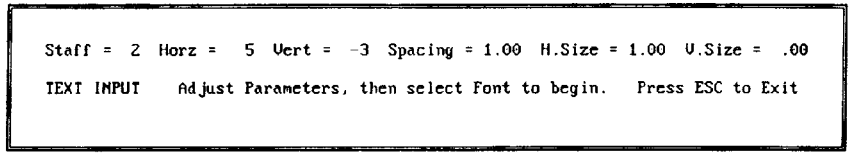
> We have just introduced you to a very important computer concept. Whenever you want to alter something, you must first *select* it, then make any changes and either accept or reject them. It may seem obvious, but it is a basic part of virtually every computer program in existence. As you proceed with learning SCORE, we will explain many sophisticated ways to do this.

Saving Changes to a File

If you like the changes you made, you probably want to save them. First exit the Edit Mode by pressing the ESC key. The status indicator in the upper lefthand corner should display PRACTICE.MUS (the name of your file). To save the changes you made (and rewrite over the original version of the file), type SM ENTER(Save Music with the SaMe name). If you want to save the changes you made *and* keep the original unedited version of the file, you need to retrace the steps outlined above (using the Disk Window) and save the file with a different name. You can save as many different versions of a file as you desire.

Inserting Text

Adding text to your piece is easy. Press F4. This puts you in the *Text Mode*. Again the Status Line and Function Key Menu change. The Status Line is now changed to a text parameter menu. We need to change some settings in this menu list before we can input the text.



The first item, "Staff = 2" needs to be changed to 1. SCORE numbers each staff in a file, and it's important to make sure the text is attached to the correct staff. You can always tell which staff you are working on by looking to the left of the staff; SCORE places its staff number in the left margin. (It's only for display and will never print with your music.)

Since the cursor is already under the "=" in "Staff =," type `1`. The next two settings indicate horizontal and vertical positio for the text; use the right cursor key to skip to horizontal position and type: `100`, then change the vertical position to 18. While these numbers may be confusing to you now, we will explain what they mean in a later section.

Before typing the text we need to select the font we want to use. A font is simply a collection of characters (upper and lower case letters, punctuation marks, and some other symbols) in a unique design. SCORE has its own built-in fonts but you will probably prefer to use different ones if you have a Laser Printer (see the chapter on Fonts in the Reference Manual). For this example, press F5 to select the PostScript font, Times Roman.

(See the reference chapter on Fonts for a list of all the fonts that are available and how to use any downloadable font.)

The screen now displays: `Type up to 160 characters`

`_00`

The "_00" indicates your font choice, Times Roman, in this case. Type your text after it.

`_00PRACTICE LINE` ENTER

The text appears above the music. Press ESC to exit the Text Mode. You may not like the position and size of this title. Click on the left side of the text with the mouse. (If you do not have a mouse, type `ST1 16` ENTER.)

If you are familiar with typography, you may wish to make your title a specific point size. Typographers use points to measure type and there are approximately 72 points in an inch. While the title is selected, type `PT` followed by a number indicating the point size. (`PT36` is a good size for a title.) The text will change size on the screen.

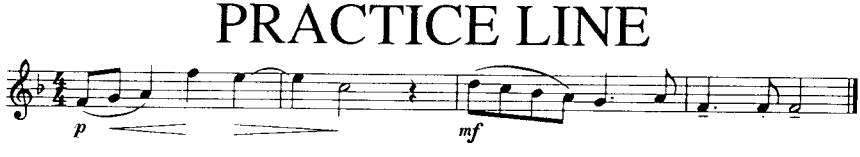
> **Why does the text look so crude?**
> SCORE does not use screen fonts to display PostScript typefaces exactly as they will print on a PostScript printer. Instead SCORE substitutes a simple stick font which it scales to the exact height and width of the PostScript printer font. SCORE has other built-in text fonts for use with a dot matrix printer.

If you desire, SCORE will automatically center your title. To do this, you must type in a special command.

While the title is still selected, type: `CT` ENTER

Later we'll explain how you can use these commands in other ways.

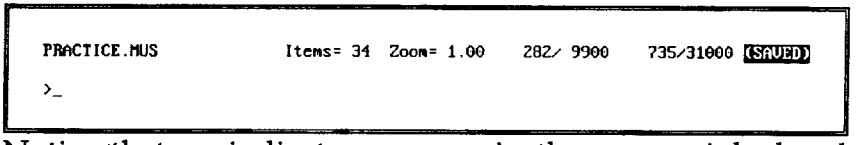
Press ESC to exit the text mode.



Quitting SCORE

Before you quit the program, you must be careful to save your work so that you will not lose any editing changes you may have made.

Type: SM ENTER [Save Music with the SaMe name]



Notice that an indicator appears in the upper right hand corner of the screen indicating your piece is now "SAVED." To quit the program and return to DOS, press F8.

What if you quit and forget to save your work? SCORE protects you from making this very costly mistake. If you try to quit, *and* you have made changes in your file since the last time you saved it, the program will display this prompt:

```
Warning: Any data not saved to disk will be
lost.
Exit main SCORE program? (Y/N)_
```

If you want to save the changes, type N for no. You can then use the "SM" command to save your work and exit the program. If not, type Y for yes and you will exit SCORE *without* saving your changes. In this way SCORE makes sure you don't lose any editing changes unless you deliberately want to.

Mouse Input

As an alternative to typing, SCORE also allows you to use the mouse for inputting. Although you may use either a two-button or three-button mouse, we strongly suggest the use of a three-button mouse for work in SCORE. (If you are using a two-button mouse, hold down the CTRL key when clicking to duplicate the function of the middle button. This section will explain how to input using the mouse.

Type: RS ENTER

to clear the screen.

The Input Mode

To enter the Input Mode, point the mouse at "F2-Input" and click the left button. (Note that any of these function keys may be activated by clicking on the appropriate menu choice with the mouse.)

Using the mouse, click on F1 to get the preset staff setup. Press the space bar. You are now ready to input pitches, barlines clefs, time signatures, key signatures and rests.

Since some things cannot be input with the mouse, you will still need to type a little.

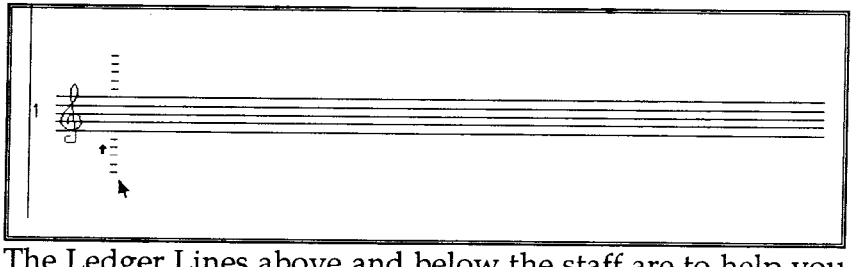
The Pitch Stage

Type: `K1F` (for the key signature) followed by a "/"

Type: `4 4` (for the time signature) followed by a "/"

Now we are ready to input the pitches. Here is where the mouse becomes very handy.

Using the mouse, point to any space or line on the staff and click with the left button. Notice that the corresponding letter name and octave number appears in the input line at the top of the screen, followed by a slash. Experiment with the mouse to get a feel for how this works.



The Ledger Lines above and below the staff are to help you position the mouse for pitches outside of the staff. After you have finished experimenting, use the BACKSPACE key to delete the extra text you have created on the input line.

Perhaps you like this method of input, but you find the staff too small to see and comfortably position the mouse. SCORE provides an easy method to enlarge the staff. Hold down the ALT key and click the left mouse button on the ledger lines. The screen magnification changes so that the position where you clicked is enlarged two times. Repeating the process will enlarge it again. Holding down the ALT key and clicking with the right mouse button reduces the magnification similarly. Pressing HOME or END automatically returns you to the default setting of "Zoom = 1."

Use the mouse to input the pitches for this example. When you need a measure line, you will still have to type M on the keyboard.

Note that you do not have to move the mouse to the right as you input the pitches, just up and down for the different notes.

When you reach the end of the line, you will need to type a semicolon instead of a slash. Then press ENTER.

> **What About Inputting Accidentals with the mouse?** SCORE does let you input notes with accidentals during the Pitch Stage (if you are using a three-button mouse). For a note with a flat, click the *right* and *middle* buttons at the same time. For a note with a sharp, click the *left* and *middle* buttons. For a natural, click the *middle* button by itself.

The Rhythm Stage

Use the mouse to click (with the left button) on the appropriate rhythmic values in the Function Key Menu. When you reach the last item in the line, type a semicolon to end the line. If you click with the *right* button the note value is dotted; the middle button creates triplet values. Note: if you have a two-button mouse, holding down the CTRL key while clicking either button simulates a middle button click.

The Marks Stage

In this stage of input, you can use the mouse to select a mark from the function key menu, or if it is not listed, type the letter command you want. Instead of following it with the appropriate number for the note it should go with, simply click the *right* button of the mouse on the pitch. If it is an item with two numbers (like a hairpin), click the left mouse button on the note where the item begins and the right button on the note where it ends. If an item begins somewhere between two notes, you may find this is an easy way to "find" the number where this is without having to type it; the mouse does the work for you. To end the line (with a semicolon) click the *middle* button of the mouse for the last entry of the line instead of the right button. Press ENTER.

The Beams Stage

As in the Marks Stage, you use the left and right buttons of the mouse to indicate the left and right notes for each beam. If you wish to use automatic beaming, click the left mouse button on the appropriate choice in the Function Key Menu. For the last item in the line, click with the *middle* mouse button (instead of the right button) for the note number and a semicolon. Press ENTER.

The Slurs Stage

Functions exactly like the Beams Stage.

At any stage of input, if you make an error, press all three mouse buttons at the same time. This is equivalent to pressing Esc and abandoning the input.

MIDI input

A MIDI keyboard can be used during the Pitch Stage to input pitches. Simply play the notes (or chords) instead of

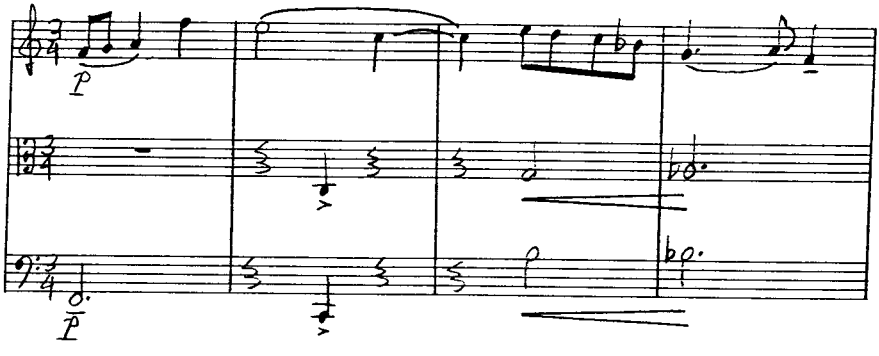
typing commands or using the mouse. You will still need to type commands for clef changes, key signatures, time signatures, and barlines.

Chapter Two
Creating a Page of Music

In this chapter you will learn how to:

- Input a three-stave file
- Use SCORE's Lineup and Justify function to space your music
- Retrieve files
- Combine three files to create a page
- Change magnifications to view your page in different ways
- Print a page

You will begin by inputting this example:



Inputting a Three-stave File

Type: SCORE ENTER

Press any key to get to the Main Score Window, then press F2 to begin input. Press the space bar to get the first staff on the screen.

SCORE always builds files from the bottom up. This is an important concept, which we will now demonstrate to illustrate its logic.

We will begin the input with the bass part. The first item on the line is a barline, but it needs to connect all three staves. Type M3 for a **M**easure line up **3** staves. Now type BA for bass clef, then 3 4 for the time signature. Don't forget to put a slash (/) between entries.

Now you are ready to input the pitches. You will notice this line has one accidental. To make a note flat, you add an "F" after its note name (i.e.: "GF4"). For a sharp, use "S", a natural "N", a double flat "FF", and a double sharp "SS". Now go ahead and input the pitches. When you need to input another barline, you could type "M3" again, but SCORE actually remembers the number of staves to connect, so type "M" instead.

Continue through this staff and input the rhythm, marks, etc. (If you do not need to input one of the stages, Beams, for instance, simply type "; ENTER".)

The correct input for this example is:

```
M3/BA/3 4/F2/M3/R/C/R/M/R/B3/M/BB/M;

H./QX4/H/H.;

P 1/T 1/A 2/C 3 4;

;

;
```

> If you examine the Pitch input for this example, you will notice we typed BB instead of BF for B-flat. This is a shortcut SCORE provides for you. Type any pitch letter twice and the note will have a flat.

When you are finished, the program prompts you with `save staff of input as a text file?` As you did in the last chapter, type `N` for no. You will notice that the program automatically jumps up to staff 2 (with the same settings as staff one) so that you may continue input. Before we do so, let's change one of the default settings in the Staff Setup Menu.

Setting "Spacing" for Input

Use the right and left cursor keys to move the flashing cursor to the "SPACING =" setting. It is set to "R" for Rhythmic spacing. This controls the spacing and display of the music *during input* and can be changed later. In this case, where there is music on more than one staff, we want to input the first line with rhythmic spacing (SPACING = R), then space every *additional* line according to the layout of the first (SPACING = 1). Type a "1" here so that staff 2 will be spaced according to staff 1.

Now go ahead and input this line. Since you included barlines in the first staff, do not type any now. The input abbreviation for alto clef is AL.

How to input a whole rest

The first measure contains a whole rest. SCORE treats these in a special way. In the Pitch Stage, input it as "RW" (Rest Whole). In the Rhythm Stage, assign this RW a value equal to the *exact number of beats it occupies* (in this case, a dotted half or "H."). If you were in 2/4 meter, the RW would be "H" for half; in 4/4, it would be "W" for whole. Later, we will show you how SCORE automatically centers whole rests.

What If You Can't Read Alto Clef?
SCORE is extremely flexible with regard to how you can input. If, as in our example here, you need to input a line in alto clef, and you do not read music in that particular clef, you can use an *invisible* clef to help you.
During Pitch Input, after you type "AL" and before you type any pitches, type "-tr". This puts in an "invisible" treble clef so that you can input the pitches as if they were in treble clef. For the above example, the input would read:
AL/3 4/-TR/RW/R/B3/R//F4/GF;
It's possible to use any clef as an invisible clef. The program doesn't physically put a clef on the staff — it's just an input trick. Try it.

The correct input is:

```
AL/3 4/RW/R/C3/R//G/AA;

H./QX4/H/H.;

A 1/C 2 3;

;

;
```

Editing While in Input Mode

Before you go on to the last staff, we'd like to demonstrate why we had you set "SPACING = 1". Press ESC and type N. Press ENTER until you see the input line for the rhythm stage. Using the BACKSPACE key, change the last rhythm from a dotted half note to a half note. This will put one less beat on staff two than is on staff one. Press ENTER until you have scrolled through all of the input. The screen will now redraw with your new input until it reaches the rhythm

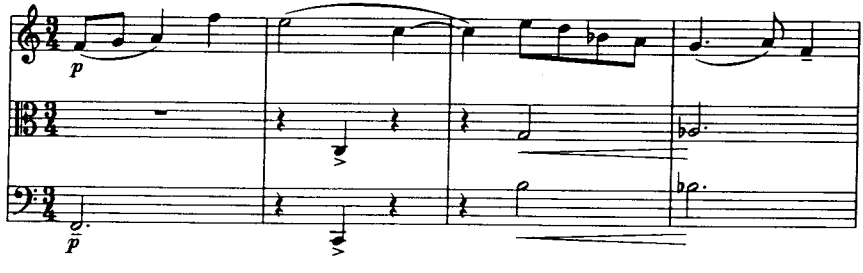
line, at which point it will stop and tell you there is an error ("Spacing staff has 12 beats, staff 2 has 11 beats, press any key to continue").

The program does this to alert you that you have input a staff with more or less beats than the spacing staff (Note: it does *not* check the time signature to see if you have the correct number of beats in a measure; it simply counts the total number of beats in the new staff of input and makes sure it is equal to the total number of beats in the spacing staff).

This is a convenient way to catch errors at an early stage of the game. Press any key and the program will finish the input. Now press ESC again, type N and ENTER until you are again at the rhythm line. Type R and correct the last value to a dotted half note from a half note. Press ENTER until you have scrolled through each entry. Type N when it asks you to save staff of input to a text file and you are ready to go on to staff three.

Go ahead and input this staff. The abbreviation for treble clef is "TR". When finished, your input should be:

```
TR/3 4/F4/G/A/F5/E/C//E/D/BF4/A/G/A/F;

E//Q//H/Q//EX4/Q./E/Q;

P 1/T 14;

1 2/8 11;

1 3/5 7/6 7/12 13;
```



Once again, type N when it asks you to save staff of input as a text file, and press ESC to exit the input mode.

Before you proceed any further, it's a good idea to save your work. You can change to the Disk Window and follow the procedure in Chapter 1, or simply type `SA EXAM1A` ENTER. SA is the "SAve" command, and you will be using it frequently when working in SCORE. Notice that we did not specify an extension for the filename. SCORE automatically uses the same extension as the filename that appears in the upper lefthand corner of your screen. Since SCORE defaults to the filename SCORE.MUS, it will also default to the extension .MUS, which we generally recommend as a good extension to use for SCORE files.

Since this page has three systems on it, we are calling the top file **EXAM**ple **1** (the page number) **A** (the first system) **.MUS** (SCORE's default extension). SCORE likes to look for files in sequential order (numerical or alphabetical) so we will name the next file EXAM1B.MUS, and the last file EXAM1C.MUS.

The Proximity Mode

In certain examples (like the top staff in the previous example) you have to specify different octave numbers due to the wide range of the part. SCORE provides a way around this: *The Proximity Mode.*

The Pitch Input for the top staff was:

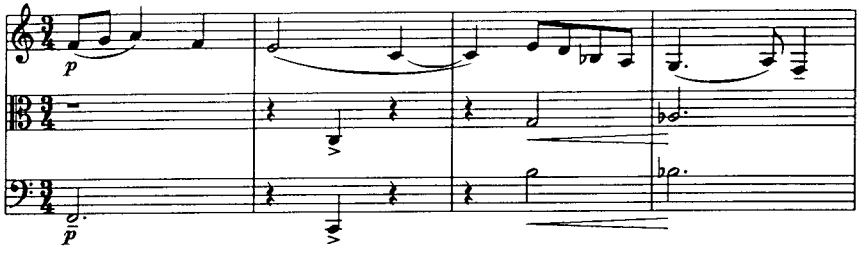
`TR/3 4/F`**`4`**`/G/A/F`**`5`**`/E/C//D/C/BF`**`4`**`/A/G/A/F;`

To avoid specifying the octave numbers, type "P" before you begin typing pitches, like this:

`TR/3 4/`**`P`**`F4/G/A/`

The "P" begins the Proximity Mode. SCORE now assumes that every pitch you indicate should be the one *closest to the previous note.* Finish the line, to produce this input:

```
TR/3 4/PF4/G/A/F/E/C//E/D/BB/A/G/A/F;
```



But that example is wrong. The fourth note should be F5, but SCORE chose the F closest to the previous note, F4. It then continued by choosing the closest pitches and input the rest of the example an octave too low. There are two solutions to this problem. 1) You can always specify an octave number while in Proximity Mode to override the automatic selection. 2) You can use the letters "U" and "J" to jump **U**p (to the nearest note within the octave) or **J**ump down relative to your current position. (Obviously, we can't use the letter D to jump down an octave as it represents the pitch D.)

The following input will yield the correct results:

```
TR/3 4/PF4/G/A/FU/E/C//E/D/BB/A/G/A/F;
```

```
TR/3 4/PF4/G/A/F5/E/C//E/D/BB/A/G/A/F;
```

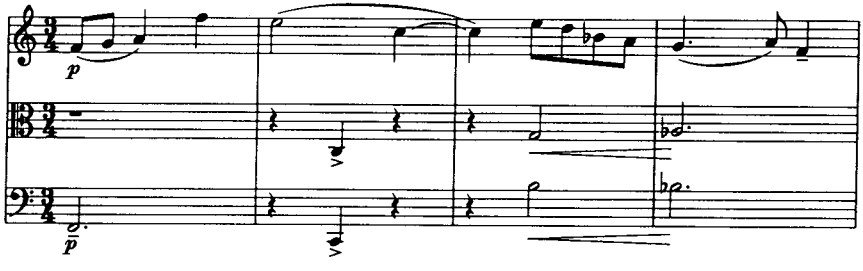
will also work correctly. The Proximity Mode is especially useful when inputting scales that cross octave boundaries.

Note: The Proximity Mode remains "on" until you exit SCORE or cancel it by typing the letter O (for **O**rdinary Mode). The default mode is Ordinary Mode.

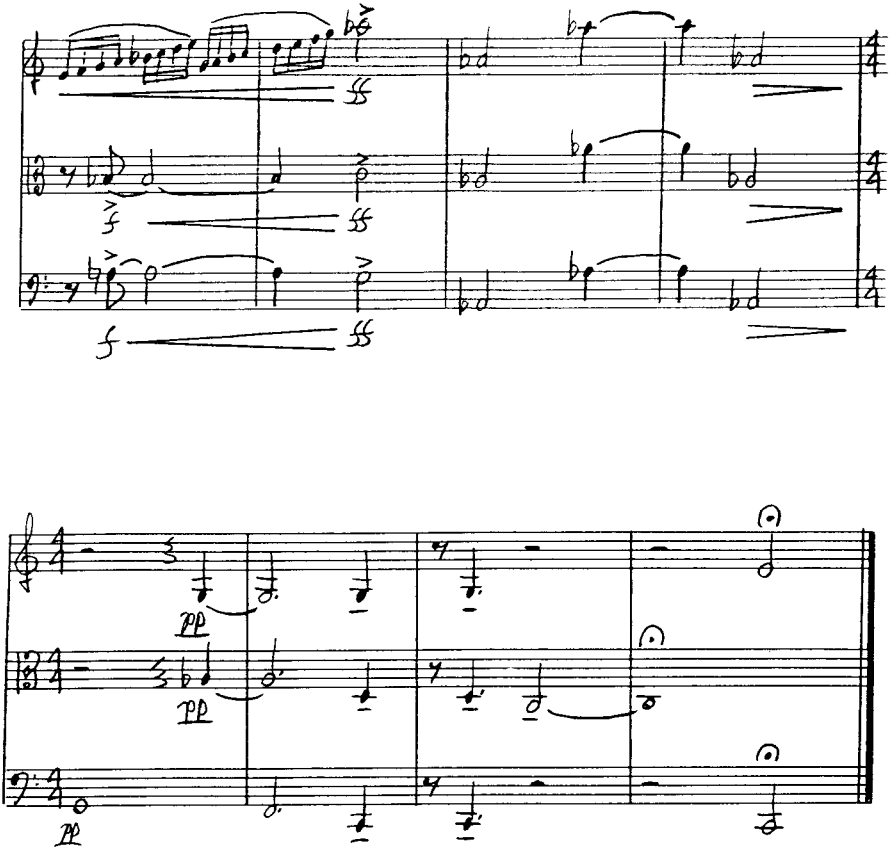
Lineup and Justify

Your example is not spaced well horizontally. Some note values are too crowded, and some places have too much space. SCORE has a very sophisticated way to justify music which closely emulates the spacing methods actual engravers use.

You should presently have your example displayed on screen, and be at the Main Window. To justify the example, type LJ (for Lineup and Justify). The program asks you the number of the bottom staff (in this case "1") and how many staves there are in the whole system (in this case "3"). Type 1 3 ENTER. In case you made a typing error, SCORE allows you to cancel the operation. Press ENTER again and watch the screen. The program searches through all the information on the staves, lines up every simultaneous rhythmic event, then spaces the system proportionally. When finished, it should look like this:



Now let's save the file again. Type SM ENTER. This command saves the file and writes over the original version of the file. For you to get some practice with the input mode, we would now suggest you input these other two files. The file you have already input will be file one; the next files are numbers two and three. Here is the music to input:



If you get stuck, we have included the exact input information below.

Remember to save your files, perform LJ and save them again. When you are finished, type RS to restart the program and continue the input for the next file. Don't worry if you have trouble or can't finish the input — we've already created these files for you and placed them in a special

directory called MUSDAT (on your Hard Drive). When you are finished, it's a good idea to perform the Lineup and Justify routine and then save your work.

The correct input for these files is:

File Two

Staff One:

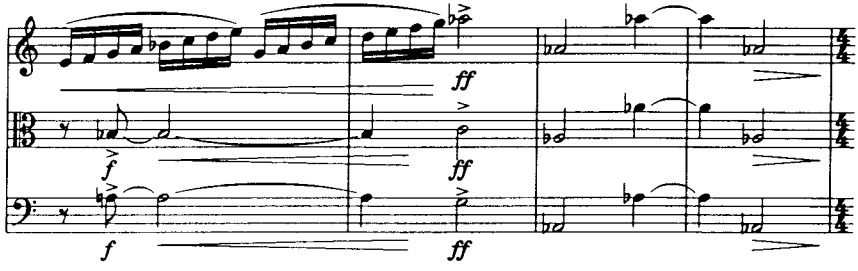
```
M3/BA/R/AN3//M/A/G/M/AA2/AA3/M/A/AA2/M/4 4;
E//H/Q/H//Q//H;
F 1/FF 4/C 2 3.5/C- 8 8.8/A 1 4;
;
1 2/2 3/6 7;
```

Staff Two:

AL/R/BB3X3/C4/AA3/AA4//AA3/4 4;
E//H/Q/H//Q//H;
F 1/FF 4/C 2 3.5/C- 8 8.8/A 1 4;
;
1 2/2 3/6 7;

Staff Three:

```
TR/PE4/F/G/A/BB/C/D/E/GJ/A/B/C/D/E/F/G/AA/
AA4/AA5//AA4/4 4;
SX16/H//Q//H;
C 1 16/FF 17/A 17/C- 21 21.8;
2B;
1 8/9 16/19 20;
```



Save this file as EXAM1B.MUS

File Three

Staff One:

```
M3/BA/4 4/G2/M/F/C/M/R/C/R/M/R/C/MH;
W/H./Q/E/Q./H//;
PP 1/T 3 4/FE 5;
;
;
```

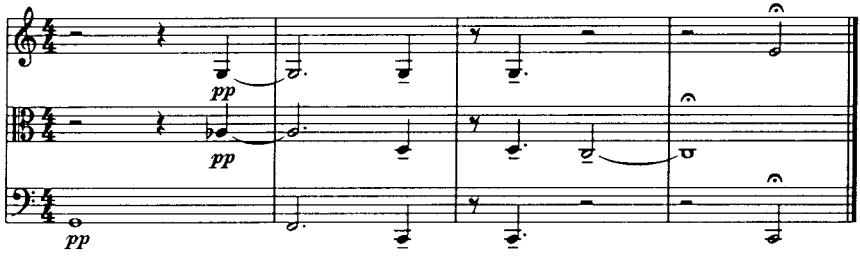
(Note that the input code for fermata is FE.)

Staff Two:

```
AL/4 4/R//AA3//D/R/D/C/;
H/Q//H./Q/E/Q./H/W;
PP 1/T 3 4 5/FE 6;
;
1 2/5 6;
```

Staff Three:

```
TR/4 4/R//G3X3/R/G/R//E4;
H/Q//H./Q/E/Q./HX3;
PP 1/T 3 4/FE 5;
;
1 2;
```



Save this file as EXAM1C.MUS

How to retrieve files

Now that you have completed the input for your piece we'll show you some ways to manipulate the files. First type RS to restart SCORE. To retrieve a file, you use the Get command. Type G followed by a space and the file name (i.e., G EXAM1A.MUS). As we mentioned before, SCORE prefers file names that are sequentially named. This allows the program to find the next file and eliminates the need for you to do a lot of typing. Type NX. SCORE goes to the **NeXt** file. Type NB. SCORE goes to the **N**ext file **B**ack. You will find these commands indispensable for moving between files in SCORE.

Suppose you want to "paste" these files together to create a page. (It's not necessary to do this to print the page, but sometimes you may want to see what the whole page looks like.)

Combining Files

First let's combine the files. Type RS to clear the screen and restart the program. Now type COM ENTER to **COM**bine the files.

A prompt appears asking you for the name of the first file (the top file). Type EXAM1A.MUS ENTER. The program now asks you how many files there are to combine (or, to put it another way, how many are on the page). Type 3 ENTER. After a few seconds all of the files will appear on the screen.

So far, the page doesn't look too good. The staves are too crowded vertically. To fix this, SCORE provides a method of vertical justification which is similar to the horizontal method you have already learned (the LJ command). The vertical justification command is VJ.

Type VJ ENTER.

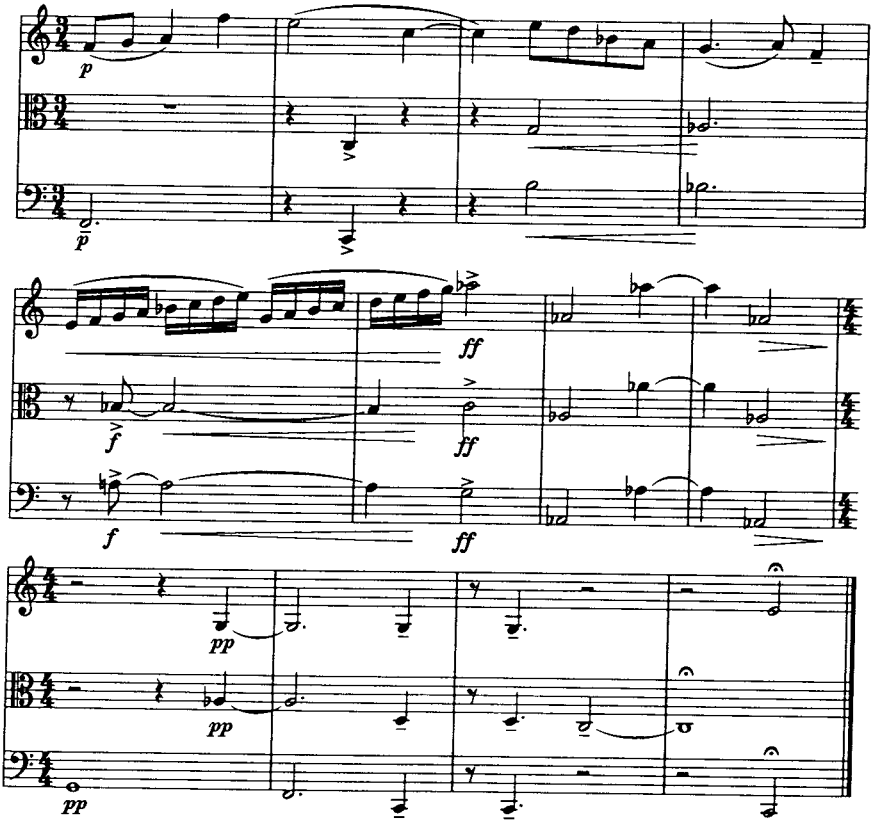
SCORE prompts:

```
Type minimum vertical and horizontal overlap
space. (default = 4,4).
>_
```

Press ENTER to accept the defaults. SCORE prompts:

```
Press "B" or <ESC> to backout, or <ENTER> to con-
tinue
->_
```

(SCORE gives you the option of aborting the operation.) Press ENTER to continue. SCORE adjusts the staves to allow for the *minimum* space between items. In this example, VJ added space between some staves so items would not overlap, and removed space between others where it was not needed.



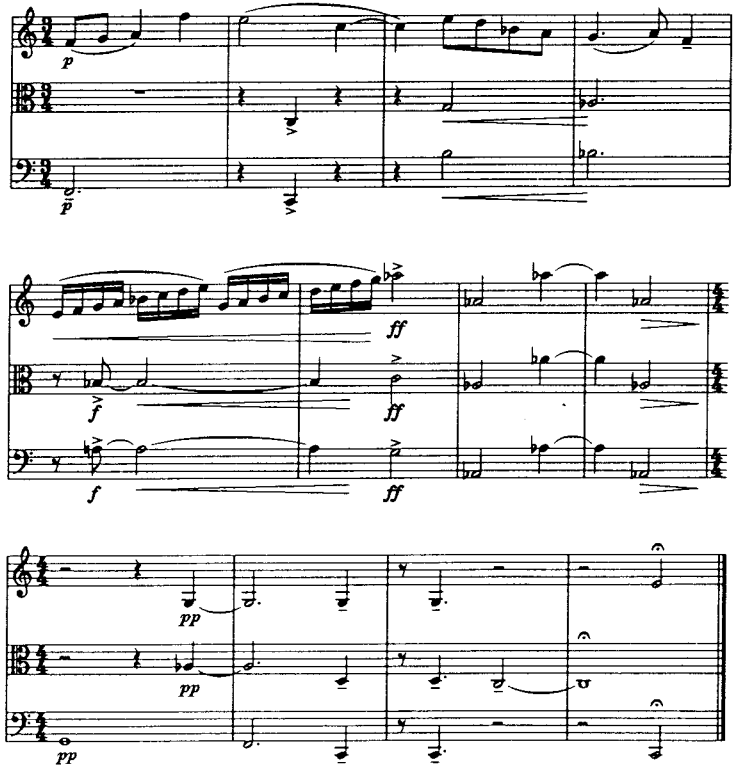
Now we want to fill out the page height. SCORE has another command, the H command, which may be used for this purpose. Type H ENTER. SCORE displays:

```
Total inches = 8.133
Type new size ->_
```

The program tells you the current height of the page (8.133") and asks you what you want to change it to. Type 9 ENTER. This number indicates the new height in inches.

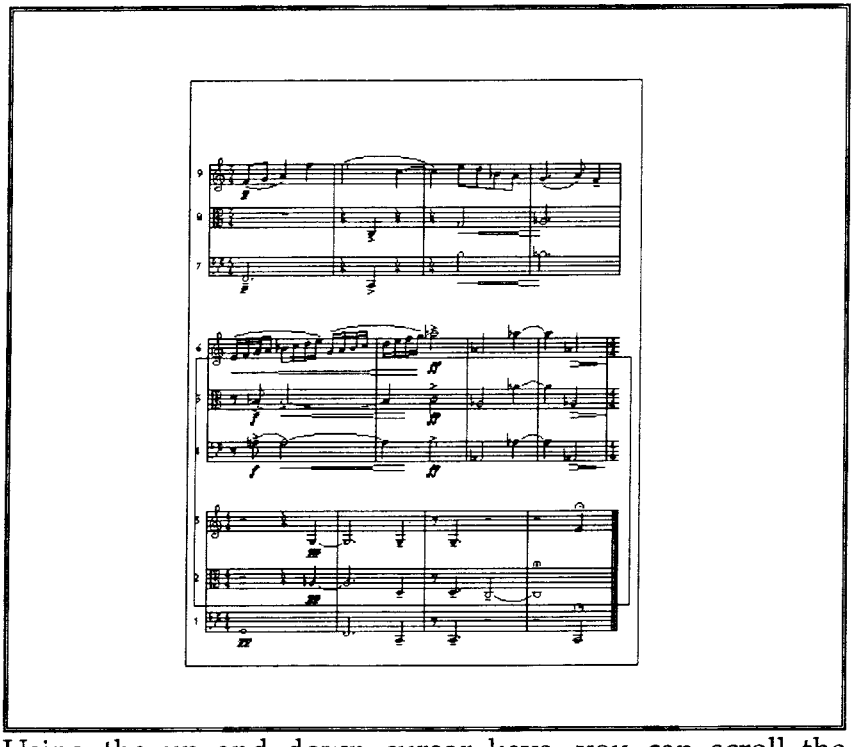
```
Type number of staves in each system.
(Include unused staves.)
```

SCORE can put extra space between the systems if you tell it how many staves are in a system. Type 3 ENTER since there are three staves in each system. The screen now displays the nine staves of this file evenly spaced in a height of nine inches.



Changing Views

Unless you have a large-screen monitor, you probably can't see all of the music. Hold down the ALT key, and type S (for Show). The screen changes to a full-page display of the music. Note that there is a box around the lower portion of the image. This indicates the Window Area. Play with the cursor keys, and watch this area move. Press ENTER to return to the work screen.

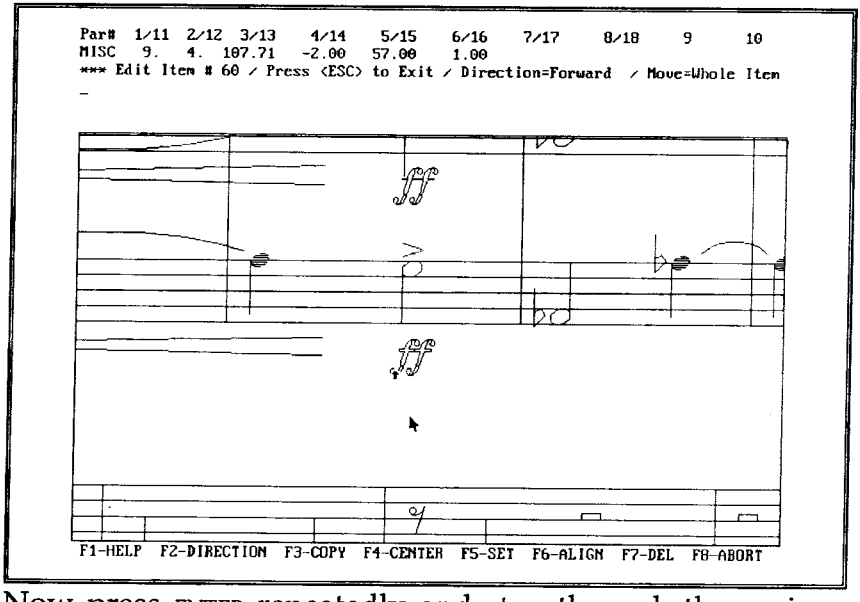


Using the up and down cursor keys, you can scroll the music up and down. Or press PAGE UP and PAGE DOWN to move the image up in larger steps. To jump to the top of the file, press HOME. END returns you to the bottom. Since the right and left cursor keys move the Text cursor, SCORE uses F9 and F10 to move horizontally.

Suppose you want to enlarge a portion of the screen for a closer look. Hold down the control key, then press PAGE UP repeatedly until you reach a magnification you like. Similarly, CTRL + PAGE DOWN reduces the image. Pressing END will always bring you to the bottom position at the normal size. HOME will bring you to the top of the file at normal size. Experiment with these keys to get a feel for resizing the music image.

Zooming in on a Specific Object

SCORE has a special way to change screen magnification which you may find extremely useful when editing. Select any object in the file (click with the middle mouse button, or type ST2 1). *Before editing the object,* type ZZ ENTER. SCORE changes to a 200% magnification with the item centered in the screen.



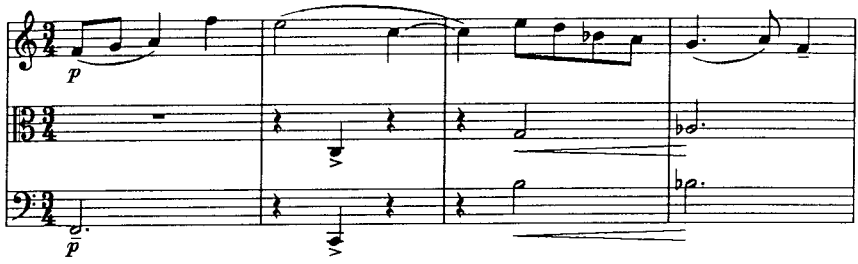
Now press ENTER repeatedly and step through the various items on the staff. As you select an item which is not in view, SCORE scrolls the image so that you can always see

what you're working on. With the ZZ command, you can edit a score at 200% view and always see what you're working on.

> You can also select an item for enlarged view by holding down the ALT key and clicking on the item with the left or middle mouse button. SCORE changes to a magnification (twice the current magnification) and centers the item in the display. Repeated clicks of the left or middle button will continue to enlarge the area by the same amount; clicking with the *right* mouse button will reduce the magnification similarly. **Note: for this to work properly, you must not move the mouse will clicking.**
>
> If you want to select an *area* for enlargement, hold down the ALT key and *drag* diagonally across the area you wish to enlarge. SCORE automatically enlarges this area for viewing. These combinations work in the various different modes of SCORE, and are indispensable when editing.

Centering Whole Rests

Save this newly combined file as EXAM1.PGE (type `SA EXAM1.PGE` ENTER). The last thing we want to do before printing is to center the whole rests. SCORE has a *Group Command* which does this (a Group Command alters a group of items as opposed to a single item). Type `CW` followed by a number which indicates which staff you want to center the whole rests on. (CW3 would center all the whole rests on staff 3.) If you would like to perform this operation on all nine staves at the same time, type `CW` followed by a number greater than 32 (i.e. CW33). Since SCORE limits you to 32 staves in a file, some commands can function for all staves if you indicate a staff number greater than the number of staves possible. CW33 or CW99 would work just as well.



SCORE's standard page size is 8½ x 11" (although you can create a page of any size). The default width of the staff you have created is 7½", which allows a half inch on either side of the staff for a margin.

Printing the Page (PostScript Printer)

To print this page, press `F6 - Print`. The program asks you for the size. SCORE will let you reduce or enlarge the page to any percentage. The default size is 1 for 100%. Since we set up this piece to be 7½" wide and 10" tall, it should fit nicely on the standard 8½ x 11" paper. Press ENTER to accept this size. The program now asks if you want to use a different paper size (in your printer). Press ENTER to accept the default, normal letter size paper (8½ x 11"). You are now asked to specify the X and Y offsets. These are, respectively, the distance from the left side of the paper to the beginning of the staff, and the distance from the bottom of the paper to the first staff line of the bottom staff. Press ENTER to accept the default settings. Press ENTER to accept the default setting for the linewidth (this is an advanced feature we'll explain in more detail later). SCORE prompts: Laser Printer or PostScript File? SCORE allows you to "print" your page to a file so that you may bring this file to a different computer (or service bureau) to print your page(s) there. For now, we will send this file directly to the printer. Select L for laser printer. Press ENTER. In a moment, you will have your first page of music!

If you don't own a PostScript printer but have access to one, select "File" at the last prompt. SCORE will ask you to supply a filename. Type any name (perhaps EXAM1) and do not type an extension or period. SCORE automatically adds .EPS to the filename, and "prints" the page to a file on your disk. If you copy this file onto a floppy disk, and bring it to another computer (that is connected to a PostScript printer) you may *download* this EPS file to print it out.

One easy way to do this is with the DOS copy command. Type: `COPY *.EPS LPT1`ENTER.

Note: using the above method, you must specify which port is being used for the printer (usually COM1 or LPT1).

If you are using a dot-matrix printer, you must use the SPRINT program to print. Exit SCORE. Type `SPRINT` ENTER.

A menu appears; select option 2, dot-matrix printer.

The prompts that follow are similar to those for a laser printer. Press ENTER at the size prompt. SPRINT now asks for the X-offset. (You only specify the horizontal position since Dot-matrix printers can use continuous-feed paper.) Press ENTER to accept the default, and the page will print.

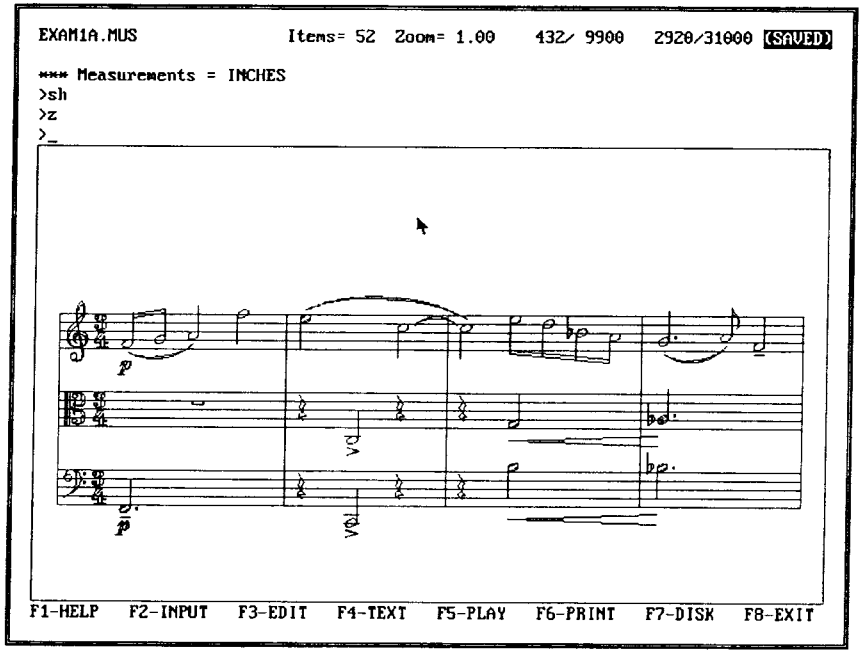
Why Does the Screen Display Look So Different From the Printout?

SCORE is very careful in managing memory. As you might guess, it takes a great deal of memory to create a screen image which is close to the final printed version of your page, and the current limitations of monitor resolutions make it nearly impossible to create a display equal to today's high-resolution printers (which can print up to 3,000 dots per inch).

SCORE puts a simplified graphic version of your music on the screen. It is accurate enough to do most layout and editing. And there *is* a way to see some of the actual fonts that print out.

Let's get one of the files you just created. Type G EXAM1A.MUS. Once the music appears on the screen, type SH ENTER for **SH**ow. Nothing happens. For SCORE to show you the actual fonts it uses, it needs to recompute the entire display. To do this, type Z ENTER.

Periodically, you will use this command to automatically recompute the display. After a few seconds, you should see a very different image on the screen. Whole notes and half notes now appear as they will on your printout. The time signatures are represented by their actual font.



To conserve memory in this mode, quarternotes are not filled in, they are represented by open circles. Slurs have thickness, and beams are the actual width that will appear on your printed page (although they are not displayed as solid lines).

This feature can be useful from time to time, but you must be careful with it. It can take two to three times as much screen memory to create this "true" display, and sometimes you won't have enough memory available to do this. This is one of the reasons SCORE puts a memory indicator in the upper righthand corner of your screen. When you first opened this file, the memory indicator in the righthand corner read 962/31,000. This means you used 962 of 31,000 vectors to create this display.

After using the Show command, the display changed to 2,775/31,000. That is nearly three times as many vectors to create the "true" display. For a simple three-stave file like this, you are well within the limits. But when you start to do bigger files, like orchestral scores, you will find yourself approaching the 31,000 vector limit very easily.

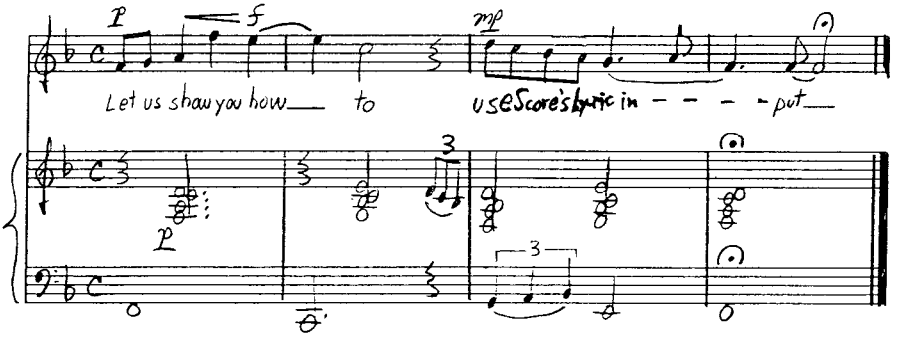
Chapter Three

A More Advanced Example (with lyrics)

This chapter will demonstrate:

- How to input a Piano/Vocal Score
- How to input triplets
- Some input Macros (keyboard shortcuts to save time)
- How to input Lyrics
- How to Justify the music based on the Lyrics

We will input a typical piano/vocal score.



Inputting a Piano/Vocal Score

Start SCORE and press F2 to begin input.

Before we begin input, let's change one of the settings on the menu at the top of the screen. Use the left cursor key to move to the "Key sig. = C" and type F. Do not press ENTER to accept the setting—in these types of menus the setting is automatically entered as soon as you move to a different position in the menu. Use the cursor key to move to the next setting, and the key signature is set. Next press F6 to retrieve

the Piano/vocal setup. Now the proper key signatures should appear. Go ahead and input the bass line of the piano part. To create the "Common Time" time signature, type COM. (CUT would create the "cut time" time signature.)

> Note that the key signature that you preset in the staff setup menu is retained in memory during your work session (until you exit SCORE). In fact, every time you begin input, the key signature will be created on the staves (unless it is set to the key of C). This is a handy shortcut that saves you from having to re-input the key signature every time you work. And the feature is context sensitive. If you change key during a line of input, the menu indicator will change, too.

Triplets

This example contains a quarter-note triplet in the third measure. Input the pitches normally. During the Rhythm Stage, type a T in front of the normal note value (i.e. "TQ"). This will make the duration a Triplet Quarter note. The same applies to other note values (TE is a triplet eighth, TW is a triplet whole, etc.). You can also use the function keys to input triplet rhythms. Hold down the ALT key while pressing a function key for any displayed rhythmic value, and SCORE will input that rhythm as a triplet. If you press ALT + F2 you will input a triplet quarter instead of a regular quarter. See the Tuplet section in the reference manual for information on how to input other types of irrational rhythms.

> Note: there is a similar shortcut for creating dotted rhythms. Hold down the SHIFT key and press any function key. A dotted note value is created.

For this line, the correct rhythmic input is:

```
W/H./Q/TQX3/H/W;
```

"TQX3" is the same as "TQ/TQ/TQ/" or "TQ///". You may use whichever method you prefer. You will not see a triplet bracket at this point in the input stages. The notes appear as ordinary quarter notes, but they actually have triplet durations. (SCORE's automatic spacing program will recognize the difference between a triplet quarter and a regular quarter.) The actual triplet bracket is added in the slur input stage.

When you reach the Marks Stage, you will have to input a Fermata for note 7. One way to determine the correct code for this is by pressing F1. A help screen appears which lists the various marks and the letter code used for their input. Determine the correct code, then continue on with the input.

As mentioned above, the slur stage is where you input the bracket for the triplet. (Technically, SCORE creates the bracket from a slur.) Determine the first and last notes where the bracket will appear (notes 3 and 5 in this case). To create the bracket, you add 300 to one of these note numbers (i.e. 303 5 or 3 305). Any type of Tuplet Bracket can be created by modifying one of the note numbers in this fashion (503 5 would create a quintuplet bracket, 603 5 a sextuplet, etc.) Since there is also a slur on these notes, you would also type 3 5. The correct slur input is:

```
303 5/3 5;
```

Press ENTER.

Forcing a Slur Direction

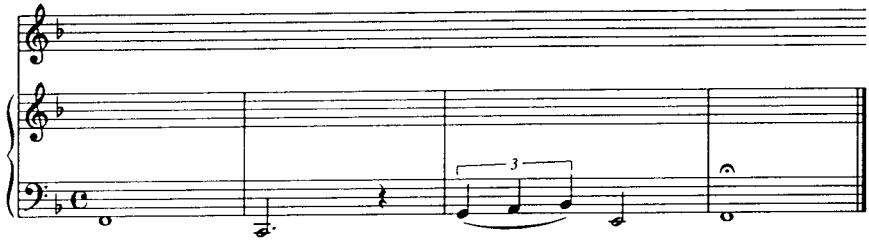
Suppose you wanted the Triplet Bracket above the staff, at the stem side of the notes. Press ESC and type N to redo the input. Press ENTER repeatedly until you reach the line for slur input. Using the cursor keys, backspace until the cursor

is under the first 5, press INSERT and type +. (INSERT allows you to insert characters in the line of text, otherwise your typing would "typeover" any characters in the line.)

Typing a plus in front of the second note number means that you want the slur (or bracket) to be above the notes. If you typed a minus (-) the slur would be below. If you do not specify which direction you desire, SCORE makes the decision for you. This method of using a plus or minus also works to force beams above or below.

Press ENTER and finish out the input. The correct input for this staff is:

```
COM/F2/M2/C/R/M/G/A/B/E/M/F/MH;

W/H./Q/TQX3/H/W;

FE 7;

;

303 +5/3 5;
```



Inputting Chords

Now for staff two. To create notes in a chord, type a colon (:) or single apostrophe (') between pitches (in SCORE's input stage, the colon and apostrophe are equivalent). For example, the first chord in this example is "F3:A:C4:D" (or F3'A'C4'D). Notice that you only need to restate the octave number when it is different from the preceding note. The correct pitch input for this staff is:

```
T/R/F3:A:C4:D/R/E:C:B3:G/D4/C/B3/F:A:B:D4/E
:C:B3:G/F:A:C4:D;
```

> Why didn't we type COM for the time signature? SCORE remembers the last time signature used (until you exit the program) and allows you to recall it with a simple shortcut: **T** will input the last time signature specified.

You can type in the pitches for each chord in any order. We alternated going up and down to avoid retyping octave numbers.

But that's a lot of typing to input a few chords. If you are using a MIDI keyboard, you can just play the chords and let SCORE figure out what notes they contain. Or you can use SCORE's sophisticated Macro language to help shorten your typing.

Inputting Macros (Motive Macros)

ANYTHING you type in the input stages can be saved in a Macro and used repeatedly. A Macro, to put it simply, is just a keyboard shortcut. (You may have used them in a word processing program when you had to type something repeatedly.) To create a Macro in SCORE's Input Stages is a two-step process.

First you must define the Macro. You can create up to 26 Macros in the Input Stage. You type any letter of your choice followed by an open bracket ([). Now type whatever information you want the Macro to contain and end it with a close bracket (]). That's all there is to defining a Macro. A Macro for the first chord in this staff of input could read "F[F3:A:C4:D]". We chose the letter F to represent this chord because it is an F6th chord; you can use any letter of your choice.

Once you have defined the Macro, you need a way to recall it. Simply typing "F" would not work—the program would think you were inputting the pitch F. To differentiate it from a pitch, type the "@" symbol before the letter of your Macro (i.e. "@F" in this case. You can use the Macro as many times as you like, but you cannot type "@Fx4" or any other number to make it repeat (you would have to type "@F/@F/@F/@F"). Additional slashes also do not repeat the Macro ("@F////" would not work).

You could reinput this staff like this:

```
T/R/F[F3:A:C4:D]/R/E[E:C:B3:G]/D4/C/B3/F:A:
B:D4/@E/@F;
```

That saves time, but SCORE provides a further enhancement for Macros that is only available in the Pitch Stage. By typing a positive or negative number after the Macro, you can *move it up or down* any number of scale spaces. The shape of the group (and any accidentals it may contain) are retained. Let's see how this can work for our example.

Since we defined the chord in the second measure as "E," we can use it to create the first chord of the third measure by typing "@E-1". This moves the chord down one scale space to begin on F instead of G. If you typed "@E2," the chord would begin two spaces higher on B. A shorter version of our current input could read:

```
T/R/F[F3:A:C4:D]/R/E[E:C:B3:G]/D4/C/B3/@E-1
/@E/@F;
```

Note that this "scale space" movement is unintelligent, and does not indicate half or whole steps. Instead, SCORE is simply moving the motive up or down the number of spaces indicated.

This type of Macro may also be used for transposing melodic motives that reappear sequentially throughout a piece.

Finish inputting the example. To place a "3" over the beam, add 300 to one of the beam numbers (as you did for a triplet bracket in the staff one).

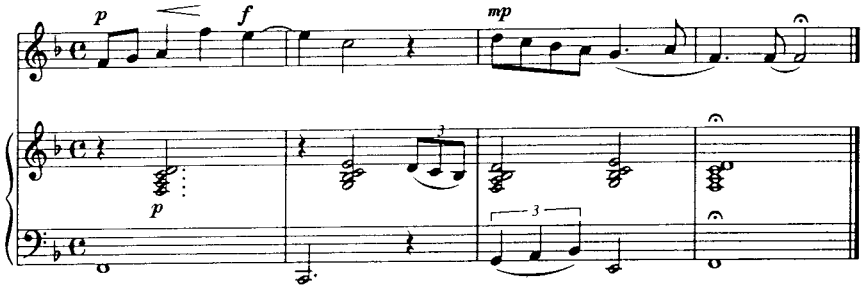
Now input staff three. To create marks above the staff, you put a minus sign before the letter command (not the note number). For instance, to place a "P" above note 1, type `-P 1/`. Notice that this works differently than in the Slurs and Beams Stage. The minus sign does not indicate the mark should go below the staff (since it actually will put it above) but rather indicates that the mark should be positioned *opposite* to the normal placement. This also allows you to force articulations to the stem side of the note (they usually are positioned by the notehead).

The correct input for this staff is:

```
T/F4/G/A/F5/E/M/E/C/R/M/D/C/B4/A/G/A/M/FX3/
MH;

E//QX4/H/Q/EX4/Q./E/Q./E/H;

-P 1/-C 3 4/-F 5/-MP 8/FE 16;

4B;

5 6/10 11/15 16;
```

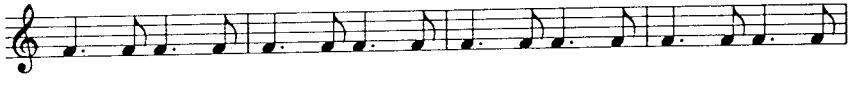
Before we proceed to inputting lyrics, we should perform a Lineup and Justify routine to this example and save our work.

Type `LJ` and follow the prompts. Save your file as LYRIC.MUS. (Type SA LYRIC)



Input Shortcut

Another useful shortcut allows you to repeat any pattern any number of times. For instance, in the Rhythm Stage of this input, the third and fourth beats of measure three are exactly the same as beats one and two of measure four. Rather than retyping "Q./E/" two times, you can type `Q./E/X2 2/` "X2 2" means repeat the last 2 entries twice. In this example it doesn't save any typing, but if the entire line was four measures in this rhythm

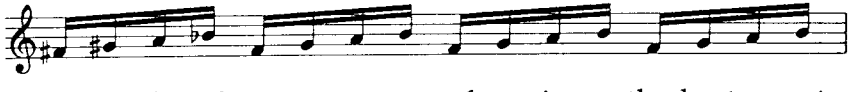


you could type:

"`Q./E/X2 8`" instead of
"`Q./E/Q./E/Q./E/Q./E/Q./E/Q./E/Q./E/Q./E;`"

Notice that you must include the first statement of the motive in the number of times you stipulate for its repetitions (you type "X2 8", not "X2 7").

When you use this shortcut for pitches, it has an additional feature. Say, for example, that you had to input the following sixteenth note figure:



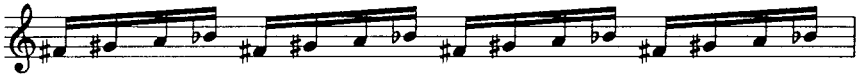
Since the first four notes repeat four times, the best way to input this is to type:

```
FS4/GS/A/BB/X4 4/M;
```

SCORE only includes accidentals in the first statement of the motive (which is correct). If you had created a letter macro for this figure, every statement would include accidentals (which is incorrect). Let's try it with a letter macro.

Type:

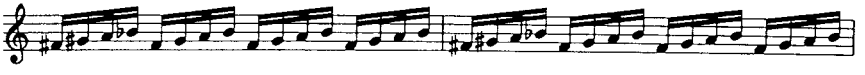
```
F[FS4/GS/A/BB]/@F/@F/@F/M;
```



You would then have to go into the edit mode to remove the unneeded accidentals when you were finished. Obviously, the "X" shortcut is a better choice in this situation.

Repeating Accidentals in Shortcuts

There is another way to force SCORE to restate accidentals: substitute "Z" for "X". Suppose you needed to input these two measures:



```
FS4/GS/A/BB/X4 4/M/FS4/GS/A/BB/X4 4/M;
```

would work, but involves a lot of typing. Instead, use the Z shortcut.

```
FS4/GS/A/BB/X4 4/M/Z17 2;
```

Z functions in the exact same manner as the X feature, except it repeats any accidentals. In this example, we used Z to repeat the previous *17* items twice. We specified 17 because we wanted to repeat the 16 notes and the barline.

Lyrics

To input lyrics, we need to enter the text mode. Press F4. Set the "staff=" to 3 (the staff you will be assigning lyrics to). In order to tell SCORE you are typing in Lyrics as opposed to ordinary text, you must set the horizontal position to "0". The Vertical position indicates how far below the music the lyrics will appear. Generally, "-4" is acceptable unless some of the notes dip very low. Set "Vertical=" to -4 and press F5 to select the font Times Roman. (This font will only print on Laser Printers or High Resolution devices like the Linotronic Typesetters. On a dot-matrix printer, SCORE's built-in text fonts are used. For more information on font selection and printing, see Code 16 in the Reference Manual.)

For SCORE to understand how you want your lyrics assigned to the notes in this staff, you must separate every word with a slash "/". If a word is set with different syllables for different notes, these syllables must also be divided with a slash. The text for this line would be input as:

```
Let/us/show/you/how/to/use/Score's/ly/ric/
in/put.
```

You should not type a semicolon at the end of this line of input (unless your text has a semicolon in it, of course).

> Note to European Users.
> In the lyric input mode, you cannot substitute a comma for the slash. Obviously, the comma is an actual character that may appear in the text. In this instance, you must type the slash character (/) (or press F10) between syllables to generate a slash.

But what about the hyphens in "lyric" and "input"? They are created by inserting two exclamation points "!!" between the syllables. When the text displays, the hyphens are centered automatically.

To create extension lines (the lines used when a word is tied or set melismatically), type two question marks "??". SCORE will automatically determine how long they should be. The correct input for this text line is:

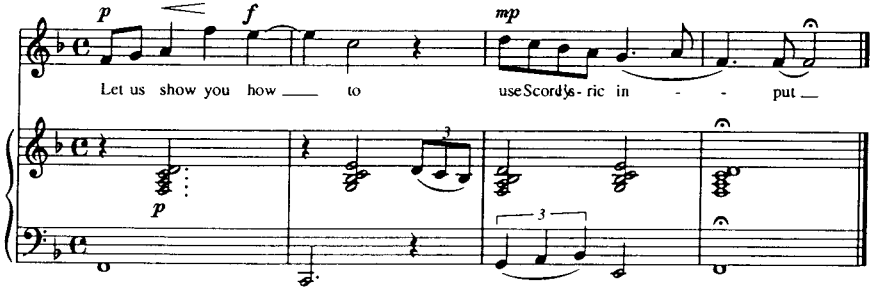
```
Let/us/show/you/how??to/use/Score's??ly!!
ric/in!!put??
```

Note, you may press F6 during lyric input instead of typing "??". This is sometimes more convenient than typing the characters themselves. Similarly, F7 will input "!!".

(Note that you do not need to include the slash between syllables or words when you input a hyphen or extension line.)

Press ENTER

The text does not appear in the music. SCORE temporarily displays numbers above every note in this staff, and asks you which note for "Let/". Type 1. SCORE goes on to the next syllable. Type 2 and so forth. When you reach the word "to," you will have to skip to note number 7 since "how" was tied. If there were no tied notes, or melismatic settings in this line, typing "99" at the first prompt will place all the text in the music, one syllable to each note.



It is now a good idea to save your work again using the SM command.

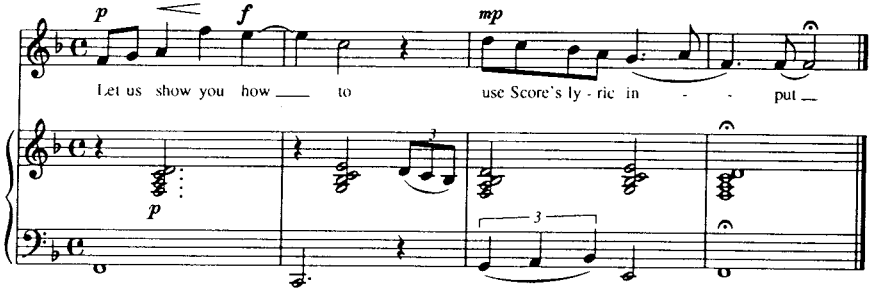
Justifying Music to the Lyrics

Although we performed a Lineup and Justify function on this file, that operation does not take into account any lyrics that accompany the music. Sometimes you have a long word or syllable attached to a short note value, and there is not adequate space for the text (the words "use Score's lyric" in measure three are an example of this). SCORE provides a method for dealing with these problems.

Type JT for Justify according to Text. SCORE asks you for the number of the bottom staff and how many are in the file (1 3, in this case).

Type: 1 3 ENTER.

SCORE asks for the left and right positions of the staff; Press ENTER to accept the default of the full staff. At this point SCORE gives you a chance to back out by typing "B" or you may press ENTER to continue. Press ENTER. Now SCORE needs to know which staff contains the text, and what its vertical position is (it actually asks for the text's P4 value, but don't let that confuse you, it's the same thing). Type: 3 -4 ENTER. SCORE will rejustify the file. The finished results should look like this:



It's a good idea to save your work again using the SM command.

How To Correct Text

SCORE provides an easy way to correct typos in the text. Suppose the word "Score's" in this lyric is really supposed to be the word "our". Using the mouse, click on the word SCORE. (If you don't have a mouse, type `ST3 16` and press ENTER until you reach the word "Score's".) The top two lines of the screen now display a lot of numbers, and below that is the text of the word. To edit the text, press F9. The text of the word now appears on the cursor line, and you can use the BACKSPACE key, the DELETE key, and the cursor keys to edit your text in the same fashion as you edit any text on the SCORE command line. If you press INSERT, the program allows you to insert characters in the line. Change the text to "our" and press ENTER twice. The lyric is changed, and now appears in the music.

What does the JT command actually do?

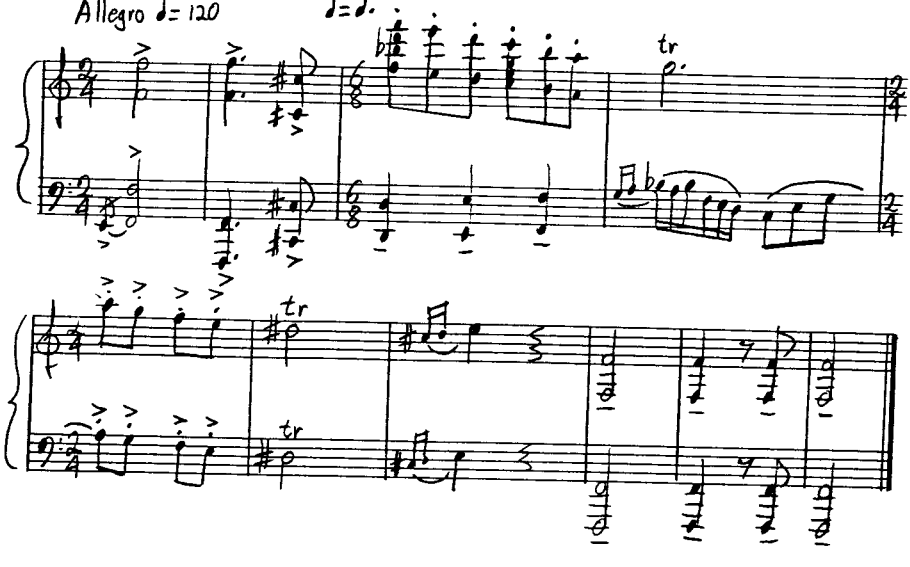
When you rejustify a system using the JT command, SCORE searches through the text on the staff you specified and makes sure that there is a minimum amount of space between words. If there isn't, SCORE will shift the notes to the left or right respectively to make room for any long words that need additional space. The program makes minute adjustments, and only adjusts where it is necessary. Sometimes you can avoid the need to use JT if you do some minor editing on the text, shifting some words slightly to the left to create additional space. SCORE has a special way to do this, which is explained in the Reference Manual chapter on Code 16 - TEXT.

Chapter 4
Octaves and Grace Notes

This chapter describes:

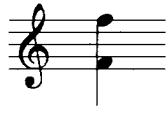
- How to input octaves
- How to input grace notes
- Slurs beyond the staff
- Saving Rhythms, Marks, and Beams in a Macro
- Saving Input in a Text File
- Using the Read Command
- Regenerating the Input Text
- How to copy a staff
- Using Group Edit Commands

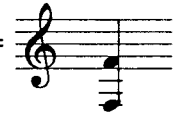
We'll begin with this 10-bar piano piece.



Inputting Octaves

Start SCORE and press F2 to enter the input mode. Press F5 to retrieve the preset piano staff. Press the space bar to continue. To enter grace notes in the Pitch Stage, just type in the pitch and octave number normally. To enter octaves, you can specify both pitches (eg. F3:F2) as in a chord, but SCORE has a built-in shortcut that saves typing. Type the pitch and octave number for the bottom note, then type a plus "+" to indicate that the note an octave higher should be added to it. Similarly, you may specify the pitch and octave number for the top note, then type a minus "-" to indicate the note an octave lower should be added on. It makes no difference whether you use the plus or the minus, and you can switch between them throughout a line of input.

F4+ = 

F4- = 

Changing Time Signatures

This example includes two time changes: one in the middle of the line and one at the end. These are input in the same way as the initial time signature at the beginning of a piece. Try inputting this staff.

The correct pitch input is:

```
2 4/E2/F+/M2/F-/CS+/M/6 8/D+/E+/F+/M/G3/A/BB
/A/B/F/E/D/C/E/G/M/2 4;
```

Do not worry if your input looks a little different than this, there are different ways to input this line. But notice that by judiciously mixing the plus and minus octave designators, we were able to specify all of the notes in measures 1-3 without respecifying which octave number the notes were in.

Inputting Grace Notes

In the Rhythm Stage, you designate which pitches are grace notes. Type G for the rhythmic value of any note that is a grace note. If you had a string of grace notes, you may type "GX5" or use "G/////".

This example has an accent at the stem side of a note in measure 1. As in the last chapter, type a minus sign before the code for accents "-A" followed by the note number.

Specifying Articulations for a group

Notes 5, 6, and 7 all have tenuto marks. You could type "T 5 6 7/", but SCORE has a shortcut for putting articulations on groups of notes. You specify a group of notes by typing the first note number, a colon, and the last note number (5:7). Do not include any spaces between the numbers.

Slurs or ties beyond the staff

SCORE allows you to differentiate between slurs and ties that extend beyond the staff. For a tie that extends from the last note off the staff, type a destination note number one higher than the last note. For a tie to the first note on the staff, type 0 as the origination note number. Slurs work in a similar manner, except that you use the special note number "99". For a slur off the end of the staff, type 99 as the destination note number. For a slur coming in from the front of the staff, use 99 as the source note number. Finish the input for this example.

Your input should look something like this:

```
2 4/E2/F+/M2/F-/CS+/M/6 8/D+/E+/F+/M/G3/A/BB
/A/B/F/E/D/C/E/G/M/2 4;

G/H/Q./E/QX3/G//SX6/EX3;

A 1 3 4/T 5:7/-A 2;
```

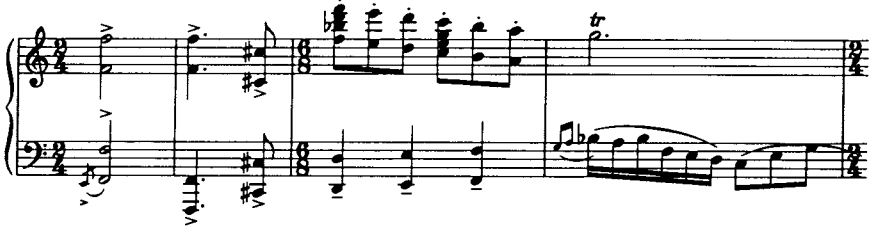
```
8 9/10 15/16 18;

1 2/8 -10/10 15/16 99;
```

Chords that include octaves

You may use SCORE's octave shorthand in conjunction with a chord while inputting. For example, in measure three of staff two you could type "F6:D:BB5:F" but SCORE also allows you to type "BB5:D6:F-". It's less typing, and in some situations it can save having to respecify the octave number. Continue with the example and input staff two.

The input for staff two is:

```
2 4/F4+//CS+/6 8/F6-:D:BB5/E6-/D-/C5+:E:G/B-
/A-/G/2 4;

H/Q./EX7/H.;

A 1:3/S 4:9/TR 10;

4 6/7 9;

;
```



Now perform the Lineup and Justify routine, and save your work by typing `SA EXAM4A`.

Using Musical Symbols in Text

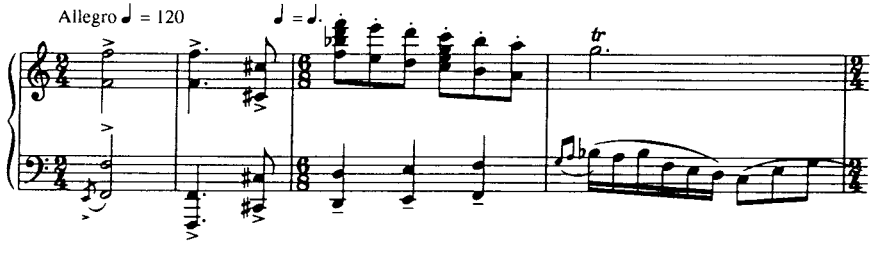
Let's add the tempo markings to this score. Press F4 and specify staff 2 for the text. To designate where you want the text to appear, click the left mouse button above staff two where the tempo indication should be. Press F5 to select

Times Roman. SCORE allows you to use a great many musical symbols in text strings. All of the accidentals, the notes, and a wide selection of diacritical marks and accents may be used. A selection of these symbols is included in this chart below, with a full description included in the Reference Manual chapter, Code 16 - Text

[=♩	]=𝅗𝅥	{=♪	}=𝅘𝅥𝅯	|=o	?1=♭	?2=♯	?3=♮	?d=. (for ♩.)

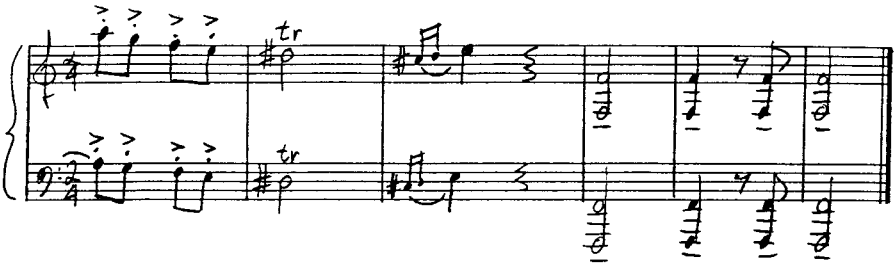
To use a quarter-note in this text string, type [SCORE automatically scales the musical symbols to fit with the font and point size you have selected.

Type the text string and press ENTER. (Unlike lyric input, you do not put a "/" between each word. If you typed Allegro /[/= /120, you would create *four* separate text items that would not be connected to each other. Instead, type `Allegro ([ = 120)` Notice that the display shows the quarter-note in its correct position. While you are still in Text Mode, click the mouse over measure 3. Press F5 and type `[ = [?d` ENTER. You type "?d" to create a dot for a notehead in text items (this raises the position of the period, which would be too low vertically for the notehead). Press ESC to exit Text Mode, and your text is entered. Use the SM command to save your work again, and type RS to restart the program. (Note: if you do not have a mouse, use the cursor key to set Horizontal = 10, Vertical = 18, for the first tempo indication and Horizontal = 60, Vertical = 18 for the second text item.



Some Advanced Macros

This example has six more measures, which we will now input.



You could just go ahead and create the input, but we would like to point out a few things about it. The rhythm, articulations, and beams are the same for both staves. The pitches are an octave apart for measures 1-3, then they change slightly. There are a few different ways to input this example, and we will demonstrate three of them.

Method One - Input Macros

Press F2 to enter the Input Mode. Press F5 to retrieve the Piano Staff Setup. Press the space bar, and input the pitches, barlines, rests, and time signatures.

A Rhythm Macro

Before we enter the rhythm, let's save the entire string as a macro.
Type `R[`
(for rhythm; you could use any letter) then enter the rhythms as normal. End the line with `];`

A Marks Macro

Let's do the same with the Marks Stage. Type `M[` (for Marks) and then enter all of the articulations for the line. Once again end the line with `];`

A Beams Macro

Use "B" to save your beam input in the same manner.

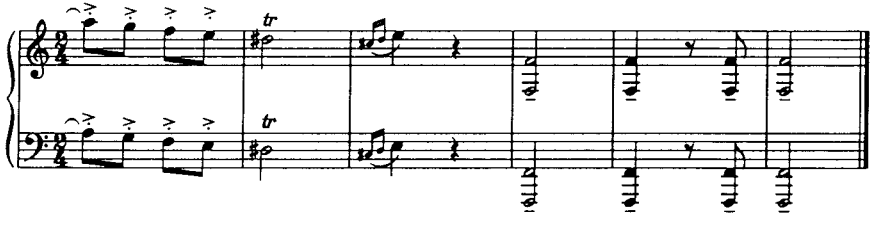
A Slurs Macro

Lastly, use "S" to save the slur input in a macro.

Saving Your Input in a Text File

Up until now, you have always typed "N" for no when SCORE asks you `Save this staff of input to a file?` We will now explain what this prompt means. Everything you type when you are inputting is either a letter, number or punctuation mark. SCORE allows you to save this text in a simple DOS text file (sometimes called an ASCII file) that can be reused in SCORE, or opened in a Word Processor (or text editor like DOS's Edlin) for editing. This time, type `Y` for yes. SCORE asks you for a name for the file. Type `STAFF1.TXT` and press ENTER. Remember that all you are saving is the actual characters you just typed. We'll explain below how you can use this Text File. Now continue with the input for staff two.

Enter the pitch information. For the Rhythm stage, type `@R;`. For Marks type `@M;`. For Beams type `@B;`. For Slurs type `@S;`. Save the input under the filename, STAFF2.TXT. In a matter of seconds you have input this second staff.



The correct input is:

Staff One

```
2 4/A3/G/F/E/M2/DS/M/CS/D/E/R/M/F2-/M/F-/
R/F-/M/F-/MH;

R[EX4/H/G//Q//H/Q/E//H];

M[AS 1:4/TR 5/T 9:12];

B[1 2/3 4/6 7];

S[99 1/6 8];
```

Staff Two

```
2 4/A5/G/F/E/DS/CS/D/E/R/F3+//R/F3+/;

255D

255D
```

There are some situations in larger works where these type of Macros can save an enormous amount of time inputting.

Method Two - Using the Read Command

Restart SCORE (Type RS ENTER) and press F2 to enter the Input Mode. Press F5 to retrieve the Piano Setup. You may have wondered what we were going to do with the Text Files we saved. SCORE has a special command that allows you to "read" input from a text file rather than tediously retyping it.

First, exit the Input Mode by pressing ESC. Type `RE` followed by the file name (STAFF1.TXT) and press ENTER. You will see the text quickly scroll by and the music will display on the screen. SCORE now asks you `Edit this staff of input (Y/N) ?`. Type `N` for no. (If you wanted to, you could make alterations in this input after reading it in.) As you may have discerned, this is essentially another SCORE shortcut to save you time inputting. Type `RE STAFF2.TXT` to input

the second staff. Type N and your example is complete. This is a handy way to save time inputting, especially if sections of a piece repeat.

Re-creating the Input Text

In normal usage of SCORE, people do not usually save their input in a text file (as described above) for every file they create. But what if you want to completely rebeam a staff after you have input it? Or completely change the slurring?

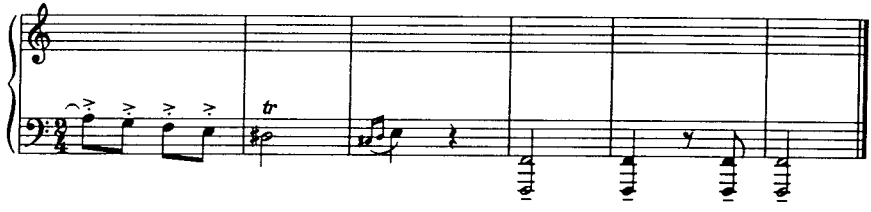
The EDI Command

SCORE has a special command, EDI (**ED**it **I**nput) just for this purpose. While this (or any other) file is displayed on the screen, type EDI ENTER. SCORE asks you for a staff number and some other information. For now, ignore the other information and type the number of one of the staves (it appears just to the left of the staff—the bottom staff is number one, the next is number two, and so on). SCORE quickly regenerates the correct input code for the staff and presents it for editing (just as if you were in Input Mode and pressed the ESC key to correct a typing error). Step through the input and make any changes you desire. Proceed to the end of the input. SCORE allows you to save this new text in a Text File. For now, type N (for no) and the line is recreated, reflecting any changes you may have made. This command is very helpful, especially since you can use it on partial sections of a staff. See the Reference Manual for further examples of how to use EDI.

Method Three - Copying a Staff

Another way to create this example is to input staff one then *copy* it onto staff two. Here's how you would do this.

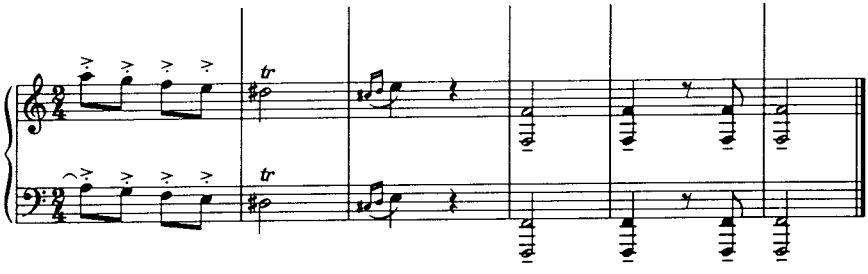
Restart SCORE and press F2 to enter the Input Mode. Press F5 to retrieve the piano setup, then exit by pressing ESC. Type `RE STAFF1.TXT` and type `N`.



Press F3 to enter the edit mode. Press F5 to go into the Group Edit Mode (where you perform editing functions on groups of objects, as opposed to a single object). Once again, at the top of the screen is an edit menu (containing the edit settings) and at the bottom of the screen is a Function Key Menu. We will use the mouse to select the area we want to copy. At the top left of the screen is an indicator "Base staff = 1". Since we want to copy Staff one onto Staff two, do not change this indicator. We must specify the left and right positions of the area we want to copy. Click the left mouse button in the horizontal area between the time signature and first note on the staff. Notice that the "Left Position = " indicator now has a number in it (probably 8 or 9). Now click the right mouse button somewhere between the last note and the last barline. The "Right Position = " indicator should now display a number (somewhere around 190). Press F2 to initiate the copy function. If you do not have a mouse, set the left position to 8 and the right to 195.

SCORE now needs to know where you want the copy placed. A prompt appears `Enter new Staff #, Left pos., Right pos., [steps up-down].`
Type `2 0 0 2`
The first number indicates the staff you are copying to, the second and third indicate the left and right positions for the copy (zero will keep the same positions as before) and the

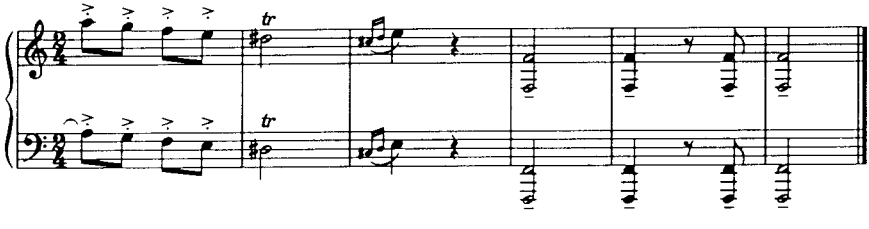
last number indicates if you want to move the items you are copying up or down. SCORE does not recognize that you are copying a staff from Bass Clef to Treble, and unless you specify otherwise, the Pitches will appear on the exact same lines and spaces they were on in the original staff. To correct this, SCORE lets you move all of the items up or down any number of staff spaces when you copy items. Your music is now copied.



Group Deletions

There is one problem with this group copy you made. SCORE copied the barlines from staff one to staff two. There is an easy way to fix this. Change the "Code" indicator to 14 (SCORE's code number for barlines). Cursor over to "Base staff =" and change it to staff 2. Press F4 to execute the Group Deletion of the barlines. SCORE doublechecks that you really want to do this; press ENTER to confirm the deletion. Now press ESC twice to exit the edit mode, and you are done.

There are still things to be fixed in this example. The rests in staff two were also moved up two spaces and need adjusting. Go ahead and do some editing before you proceed to the next chapter, then save this as EXAM4B.MUS.



Chapter Five
The Page Program

This chapter explains:
- File Nomenclature
- How to use SCORE's Page Program to layout your music
- The SCORE Executive

Up until now we have been working on short musical examples. Most of the time you use SCORE, you will be working on complete compositions which may be hundreds of measures long. How do you create a piece like this in SCORE?

File Nomenclature

Before we explain how to create large works in SCORE, we need to discuss file nomenclature and organization. You may have noticed that we frequently suggest that you name files in a specific way. This is not fussiness on our part; there are compelling reasons for being meticulous about how you name files.

SCORE limits you to 32 staves per file. Generally you will not want to put that many staves in a file because the file may be too big to comfortably open and work with. It's usually a good idea to put each *system* (see the chapter on orchestral scores for information on file methods for larger scores) in a file and to give the file a short name (up to 6 let-

ters) followed by "AA" and then the extension (usually ".MUS"). This type of naming convention allows you to name files *sequentially.*

Say your piece is called DREAM. File one could be "DREAMAA.MUS".
File two would then be
"DREAMAB.MUS" and so on. Not only does this allow you to skip back and forth using SCORE's "NX" and "NB" commands, but it gives SCORE and its ancillary programs (PAGE, JUST, SPRINT) easy access to these files without typing every file name for a given piece. As we progress, we'll demonstrate more ways to utilize this type of file nomenclature.

The Page Layout Program (PAGE)

In Chapter Four we created a ten-bar example of piano music spread over two systems. Suppose that this is the entire piece, and you want to make it fill out a page. The PAGE program is the place to do this type of layout.

From the DOS prompt, start PAGE by typing: `PAGE` ENTER. You are presented with three options:

`1) Page Layout`

`2) Parts`[This is where you extract instrumental parts from a score]

`3) Old Page Data` [We'll demonstrate this below]

Select option one by typing `1` ENTER.

`1 = read file names alphabetically, 2 = use namelist file`

PAGE needs to know what files you want to layout. You can either specify *every* file name (imagine if you had a very long piece) or you can have it read file names sequentially

(in alphabetical order). Select this option by typing 1 ENTER. You need to type in the first file name (EXAM4A.MUS) followed by a space and the total number of files you want to layout (2 in this case). Type EXAM4A.MUS 2 ENTER. PAGE reads the files into memory, then presents a menu of options for you to choose from.

```
A = Amer. or Euro. multi-bar rests? (Current= A)
B = Add measure (bar) numbers. (Current = no)
H = Set page height. (Current = 10.00 inches.)
I = Indent (Current = 0 0)
M = Get this menu again.
N = Set first page number. (Current number = 1)
P = Use only part of input data. (Current = no)
Q = Return to Page startup.
R = Number on 1-bar rest? (Yes)
S = Change staff size. (current size = .8)
T = Transpose (Current = no)
X = Exit from PAGE.
<enter> = Continue - see page layout
description.

->_
```

This menu provides a list of things you may specify before PAGE calculates the new layout. The current settings are displayed in parentheses at the end of each line. All of these options are explained in the reference manual section on PAGE. For now, accept the default settings and press ENTER to continue. PAGE reads through the files and, based on the content of the music and the settings in the menu, determines the ideal layout for the piece. PAGE displays a simple line drawing which gives a graphic representation of the layout created. Although you cannot see the music, you do see the number of measures in a system, how big they are, the number of systems per page, and the bar numbers.

```
->
Total bar lines= 10
Number of bars per line
Line lengths: Average=182  Minimum=171  Maximum=193

Bar 1  |---31---|--28--|---------61---------|---------73---------|193

Bar 5  |---41---|--24--|---33---|--21--|--30--|--22--|        171
  2 Lines    10 Bars
Hit <enter> to continue.
```

Notice the display at the bottom:

2 Lines 10 Bars

Hit <ENTER> to continue.

This information is the layout that PAGE created (2 lines on a single page, 10 bars total) Remember that each *line* is a *system* and contains two staves.

Press ENTER. Another menu of options appears:

Choose from the following layout options.

Y = Yes, this layout is accepted.

A = n1 = number of pages, n2 = lines per page

B = n1, n2, n3, ... = number of lines on each page

D = Give number of bars per line (zeros = ends of pages)

S = See same layout again.

U = Find page turns.

M = Return to main menu.

X = Exit from PAGE.

These options allow you to change the layout that PAGE just created or accept what it created on its first try.

Since our piece is short, we can spread out the music to fill an entire page by changing it to three lines of music.

Type A to select the first option. PAGE asks:
`Type 2 numbers ->` . Type: `1 3` ENTER to indicate **1** page, **3** lines (or systems).

Page recalculates the layout and displays:

```
3 Lines 10 Bars

Hit <enter> to continue.
```

The number of bars did not change, since we are simply changing the layout for this piece of music. The number of lines (systems) *did* change to 3, since we requested a different number.

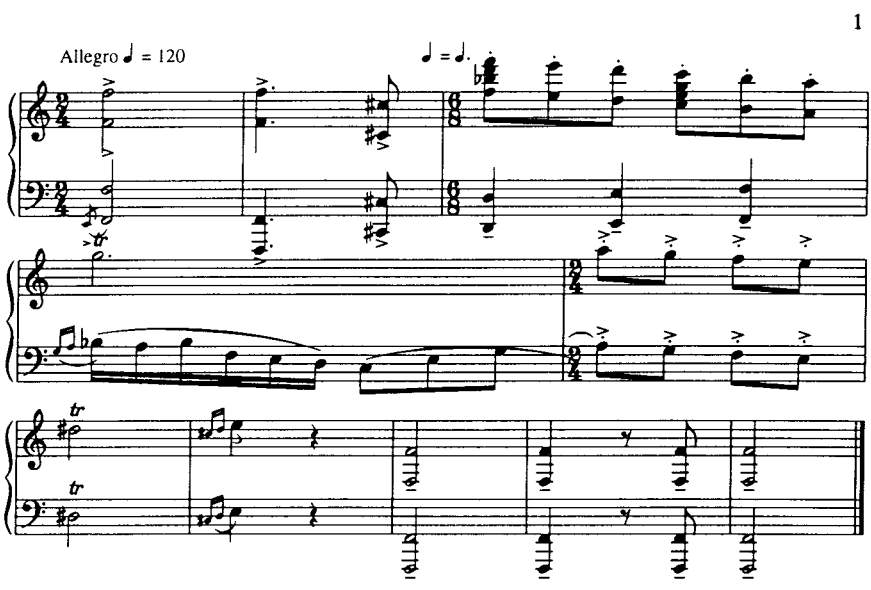
Press ENTER to continue. Once again a menu of options appears, and you can go through the same process to change the layout. Since the layout is now acceptable, type Y to accept it. (PAGE doesn't automatically write over the old files as a precaution in case something is wrong with the layout.) You now must supply a name for these new files. Type EXAM4 and do not specify an extension. PAGE will automatically add ".PAG" to the files and you will be able to differentiate them from the originals easily, as they have the extension ".MUS". PAGE writes one file to disk:
EXAM4.PAG

PAGE prompts:

```
More page layout? y/n
```

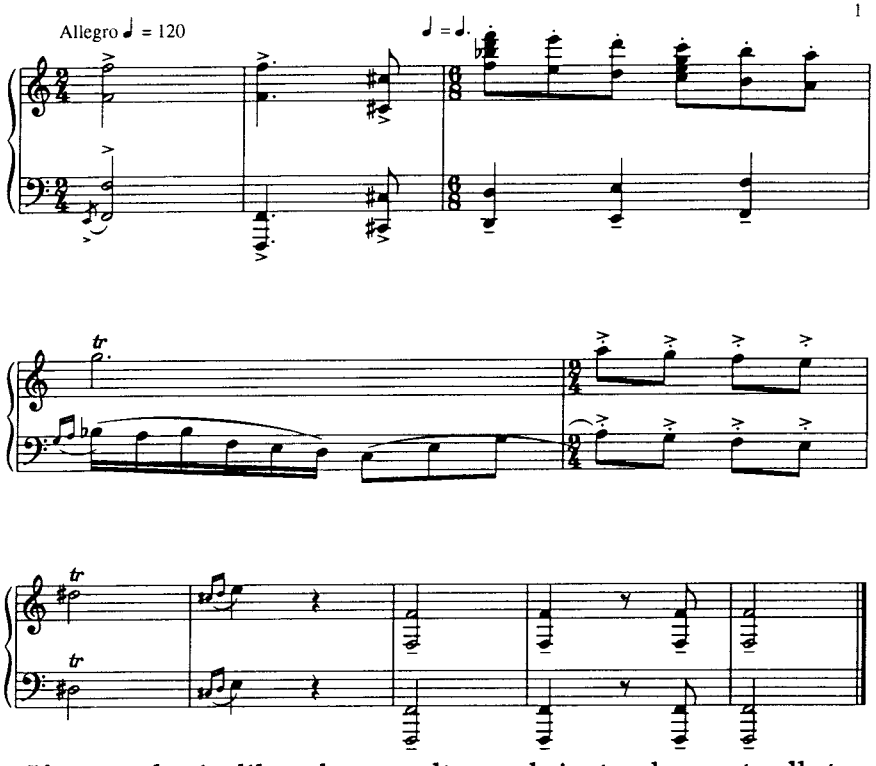
Type N to end this session, and return to SCORE to see the results of PAGE's layout.

Start SCORE and type G EXAM4.PAG ENTER to get the file. Press HOME to quickly move to the top of the page. Or press ALT + S to see the full page view. Press ENTER to return to the main screen.



Use the VJ command to adjust the space between the staves. Type VJ ENTER. Press ENTER two more times to accept the default settings. VJ justifies the staves vertically to eliminate any symbol overlap and reduce excess space between the staves.

Now use the H command to adjust the vertical height of the page. Type H ENTER. The total height is displayed. Change the height to 7.5". Indicate the number of staves per system (2 in this case) to add space between the systems.



If you don't like the results and instead want all ten measures on a single system. PAGE provides an easy way to recalculate a new layout. Exit SCORE (press F8).

Start PAGE again by typing `PAGE` ENTER. This time select option 3 `Old Page Data.`

> After you run a set of files through the PAGE program once, PAGE saves the layout information in a temporary file called BARS.TMP. This eliminates the need to tell PAGE which files to layout and lets you get right back to work. If you looked on your hard disk, you would see this file in the current directory you are working in.

BARS.TMP is truly a temporary file in the sense that once you run another piece through PAGE and select options 1 or 2, a *new* BARS.TMP file will be created and the old one will be overwritten.

If you plan to run a series of pieces through PAGE, and want to save the BARS.TMP file for the possibility of future layout, use the DOS REN command to change the file name. Later, if you want to put your piece through PAGE again, you would use the DOS REN command again to change this file name back to BARS.TMP, and then start PAGE.

PAGE displays the menu:

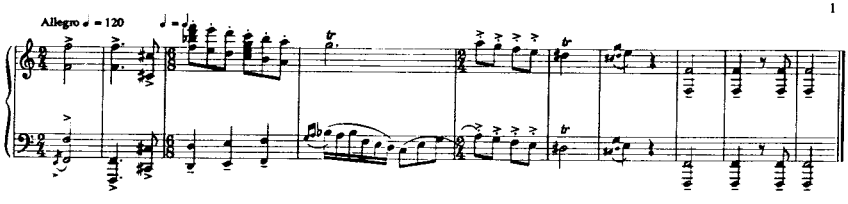
```
A = Amer. or Euro. Multi-bar rests? (Current = A)
B = Add measure (bar) numbers. (Current = no)
H = Set page height. (Current = 10.00 inches.)
I = Indent (Current = 0 0 )
M = Get this menu again.
N = Set first page number. (Current number = 1)
P = Use only part of input data.
Q = Return to Page startup.
R = Number on 1-bar rest? (Yes)
S = Change staff size. (current size = 1)
T = Transpose
X = Exit from PAGE.

<enter> = Continue - see PAGE layout description.

->_
```

Since we now want to squeeze the music onto a single system, we will change to a smaller staff size. Type S ENTER

```
Give new staff size
```

Type .6 ENTER

Press ENTER to continue and see the layout. With a smaller staff size, PAGE easily fits 10 measures onto a single system. Often a change to a smaller staff size will allow PAGE to fit more music on a line, and fit the music onto less pages. First type ENTER, then Y to accept the layout, and save this under a new name (perhaps !EXAM4.PAG). Exit PAGE and return to SCORE to examine the file. It's always a good idea to go back into SCORE to examine the results of PAGE, and to do some touch-up editing.



When to Use PAGE

PAGE is excellent for the delicate job of page layout, but there are times when you cannot or should not use it. For example, suppose you were doing a vocal score that included a piano part on two staves and different numbers of vocal parts on staves above it. Sometimes you might have a solo voice, sometimes a chorus and many different soloists.

PAGE can only process files that contain the *same number of staves*. If you had three staves in the first file (one soloist and piano) and then seven staves in the next (the chorus joined in with the soloist) PAGE would not understand how to shuffle measures around. You might be able to process the files in sections, if there were continuous sections where the files all contained the same number of staves. We'll explain more about the uses of PAGE in later chapters.

When you open up this example in SCORE, you may notice that the slurs (and hairpins) got moved around a lot and need editing. SCORE has a powerful Group Command to edit *all* the slurs on an entire page. After you open the file in SCORE, type CRV (for CuRVe). SCORE asks which staff and position you wish to alter. Since we want to fix all of the slurs, type 99 ENTER (remember, if you provide a number greater than the number of staves possible [32], SCORE's commands affect *every* staff). SCORE readjusts each slur and tie to the "ideal" curvature based on its present length. (SCORE did this procedure during input, but new page layouts can alter the length of some slurs and ties, requiring you to repeat it sometimes.) In the next chapter we'll explain how to do more sophisticated types of editing using SCORE's *Parameter Structure.*

The SCORE Executive

With all that switching between SCORE and PAGE, you might think there is an easier way to move between the various programs that comprise SCORE. In fact, there is a menu system called the SCORE Executive. It's quite simple to use.

Instead of typing SCORE to start your work session, type EXEC ENTER. A menu appears with all of the programs (including ESCORT and SCOREINPUT), as well as a custom option to run your sequencer program. Press the appropriate F-key to select the program you wish to run.

Note: The SCORE Executive remains resident while you run the other programs. This means that once you start it, it will use some RAM until you exit from the SCORE Executive. If you have a limited amount of conventional memory, you may achieve better results by not running the SCORE

Executive. In addition, you should be careful to avoid conflicts with any other TSR's you may have loaded in your system. See the installation section for further information.

Chapter Six
Sophisticated Editing

This chapter will explain the nuts and bolts of SCORE's structure, which is divided into two areas:

1) The Code Structure

2) The Parameter Structure

Don't be frightened; you won't need a degree in physics to understand this chapter. In fact, it's quite simple. Once you understand the material in this chapter, you will have learned the key to using SCORE in a quick and efficient manner.

The Code Structure

SCORE assigns a unique code number to every general group of musical items. Notes are code 1 items, rests are code 2 items, and so on. In Chapter 4 we performed a Group Edit on a staff, and deleted all of the barlines. We did this by using the Code Structure. We told SCORE we wanted to delete all of the *Code 14* items (barlines) on staff 2, and thus were able to leave everything else untouched. As you proceed through this manual, we will demonstrate some of the many powerful ways that the Code Structure may be used.

The Code Structure

Code 1.....Notes
Code 2.....Rests
Code 3.....Clefs

Code 4.....Lines (Hairpins, dashes, etc.)
Code 5.....Slurs (Tuplet brackets, Endings)
Code 6.....Beams
Code 7.....Trills, 8vas, 8bas, Pedal signs
Code 8.....Staves
Code 9.....Symbol Library (Every symbol in SCORE)
Code 10.....Numbers
Code 11.....User Symbol Library
Code 12.....Rectangles, Circles, Guitar Tablature
Code 14.....Barlines
Code 15.....Special Code (to import Postscript Files)
Code 16.....Text
Code 17.....Key Signatures
Code 18.....Time Signatures

Items

SCORE defines every musical symbol in your piece as an *item* and gives it a unique *Item Number*. You may have noticed the Status Line at the top of the Main SCORE Window has an indicator "Items = ". If you input a staff with ten notes and one barline, you will have a file with 12 items in it, and this indicator will read `Items = 12`. In general, this is all you need to know about items in SCORE.

The Parameter Structure

Start SCORE and get the file EXAM4.PAG. With the mouse, click on the first note on staff four (or type ST4 1, if you don't have a mouse). SCORE goes into the Edit Mode, and the Status Line changes to a list of numbers. These numbers are the *Parameters* associated with this individual item.

Every SCORE file is made up of items. Different item types (code numbers) are like different types of clothing. We can easily describe the physical characteristics of our clothing (i.e., a long-sleeve, blue, button-down collar shirt, or a short-sleeve, turtleneck, etc.) just as parameters describe (in

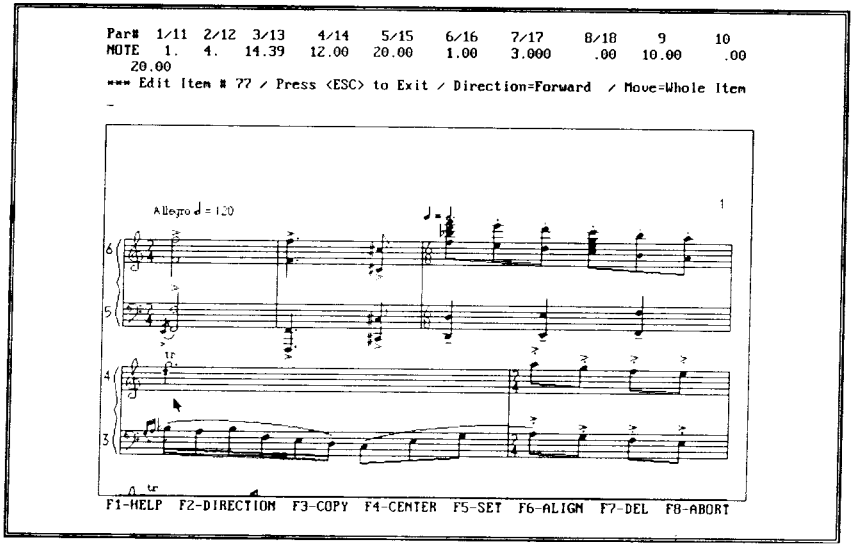
numbers) the attributes of the items. Depending on how these parameter numbers are set, a particular item (like a note) may have many different characteristics (it may have a stem up or down, an accidental, a number of flags, a number of augmentation dots, an articulation, etc.) And by changing these numbers, you alter these characteristics.

Using the middle mouse button, click on a rest (if you have a two-button mouse, hold down CTRL and click either button). If you don't have a mouse, type X to exit the Edit Mode and type ST2 2. The rest's parameters are different from the note we just looked at. What do all these numbers mean?

Every Code Group in SCORE has a set of *different* parameters associated with it. The first four parameters are the same for *every* Code Group, so we will explain those first.

Parameter 1 = Code Number
Parameter 2 = Staff Number
Parameter 3 = Horizontal Position
Parameter 4 = Vertical Position

Click on the "G" in the first measure of staff four. The screen looks like this:



The parameters for this item are detailed at the top of the screen. Reading from the left, on the top line you will see:

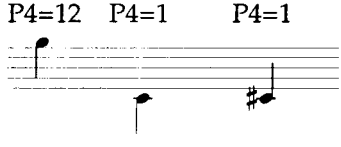
```
Par# 1/11 2/12 3/13 4/14 5/15 6/16 7/17 8/18 9 10
```

This means parameters 1-10 are displayed on the second line, and since there isn't room for parameters 11-18, they will be displayed on the third line, directly below. (SCORE allows for a maximum of 18 parameters for each Code Group. Some Code Groups do not use all 18 [Clefs, for example, only have 7 parameters]). Code 1 items (notes) have 15 parameters associated with them. In this case, parameters 12-15 have nothing indicated. This means that they are at their default setting. When a parameter is not used (parameters 16-18 in this example), it, too, will have nothing indicated.

The second line reads:

```
NOTE 1. 4. 14.39 12.00 20.00 1.00 3.000 .00 10.00 .0
     20.00
```

The word "NOTE" is there to define what Code Group you are working with. The next number is parameter 1 (notice it is below the 1 on the line above). It reads one in this instance because this is a Code 1 item, a note. The second number indicates parameter 2, the staff that this item is associated with (staff 4). The third number, 14.39, is parameter 3, the horizontal position. SCORE's spacing units will be explained below. Parameter 4 indicates vertical position. In the case of Notes (and rests) this indicates which line or space of the staff the item sits on *regardless of clef*. P4 (our abbreviation for parameter 4) is 12 in this instance.



This means the note is on the first space above the staff. If P4 = 1, the note would be on the first ledger line below the staff (middle C in Treble Clef). Let's try changing it.

To change a parameter you must be in Edit Mode (the easiest way to do this is to click on an item with the mouse). Type the number of the parameter you want to change, a space, and the new value you want to enter. Try it. Type: `4 1`. The note changes to middle C. Now the stem is in the wrong direction. P5 controls that aspect of this Code Item. 20 is stem down, 10 is stem up. Type `5 10`. Suppose you want to make this note C# instead of C. Many of SCORE's parameters control more than one aspect of an item. In this case, different values in P5 control accidentals, stem direction, and the distance of the accidental from the notehead. Change P5 to 12. The "2" adds a sharp to the note.

Because SCORE allows parameters many different functions, the program has to use a special system to accomplish this. For P5 in notes, you may enter a two digit number "XY." Digit "X" indicates stem direction: 1 = stem up, 2 = stem down. Digit "Y" indicates the accidental according to the following system:

0 = no accidental
1 = flat
2 = sharp
3 = natural
4 = double flat
5 = double sharp

Change P5 to 14. The note is now stem up, with a double flat. Try changing this parameter to get a feel for how this works. The reference manual will explain what each parameter means for each Code Group in SCORE. But we'd like to point out a few things on the screen.

The third text line reads:

```
20.
```

This is the value in P11. Since there is only room for ten parameters on the first line, SCORE lists parameters 11-18 directly below. That is why some of the numbers at the top of the screen have a slash (1/11). This means that in this column you will find P1 directly below on the second line, and P11, if it has a value, below that on the third line.

The fourth line is:

```
Edit Item #77/ Press <Esc> to Exit/ Direction =
Forward/ Move = Whole Item
```

From the left this means:

- You are editing Item #77 (remember that SCORE numbers every item in a file)
- You may press ESC to exit the Edit Mode.
- If you press ENTER you will go *forward* to Item #78. Press F2 and you can change this to go *backward*, to Item #76.
- If you move the Item, you will move the whole Item (Items with horizontal distance, like Slurs, Beams, and Hairpins, may be isolated to move one side or the other).

  Press ENTER a few times and watch how you step through various items on the staff. Each time you press ENTER you skip to the next Item.

  Go back to Item #77, the note we have been editing. Press the Up arrow key twice. P4 changes to 3. Press the Down Arrow twice and P4 changes back to 1. Drag the note up with the left mouse button and watch P4 change. You can use different methods to alter Items in SCORE *but they always accomplish these alterations by changing the parameters for*

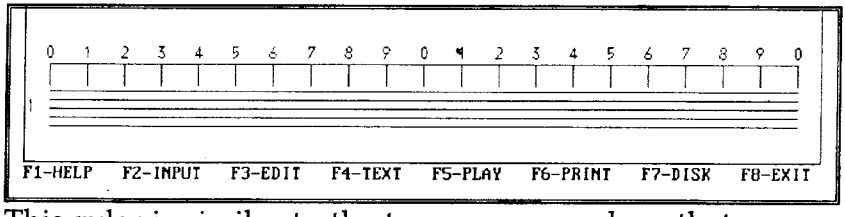
the item. It doesn't matter whether you use the mouse, the cursor keys, or type in new parameter numbers, the results are always the same.

SCORE's Horizontal Spacing System

When we edited Item #77, you may have noticed P3 was set to 14.39. We said that P3 indicates horizontal position, but what does 14.39 mean?

SCORE divides the staff into 200 horizontal units. The leftmost position of the staff is 0, and the extreme right is 200. The exact center, therefore is at position 100. If you change the size of the staff, this horizontal unit remains constant. Therefore, this note is 14.39 units to the right of position 0. If you make the staff smaller, this note will remain in the exact same postion at 14.39.

SCORE will display a simple ruler to help make this clear. Type SC followed by the staff number that you want the scale to appear over (try SC1 ENTER).



This ruler is similar to the temporary numbers that appear in the Input Mode. To avoid cluttering the screen, only single-digit numbers are used. (Therefore, 0-9 represents 0-90 and 0-0 represents 100-200.) If you want to get rid of the spacing scale, type SCX ENTER. The ruler will not print out with your music.

If you were to print out this staff at actual size (Size = 1. in the print routine), the staff will be 7½ inches wide (the default of 0 to 200). There are 26.666 Spacing Units per inch. You can alter the staff length to make narrower or wider scores, but in practice it is rare that you will need to do this. We will demonstrate other ways to create longer and shorter staves for wider and narrower scores respectively.

Using the Parameter Structure—The Group Edit Mode

Press ESC to exit the Item Edit Mode. Press F3, F5, to enter *Group Edit Mode*. SCORE displays a menu at the top of the screen. All of the Group Edit functions require you to specify:

- `Base staff` (this can indicate a single staff, the beginning of a continuous group of staves, or every staff in the file. *To alter every staff, you can type in a number greater than the total number of staves possible in a SCORE file, i.e. 33 or higher*)

- `Left Pos.`, `Right Pos.`, (Notice the default is 0, 200; the entire staff)

- `Code` (You may specify a Code Group or leave this at 0 and all items will be affected)

- `Top Staff` (Used to specify the top staff of a group: if you leave this at 0, only the staff number in "Base staff" will be affected)

The following numbers are currently displayed.

Base Staff	Left Pos.	Right Pos.	Code	Top Staff
1	0	200	0	0

The cursor should be on the "1." Change it to 99 (to alter all of the staves). Use the arrow keys to move to the Code set-

ting and type 1. This means we will only affect Code 1 items (notes) on all staves from position 0 to 200 (the entire staff). Press F3 to Alter. The prompt now asks you which parameters you would like to change. SCORE does not require you to change one at a time; frequently you will change a few parameters in one edit.

Let's remove all of the articulations from this file. Articulations are stored in P11. If a note has a value in P11, it has some type of articulation. If we change P11 to zero, that articulation will be removed. Type 11 ENTER. The edit is complete, and all articulations are removed. Why didn't we type 11 0?

If you typed 11 0 you would have gotten the same result, but it's two more keystrokes. Since there are many situations when you wish to change a parameter to 0, SCORE provides this shortcut. Type any parameter number and ENTER, and its value becomes 0. This works in all of the different editing modes and is one of the many ways you can make good use of the parameter structure.

Adding a Value to a Parameter

There are many instances in editing when you want to *add* a value to the existing parameter, rather than changing it. Suppose you wanted to move every note on staff two to the right 5 spaces. Since P3 controls the horizontal position, we can accomplish this task easily.

On the edit menu at the top of the screen, select Staff 2, Left position 0, Right position 200, 1 for Code No. (1 indicates notes).

Press F3 to alter these items. SCORE prompts for the parameter no.(s) and its change(s). You could type 3 5 ENTER, but that would change the horizontal position of every note to position 5, and they would all be on top of each other!

Since every note has a *different* P3 value, we cannot change P3 to a finite value. Instead, we must *add* 5 to each P3 value on the staff. To do this, type 300 5 ENTER. This *adds* 5 to P3 of every note on the staff. Placing two zeros after the parameter number (e.g. 300, 600, etc.) allows you to increase or decrease its current value by a specified amount.

Editing by Code Item Type

Suppose you wanted to change accent-staccatos to accents on some notes on staff four. We'll demonstrate a way to edit every note and selectively make your alterations.

Restart SCORE and retrieve the original, unaltered version of this file (EXAM4.PAG). The fastest way to do this is to type: RS EXAM4.PAG ENTER

SCORE warns you that you will lose the changes to the file on screen, and allows you to abort the process. In this case we want to lose the changes, so type Y to continue. Now press F3 to select the edit menu and then press it again to edit by staff. This prompt appears:

```
Enter staff number, code number (optional), or
click mouse on staff
```

SCORE allows you to step through every item on a staff or every item belonging to a *specific Code Group*. Type 4 1 to step through staff 4's code 1 items. An arrow appears by the first note on the staff, and its parameters are displayed at the top of the screen. Press ENTER to continue to the next note. Let's change this to an accent. For an accent, P11 must equal 5. Type 11 5 ENTER. The change is made. Notice that you will not see the alteration clearly until you press ENTER. Press ENTER to continue to the next note. Let's remove it's accent-staccato. Type 11 ENTER. The mark is removed. Press ENTER again to move to the next note. Let's skip it by pressing ENTER. (If you accidentally go past a note that you want

to alter, press F2 to change direction and go back to it. Pressing F2 again will change the direction to forward again.) Change P11 to 5 on the last note, and press ENTER to finish.

You may recall that we suggest typing ST and some numbers when editing without a mouse. This is a SCORE command that allows you edit specific code item(s) on a specific staff. For example, typing ST 4 1 at SCORE's command prompt will allow you to edit all of staff 4's code 1 items. Note that these numbers are identical to the numbers we used above, and accomplish the exact same function. If you use 99 for the staff number, you may edit a specific code item on every staff.

You have just learned SCORE's most powerful features for editing music. By judicious use of the code numbers and the parameter structure, you can perform very powerful edits that get a lot of work done in a short time. Because it takes some time to learn all the different parameter and code numbers, we have created a handy chart which you may keep by your computer for reference. This chart lists every parameter for every code item along with a brief description of what it controls.

Onscreen Help

Remember that help is always available by pressing F1. When an item is selected for editing, pressing F1 displays a parameter summary for that item and further screens detail how the parameters function. If you are in input mode, pressing F1 displays a screen with the specific commands for whichever stage of input you are in. You may also type a question mark and any letter (e.g., ?M) at SCORE's command prompt to display help pertaining to that letter's commands. Typing a question mark and a code number

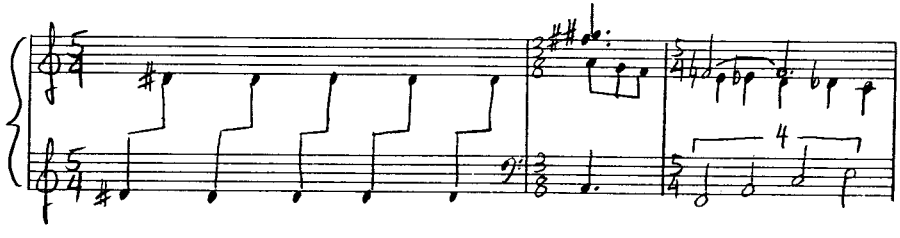
(e.g., ?2) will display the help screens for that code number. In the next chapter, we'll show you how to put the Parameter Structure to work in some other ways.

Chapter Seven
Inputting Complex Piano Music

Piano music can be the most demanding type of music to engrave—by hand or with a computer. Even if you are not planning on engraving complex piano music, we recommend you create the examples in this chapter, because they illustrate some important SCORE concepts and techniques, such as:

- How to beam notes between staves
- How to input two voices on a single staff
- How to input complex polyrhythms (irrational rhythms)
- How to use the Adjust and Stem commands (to fix stem lengths)

The example we will use is a three measure piano piece.



Start SCORE and press F2 to start the input mode. This time, we will demonstrate input without using a preset staff setup. Use the cursor key to move to the "Size =" setting, and change the size to .8. Press the space bar and the staff will appear.

Cross-stave Beaming

Begin the input. The first item will be a barline (M2), then the clef and time signature. Type `DS4` for the first note. In order for SCORE to beam notes between staves, all the notes must be attached to *one* staff (their P2 value must be the same, since P2 represents what staff they belong to) even though some of those notes will *appear* to be on a different staff. SCORE has a special input method to automatically position notes on the staff above or below.

Type `S+/`
This tells SCORE that the next note or notes that you enter will be on the staff one higher than the current staff.

Type `DS/` Since this new note is in the same octave as the first note, you do not need to specify the octave number. To return to the original staff, type `S0/` (zero, not o). This tells SCORE that the next note will be on the original staff. Continue with the pitch input as normal. If you like, you can set up a macro to automate this process. Using a macro, the pitch input would read:

```
M2/TR/5 4/DS4/S+/DS/S0/D[D/S+/D/S0]/@D/@D/
@D/BA/M/3 8/A2/M/5 4/F/A/C3/E/M;
```

Polyrhythms

In the Rhythm Stage, assign the note values as you have done in the past. When you reach the last 4 notes, you will not be able to type in a rhythmic value, because they are irrational rhythms (notes with an imperfect rhythmic value, like triplets or quintuplets). We demonstrated how to input triplets, but that method will not work here. Instead SCORE allows you to define any note value as "X in the time of Y" where X is the number of notes (4 in this case) and Y is the number of *quarter notes* that X will occupy (in this case, 5).

Type: `4:5` and since there are four occurrences of this, type `4:5x4`. End the line with a semicolon as usual, and proceed to the Beams Stage.

The cross-stave notes can be beamed as usual by typing the note numbers ("1 2/3 4/5 6/7 8/9 10") or you may use the automatic beaming by pressing F2 or F10.

In the Slurs Stage, you may input the bracket for the last four notes. In this case you would add `400` to one of the note numbers to create a bracket with a 4 in it. Type: `412 15;` ENTER. (If you want a bracket with a different number, you would substitute that number for the `4` instead—see the reference chapter on Tuplets.) Do not save this staff of input to a file.

Before we input staff 2, use the cursor key to change "Spacing = " to 1. (We want everything on staff 2 to align with everything on staff 1.) Press the space bar to continue.

Invisible Rests

Your input would begin, as usual, with `TR/5 4/` for the clef and time signature. But the next measure already contains the pitches that are necessary. SCORE accounts for this type of situation by the use of an *Invisible Rest*. Essentially, an Invisible Rest is a place holder. As you may recall, SCORE insists on every staff having the same number of beats in order for the Lineup and Justify routine to function correctly. You could input this staff without the first measure, but there would be five beats missing, and the file would not justify correctly. This is why we use invisible rests.
Type `RI/` (**R**est **I**nvisible).

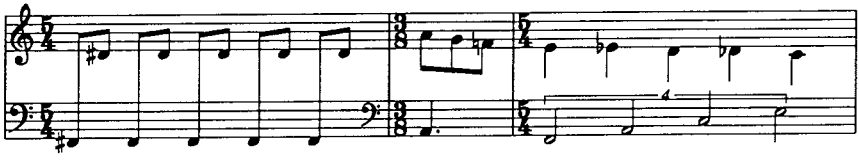
Multi-voice Input on a single staff

SCORE does not let you input more than one voice at a time. You can, however, go back and input new music on

top of pre-existing music on a staff as many times as you desire. In this fashion, you can create many voices on a staff. We'll begin by inputting the lower voice.

First, you must force all the stems down (SCORE would normally stem these notes up). Your input, so far is: `TR/5 4/RI/3 8/` Add the command `SD/` (Stems Down). Now continue with the pitch input. ("SU" would force the stems up; "SO" [the letter O, not zero, for Stems Ordinary] would revert to SCORE automatically deciding stem direction.) Finish the pitch input.

When you reach the Rhythm Stage, you have a problem. The invisible rest you input occupies the space of an entire measure of 5/4, and there is no *single* note value equal to five quarter notes. SCORE provides an easy solution. Type `W` for whole (4 quarters). Do not type a slash, but instead type a space, and then `Q` for quarter. Now type the slash. SCORE allows you to create composite rhythms for special situations like this. The correct input is: `W Q/` If you had to input a whole rest in a 5/4 measure, you would use the same technique. Finish this staff of input. When the program asks you to save the staff of input in a file, type `N` for no. SCORE automatically advances to allow you to input staff three. Now we'll get fancy.



Inputting a Second Voice to a Pre-existing Staff

Change the "Staff = " indicator to "2". Use the cursor keys to advance to "Spacing = " and change this to "2". It's necessary to use the "Spacing" function this way so that the new notes line up with the notes that are already on the staff. Don't worry about erasing or duplicating what is al-

ready there; when SCORE inputs on top of a pre-existing staff of music it creates new notes, rests, articulations, beams, and slurs according to your input, but doesn't create redundant clefs or staves. You don't need to input time signatures, either. Press the Space Bar to begin input.

Once again, this new line of input *must have the same number of beats* as the first two lines of input. Use an invisible rest to begin the input. Use the "SU" command to force the stems up. Here is the complete input for all three "voices:"

Staff 1

```
M2/TR/5  4/DS4/S+/DS/S0/D[D/S+/D/S0]/@D/@D/@
D/BA/M/3 8/A2/M/5 4/F/A/C3/E/M;

EX10/Q./4:5X4;

;

2B;

412 15;
```

Staff 2 (First Pass)

```
TR/5 4/RI/3 8/SD/A4/G/FN/5 4/E/EE/D/DD/C;

W Q/EX3/QX5;

;

1 3;

;
```

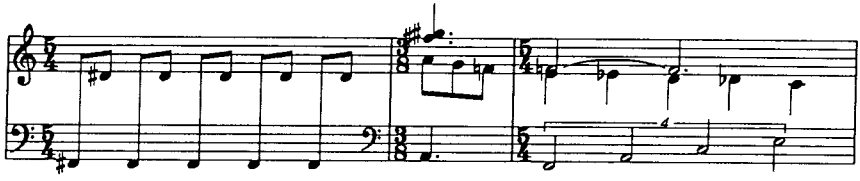
Staff 2 (Second Pass)

```
RI/SU/FS5:GS/FN4/;

W Q/Q./H/H.;

;
```

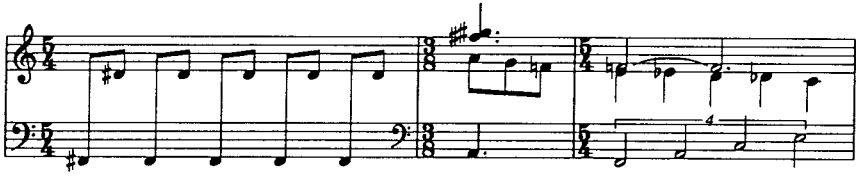
```
;
2 +3;
```

Notice that we used a "+" to force the slur above the last two notes.

The finished input should look like this:



Save the file as EXAM7.MUS, then type LJ to Lineup and Justify the file. Note that SCORE automatically calculates how to align the four against five polyrhythm in measure three. Save your work again (use the SM command) before you continue.



How to adjust the interval of a second

This type of example usually requires some editing. First we'll fix the "second" in measure three of staff two. Using the mouse, click on the E in measure three of staff two (it may take a few tries with the mouse to find the note). Normally, notes that are in seconds, like this E and F, are offset so that their stems align. Change P10 to 10. The note is automatically offset one notehead's width to the right. If you re-lineup and justify the line, the horizontal relationship between these notes will remain the same, and their P3 values will remain exactly the same.

Why not just move it to the right with the cursor key? This is an often-misunderstood aspect of SCORE. To demonstrate, we'll edit this example incorrectly. Select the E in measure three again, and change P10 to 0. Using the cursor keys, move the note slightly to the right, until it looks like it is in the correct position. Press Esc to exit the Edit Mode. Now type LJ to Lineup and Justify the line. It doesn't work. SCORE displays:

```
Staff 1 has 11.500 beats
Staff 2 has 13.500 beats
*** ERROR: Wrong number of beats.
Press any key to continue.
```

What does Lineup and Justify do?

For Lineup and Justify to work properly, both staves must have exactly the same number of beats. But all you did was move one note to the right, why did it cause this problem? To understand this, we must explain a little about the technical workings of Lineup and Justify with regard to multiple voices on a single staff.

How does SCORE know the rhythmic value of any note or rest? During the Rhythm Stage of Input Mode, you assign a duration to each note and rest on a staff. SCORE translates this input into a number which it inserts into Parameter 7 of every note and rest. If it's a quarter note, P7=1; a half note, P7=2, and so on. When you invoke Lineup and Justify, SCORE adds up the P7 values for every note and rest on each staff and makes sure the total is the same in each case. So why did this line have too many beats?

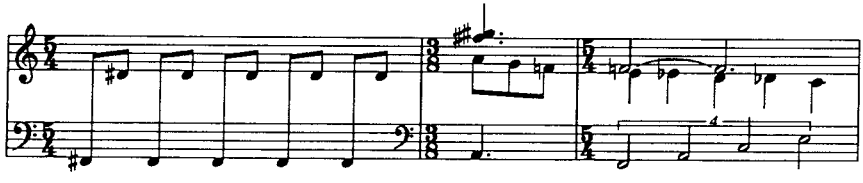
During Lineup and Justify, SCORE told you staff 1 had 11.5 beats. (Remember that SCORE considers a quarter note to be a "beat" regardless of the time signature.) Staff 2, since it has two voices, should have 23 beats (11.5 x 2). But it doesn't. SCORE searches through the staff, and any notes

(or rests) that are in the *exact* same horizontal position (exactly the same P3 value) are not counted twice. Since the A in measure 2 is at the same position as the F#/G# diad, and the diad and the three eighth notes are equivalent, they are not counted twice. However, when we moved the E in measure 3 to the right, we changed its *P3* value, and now SCORE thinks there is a half note on the first beat (the F), followed by two quarter notes, and then the rest of the measure. That is why we use P10 to displace notes to the right or the left—it insures that the Lineup and Justify routines will work properly.

The Set and Align Command

Restore the misplaced E to its original position. Do not trust your eye—you must check the P3 value of the F natural and then make sure the E has the exact same value in P3. SCORE provides a command to assist you in aligning items. Select the F for item editin. Now type S ENTER(for Set). A dotted line appears alongside the F. Press ENTER. SCORE will step through every item on every staff that is five spaces to the right or left of this dotted line. If you want any of these items to align with the F, type A ENTER. Press ENTER to step through the items until you find the E, then type A ENTER. While the E is still selected (you are still in Edit Mode), change P10 to 10, then press ENTER, ESC to exit the Edit Mode.

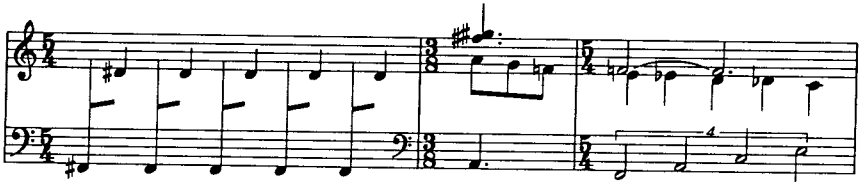
Type LJ and follow the prompts. This time LJ should work properly. Save your work and continue to the next editing stage.



Cross-stave Beaming

Unfortunately, SCORE placed all of the beams in measure 1 *above* staff 2. We want them between the staves. You can move them in a couple of different ways: select each beam for item editing with the mouse, and use the cursor keys to move it down to the correct position or use the group edit command "ALTER" to change each beam's P4 (left vertical position) and P5 (right vertical position) values. If you use the group edit method, set P4 to 9.75, and P5 to 10.75. After you have moved the beams, you need to make one additional alteration to them so they will be centered correctly. Each beam's right horizontal position (P6) is too far to the right. Do not manually move the beam's endpoint. To displace this correctly, you must put a value in P9. For each beam in measure 1, set P9 to 200. We'll explain P9 in more detail in the reference chapter on beams.

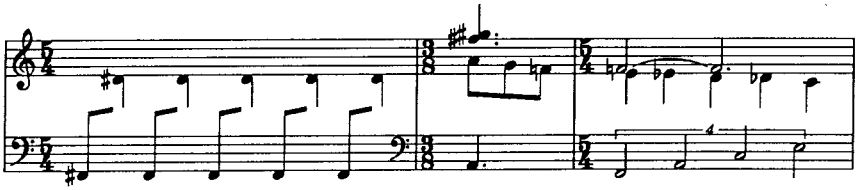
Using the group edit method, you would press F3, F5 and set base staff to 1 and code to 6 (the code number for beams). Leave the positions set at 0 and 0 to edit the entire staff length. Now press F3 for alter. Remember that you may change many parameters at once with the alter command. Since we want to change P4, P5, and P9, type `4 9.75 5 10.75 9 200` ENTER. In a second, all of the changes are made.



The Adjust Command

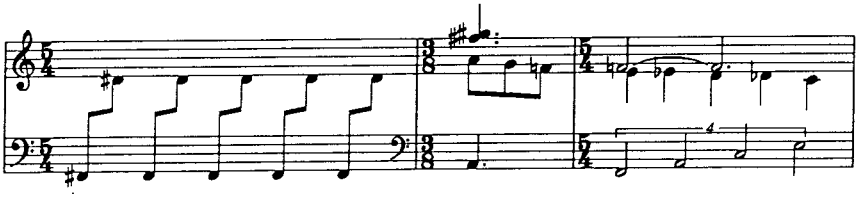
Whichever method you use, the stems on staff one are a mess! SCORE provides a quick way to fix this: the Adjust command. Type AD followed by the staff you wish to adjust, or if you want to effect every staff, use a number

greater than the total number of staves possible in a SCORE file (i.e. 33). For cross-stave notes, which have stems from both directions, you need to add a second number after the staff number. Type `AD1 4` (any single-digit number will work for the second number as long at it's not 0) ENTER. The example still doesn't look quite right.



The problem is that SCORE thinks all of the D's in the upper staff are stemmed up, and as you know, that means that their P5 value is 10 (12 in the case of the D#, since the "2" indicates a sharp). That is why the Adjust command can't work right. Use the Edit Mode to alter the five upper D's to stemmed down notes. Change P5 to 20 (it was 10). For the first note, P5 should be 22 to indicate the sharp. Remember, all of these pitches are attached to staff one. The easiest way to edit them is to press F3 to select the edit menu, then press F3 again to select the "Edit by Staff" mode. SCORE will ask you which staff and code number; type `1 1` ENTER. An arrow appears by the first note on staff one. Since it is o.k., press ENTER to proceed to the next pitch. Type `5 22` ENTER, and then continue through the staff making these corrections. When you have finished, press ESC to exit Edit Mode.

Now the Adjust command should work correctly. Type `AD1 1` ENTER (remember, any number will work for the second number). Your example should now look like this:

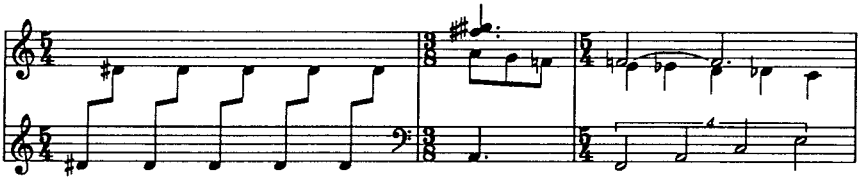


The STM Command

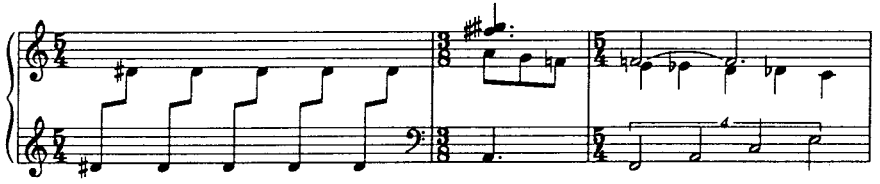
It is a common engraving practice to shorten some stems when there are multiple voices on a single staff. The last two measures on staff 2 present a common example where this would be applied. SCORE provides an automatic command to do this: the STM command.

Type STM *X* ENTER, where X is the number of the staff you wish to adjust stems on. The STM command only shortens stems when the note is above the middle line (when stems are up) or below the middle line (when stems are down). Some notes will not have their stem length altered by the STM command.

Notice in this example that the stems were shortened in the lower voice of measure 2, and now do not connect to the beam. Select the beam for editing (using the mouse) and move it up one space using the cursor keys. Your example should now look like this:



One more thing: let's add a curved brace at the beginning of the staff. Use the mouse to click on the leftmost barline. SCORE makes the curved brace out of barlines, so change P5 to 8. Press F3 to make this a copy of the original barline. Press ESC to exit Edit Mode and save your work. Congratulations, you've just completed a very difficult lesson in some of SCORE's most advanced techniques!



Chapter Eight
A Game Plan for Using SCORE

Up until now, we've showed you many of the details regarding how you input and edit music in SCORE. But there are other aspects to Computer Music Typography. This chapter will explain:

- Different Strategies for File Structure (for use with PAGE and SCORE)
- Setting Up Your Work for Different Size Pages
- How to use SCORE's Printing Program, SPRINT

How to Set Up Your Files in SCORE

Generally, it's always a good idea to restrict each file you create to a single system of music. Obviously, you will be limited to 32 staves (the maximum allowed in a single file—see Chapter 9 on creating Orchestral Scores for ways around this limit). If every system in your piece has the *same number of staves*, you then have the option of using PAGE to process your files and create a new layout. In addition, smaller files are easier to edit and manage.

Suppose you prefer to have files that encompass the entire page so that you can see what it looks like. We still recommend inputting each *system* into a separate file. After Lineup and Justify, and editing, use SCORE's COM command to combine the files and create a single page.

If you plan to process the piece through PAGE, each file must be a single system, and it must have the same number of staves. PAGE will automatically create full pages as its

output, rather than individual systems. **You cannot use PAGE to layout a piece if the systems have different numbers of staves** (i.e. 4 staves in one system, 5 in another).

And it is most important to be very careful naming your files! File naming errors are a frequent problem for inexperienced SCORE users. Ideally, each file should have some short descriptive name followed by two or three alphabet letters, and an extension (the default is ".MUS" if you don't supply one). If you were writing a string quartet, you might use SQAAA.MUS for the first file, SQAAB.MUS for the second, and so on. Then, if you were to process the piece through PAGE, you can rename the files SQAAA but with the default extension of the page program, .PAG, and preserve your original input.

PAGE deals with file names intelligently. If you end the name with "AAA" as we did in the above example, PAGE will create a very useful file nomenclature. Page one will be SQAAA.PAG, Page two will be SQAAB.PAG , etc.

Suppose you prefer numbers to letters. PAGE will do that for you, too, but you must be careful. Suppose you have a ten-page piece. You process it through PAGE, and when it asks for the output file, name you tell it SQ1.PAG. That's fine. File one would be SQ1.PAG, file two SQ2.PAG, file three SQ3.PAG. But after page 9, there are no more single digits, PAGE has no where left to go. The file for page ten will be named S**R0**.PAG (the "Q" is advanced to the next letter, "R," and the "9" skips to the next digit, "0"). There's a simple way to fix this. Instead of telling PAGE the first file is SQ1.PAG, use SQ**01**.PAG. You can now have up to 99 pages in this piece. If you need more than that, use SQ**001**.PAG. Not only is it important to do this in PAGE, but you should also use these zeros (as placeholders) in your own SCORE files if you plan to use numbers instead of letters.

Different Size Pages (for use with SPRINT)

As we mentioned before, SCORE's default page size is 8½ x 11". The staff, if left at its default width of 0 to 200, is 7½" wide, and the page height is adjustable by you. Usually you will set a 10" height, thus having a nice ½" border around the entire page. For many jobs, this size is fine. Most published music is printed on 9 x 12" paper, and SCORE's default size will yield a nice border when printed on a 9 x 12" sheet. Often, however, music is printed on larger paper. There are many ways to accomplish this in SCORE.

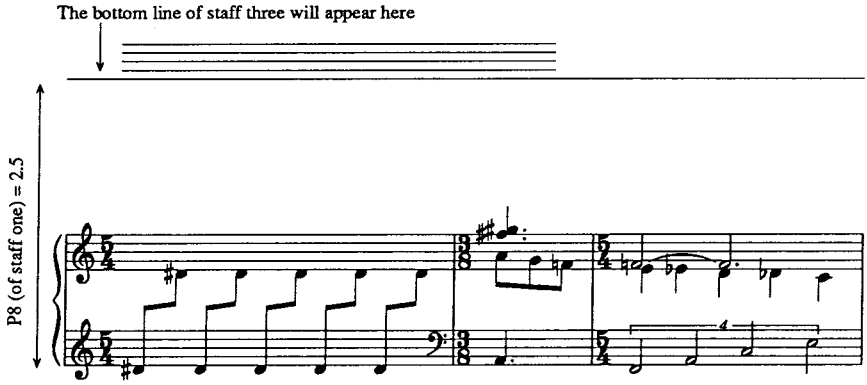
Although you can alter the length of the staff, we don't recommend this as an option. If you leave it at the default positions, you always know point 0 is the leftmost point, 100 is the exact center, and 200 is the right end. Instead, we suggest you only change two variables: the staff *size*, and the *height* of the page. You already know how to change the staff size; you can alter the Staff Setup Menu in input, or change it when processing a piece through PAGE. But the height setting is a little different. We will explain how to set the page height in the SCORE files so that SPRINT can print out the page.

Printing pages with systems that have different numbers of staves - SPRINT

Start SCORE and get the last file you created, EXAM7.MUS. Suppose we want to print this two-stave file along with 2 of the three-stave files we created in Chapter Two. We know PAGE won't allow us to mix files like this. We could use the COM command, but SCORE has a special program, SPRINT, which is used just for printing music. It also acts as a kind-of "paste-up" program, too. Files like these can be combined by SPRINT for the purpose of printing. You tell

SPRINT the name of the first file on each page, and how many files make up that page, and it does the rest. But there's something you must do to the files first.

SPRINT needs to know how much space you want between this file and the one you will have above it. Start SCORE and retrieve the file EXAM1B.MUS. To set the space to the next file, select staff one with the mouse (or type ST1 8 ENTER). You are now in the Edit Mode. Set P8 to 2.5. Notice that a line appears above staff 2. P8 sets an absolute distance (in this case, 2½") from the bottom line of staff one in this file to the bottom line of staff one in the file above it. (Note: if you prefer to work in centimeters instead of inches, SCORE does allow you to change to the metric system. See The Reference Manual under measurements.) It takes some experience to learn how to set P8, but we suggest you remember that this line represents the bottom *staff line* of staff 1 in the next file, and that music often hangs below this point. Try to be generous with the amount of space you create with P8 when possible.



Save this file as "2.MUS" by typing `SA 2.MUS`. You have created a new file, 2.MUS, and preserved the old file, too. (This is the same as using a "Save As..." function in other programs you may own.) Now type `RS EXAM7.MUS`. The program restarts and gets the new file at the same time.

Select staff one for editing and set P8 to 2.5. Save this file as "3.MUS" and then restart the program with file EXAM1A.MUS. Make the same change in P8 of staff one, and save this file as "1.MUS". Exit SCORE by pressing F8.

> You only set P8 for staff one. As you have already learned, SCORE builds files from the bottom up. Technically, SCORE looks at staff one first for important information, like the P8 setting. Obviously, once SCORE has this information, it would be redundant and confusing to SCORE if you set it for other staves in the file.

Using SPRINT

We are now ready to print this page. We will demonstrate this process assuming you are using a PostScript Laser Printer; if you have a dot matrix or inkjet printer, or a different type of laser printer (not PostScript), the reference chapter on printing will detail how to use these devices. It's still a good idea to read through this section, however, as we will also demonstrate how to "print" to a PostScript file.

Start SPRINT by typing `SPRINT` ENTER. You are presented with a menu of four options:

```
1     Output to PostScript Printer or file
2     Output to Dot Matrix Printer
-1    Statistics only
      "ex" .....Exit
```

The first two options are self-explanatory. The third option is only used if you wish to find out the height of your page before you print, and the last is to exit the SPRINT program. Select option 1 by typing `1`. We'll now take you through each of the prompts and explain what they mean.

```
<Enter> = print single page; M = multiple pages.
->
```

You can use SPRINT to print a group of pages or an entire score if you like. For now, press ENTER to select the single page option.

```
Enter the file name of the TOP FILE and NUMBER OF
FILES on the page.
```

In this case, you would type `1.MUS 3` ENTER. Once again, we must point out the importance of having files that are sequentially named.

```
Size = 1 Type new size or S = use same setting as
before ->
```

"Size = 1" means 100%, the actual size you input it at. If you changed it to ".9", your page would be reduced to 90% (horizontally and vertically) of the size you input it at; "1.1" would be 110%, and so on. Press ENTER to accept the default. (Ignore the "S" option for now.)

```
Format: B=Big paper, R=Rotate, BR=Both,
<enter> = normal ->
```

The "Big" setting is only for use with high resolution printers (like the Linotronic L300). The "normal" paper setting is for letter or legal paper. "Rotate" is for printing in what is usually called "Landscape" orientation, and we'll demonstrate that later. Press ENTER to continue.

```
X offset= .5", Y offset= .75" Change or <enter>
```

The X offset is the distance from the left edge of the paper to the beginning of the staff. You may want to change this sometimes to allow for a different margin for binding or if there is a long instrument name in the left margin. At this X position, with the staff at its default 7½" width, the music will be centered on the page. The Y offset is the distance from the bottom of the page to the *first line* of the bottom staff. It is set to ¾" to compensate for the usual amount of

music that dips below this point. Sometimes you may wish to change this offset if you have a shorter or taller page. **SCORE checks the file, and if you have an item that dips very low, it will automatically increase the Y offset to insure an eighth inch margin from the bottom of the page to the item**. Press ENTER to accept the default.

`Line Width = 2 pixels. Change or <enter>`

This controls the minimum width of the lines on the page (staff lines, stems, etc.). It's an advanced feature which we'll explain in the section on high resolution printers.

`L or <enter> = to Laser, P = to PostScript file`

If you are connected to a PostScript Laser Printer via a serial or parallel port, or connected to a network that supports print spooling, press ENTER. SPRINT sends your file to the printer. You will see columns of numbers scroll by on the screen which indicate that each item in the file is being sent to the printer. You can see SPRINT "paste together" each file as it works. Depending on the speed of your printer (and computer), this will normally take a minute or so. An indicator at the bottom displays the total height of the page in inches (including the bottom margin), then asks you if you want to print another copy of the page or return to SPRINT to print a different Page. Type `0` and then `N` to exit SPRINT. If you don't have a PostScript Laser Printer, we'll demonstrate how to create a PostScript file for printing at a later time and place, on a Local Area Network that does not support print spooling, or with a utility program that translates PostScript files (like GoScript™)

Writing A PostScript File

Start SPRINT, and repeat the same steps outlined above. When you reach the prompt `L or <enter> = to Laser, P = to PostScript file`, type "P" to select PostScript file.

SCORE prompts you for a name for this file. Type TEST and do not add an extension. SCORE automatically adds the extension ".EPS" This stands for Encapsulated PostScript. You will see a series of numbers in columns scroll by, and after a minute, the page will be saved to a file on your disk. An indicator at the bottom will tell you the total height of your page, and ask you if you want to print another page or exit. Type N and exit SPRINT.

What is the purpose of creating a PostScript file? Basically, you can do five things with a PostScript file:

1) Bring this file (on floppy disk) to a different computer to print it on a laser printer.

2) Bring this file (on floppy disk) to a Service Bureau to print it on a high-resolution photo-typesetter (like a Linotronic machine).

3) *Import* this file into any Desktop Publishing program like Pagemaker™, Ventura™, WordPerfect™, etc.

4) Print this file on a non-PostScript printer (like the HP Laserjet) through a translation program (like GoScript™, UltraScript™, or Freedom of the Press™)

5) Import this file into another computer with a different Operating System (such as the Macintosh OS or UNIX) via a LAN or disk conversion (e.g. Apple File Exchange.)

These options will be explained in more detail in the reference chapter on printing, but it is important to note that once you have created a PostScript file, all of the information to create that page is in the file. You do not need to use any additional music fonts (like Adobe's Sonata Font) to print the page. (If your piece contains any text, the printer must contain whatever fonts you selected for that text. If you don't know which fonts you used, SCORE creates a file with a list of them called PSFNAMES.TMP. Open this file

(one way is to use the DOS TYPE command), and you will see a list of whatever text fonts you used in the piece. Doublecheck to make sure your printer has them before you print the file.) See the reference manual for more information.

Printing Larger Pages

You like the way this page looks, but perhaps you would prefer it to be 11 x 14". If your printer accepts that size paper (most laser printers don't; some dot matrix printers will), you could just change the "Size =" setting to "1.33". This will enlarge the page to 133% of it's original size, and an 8½ x 11" page will become 11 x 14". (We'll explain more about this later.) But if you are using a laser printer that doesn't print on 11 x 14" paper, the next best solution is to *tile* the page.

Tiling

Just as you create a kitchen floor, "Tiling" on a printer is a method used to create a large area from a combination of smaller areas. In this case, we'll laser print the top half of this page on an 8½ x 11" sheet *sideways*, then print the bottom half the same way. When finished, you will have to tape the sheets together to form an 11 x 14" page. *Any* size page can be created in this manner.

Printing Rotated in Landscape Format

Start SPRINT again. Select option 1, laser printer. Press ENTER to print a single page. Now type `1.MUS` **`2.`** We are just going to print the top half of the page now, so we don't need to include the bottom file.

SCORE now asks for the size. To create an 11 x 14" page, we need to print this at 133%, or size = 1.33. But SPRINT has a special way to do this. Press ENTER to accept "Size = 1.". When SPRINT asks you for the format, select "R" for

Rotate. When SPRINT rotates a page, it *automatically* enlarges it to 133% of the original size. That is why we left "Size = 1" at the default. If you changed the size setting to 1.33, and *then* selected Rotated format, the image would be enlarged an *additional 33%. This would yield a size of 1.773 or 177% of original size.* The music on your page would be 13¾" wide by 17½" high!

Continue through the prompts, accepting the default settings. When printed, you will have the top two systems of this page on an 8½ x 11" sheet going sideways. Now let's print the bottom half of the page.

Type `Y` to continue with SPRINT. Press ENTER to indicate you want to print a single page. This time, type `2.MUS 2`. We want to print the bottom two files for this page. Didn't we already print the second file (or system) for this page? Yes, but it's usually a good idea to have some duplication of the music to allow for different possibilities when it comes time to splice the pages together. Sometimes you won't be able to do this, but in this case we can.

Now SPRINT asks `Size = 1 Type new size or <enter>. S = use same setting as before` - Since the last page we printed had the exact specifications we require for this page, type `S`, and SPRINT will use the same settings. In a minute, you'll have the bottom of your 11 x 14" page.

The results look great, but at this size enlargement, the staff is rather large. At the beginning of this chapter we recommended you only change two variables to create different size pages. The first was staff size, the second page height. We've demonstrated how SCORE's default 8½ x 11" page can be *printed* on 11 x 14" paper, but to take full advantage of this size, we suggest using a smaller staff size for the music.

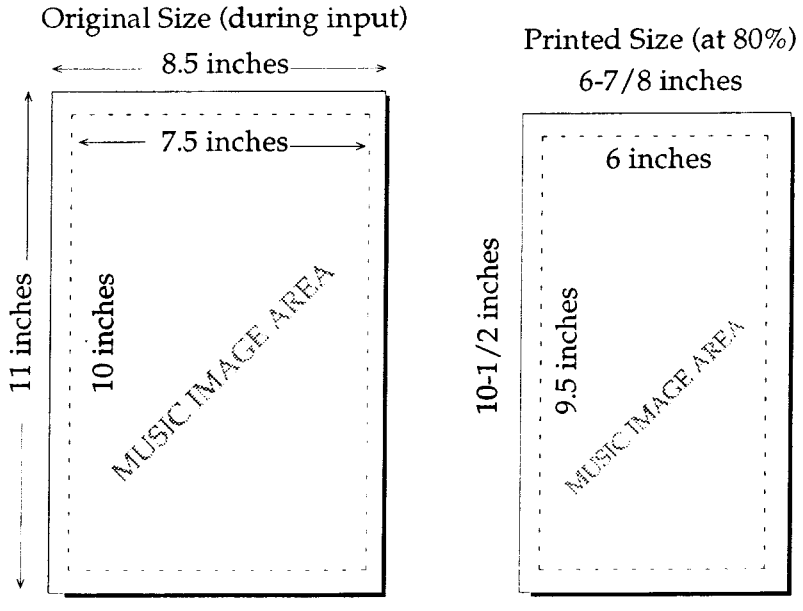
If you decide you are going to print a piece 11 x 14", a staff size of .65 or .7 will work nicely. You can decide this during input, or later if you use PAGE to layout your piece. PAGE automatically accounts for this smaller staff size, puts more music on each line, and more staves on a page. If you don't use PAGE, and select a smaller staff size during input, the display will be proportionally smaller, and you will visually be able to determine a comfortable amount of music to include on a line. (If you decide to change things later, SCORE has a command [RIP] to move measures from one system to the next. See the Editing section in the Reference Manual for information on how to use RIP.)

Other Page Sizes

Suppose you are copying a choral piece which will be printed as an *octavo*. This is a special size that publishers use for choral music (approximately 6⅞ x 10½"). Since this is smaller than 8½ x 11", it poses no problems for SCORE. Again, we suggest inputting the music onto the default staff width of 7½". Since the page is 6⅞ x 10½", and we want about a half-inch margin all the way around, the staff should be about 6" wide and the total image height about 9½". 6 is 80% of 7½ (the default staff width), so we must reduce the image to 80% of the original size. When we print this page, we should select a size of ".8" to achieve the proper dimensions.

This accounts for the width of the image, but not for the height. We'd like to fill up the page, so we want to make our final image about 9½" high when its printed. To calculate the correct height we need to work backwards. We know that the page will be reduced to 80% when its printed. That means it will be 20% narrower and 20% shorter. We know that the final image height should be 9½". Therefore, we need to calculate what 9½" is when it's *enlarged* 25% to determine what height to set the file. 9.5 x 1.25

is 11.875. You may use SCORE's H command to set the height to 11.875" (see Chapter 2, combining files). When the page is printed at size = .8 (reducing it to 80% of original size), the height will reduce correctly to 9½".



How did we calculate the correct enlargement?
Imagine that you have a stick which is 10" long and you cut it in half (a 50% reduction). Now it's 5" long. Suppose you want to restore it to its original length. You have to double its length (a 200% enlargement). Similarly, if you cut off ⅕th of this stick (an 80% reduction) it would be 8" long. To restore it to its original length, you would need to add two inches. Since 2 inches is one quarter of its current length, we need to enlarge the stick by 25%. 8 x 1.25 is 10. That is why (in the above example) we multiplied the reduced size (9.5) by 1.25 to determine the height before reduction.

Printing Larger to Improve Resolution

It is often advantageous to print documents larger than their final size to increase the image quality. Most laser printers have a resolution of 300 dots per inch (dpi). While this produces very acceptable image quality, you will see some jaggedness in curved and angled lines (hairpins, slurs, beams, etc.). One way to lessen this is to laser print the pages at a larger size and reduce them when offset printing (or photocopying) them for publication and/or distribution. This method can achieve results equivalent to using a 400 dpi printer or better.

If your laser printer supports legal paper, you can print the octavo format described above at the standard, default size (Size = 1.). The image will be 7½ x 12". Have your offset printer reduce the printouts to 80% of original size and you will achieve the same result as printing it out at size = .8, except that the resolution will be improved and the image will look smoother. If you are printing on a photocopier, similar results may be obtained by reducing to 80% when printing. This is an inexpensive way to simulate high-resolution output with a typical laser printer. By the way, this method is also recommended for dot matrix printing, and is an excellent way to improve the image quality of dot matrix printouts.

If you plan to use a high-resolution printer (such as the Linotronic L300) for your final output, we suggest printing at the final size (in this example, size = .8) as the image quality of these printers (1,270 dpi, typically) is so excellent it is not significantly improved by reduction. See the Reference Manual section on printing for further information.

In the next chapter, we'll explain how to create a Preset Staff Setup and define the page height for this example.

Chapter Nine
Creating a Custom Staff Setup

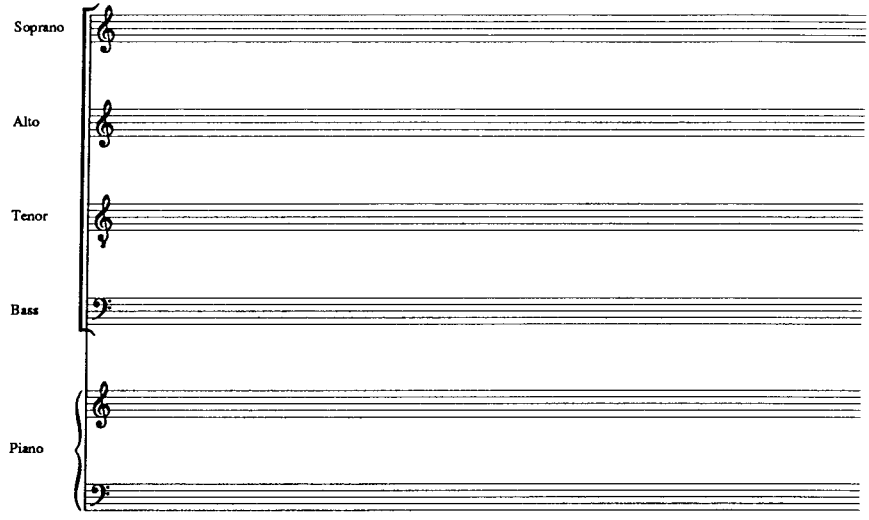
Using the example from the previous chapter, we will show you:

- How to create a custom staff setup
- How to set the height of the page

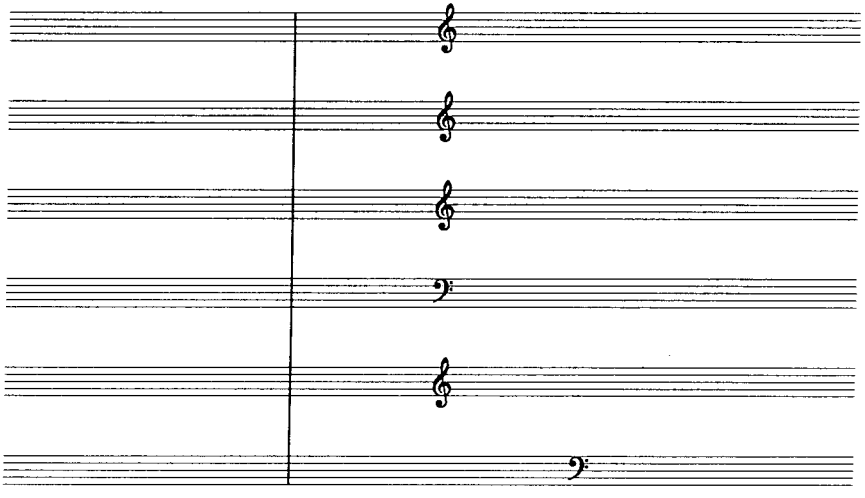
In the last chapter we discussed creating a choral piece in Octavo format (6⅞ x 10½"). The typical staff configuration for a piece like this is four choral parts and a piano part, six staves total. It is also customary to put two systems on a page in a piece like this. We'll create a custom template for this piece.

Creating a Custom Template

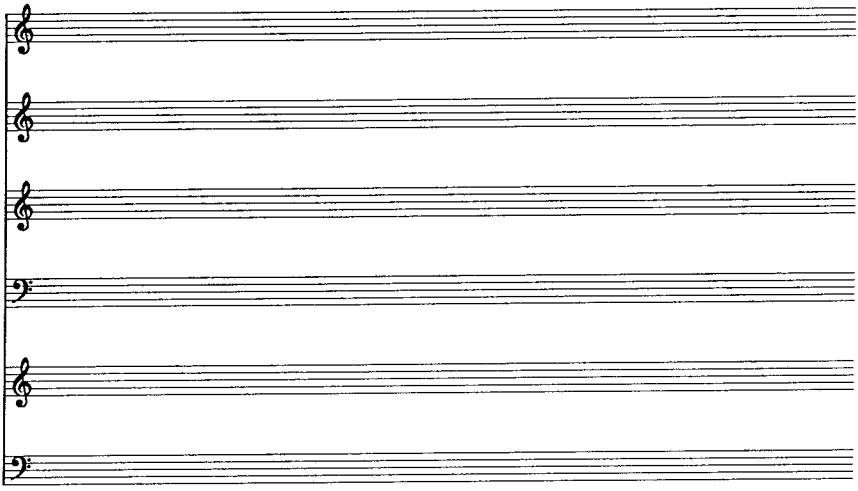
Start SCORE and press F2 to enter the Input Mode. The purpose of this is to create a blank staff setup with as much information as possible that is constant throughout the piece. Since we know that our final size will be 80% of the size we are inputting at, we should change the staff size. Octavos usually have a staff size equivalent to .6. If we make the staff size .75 now, when it is reduced to 80%, it will be .6 (.75 x .8 = .6). Set the staff size to .75. Press the space bar to continue. The Setup we will input is:



Input a barline up six staves (M6), a bass clef, and nothing else. The program asks for 0 rhythms. Type ; and go on to the next line. Since there is no further input for this staff, SCORE provides a way to skip the next input stages; type G for **G**o. Type N when you are asked to save the staff of input to a file, and proceed to the next staff. Continue the input in this fashion until you have input all six staves. Exit the Input Mode by pressing ESC.

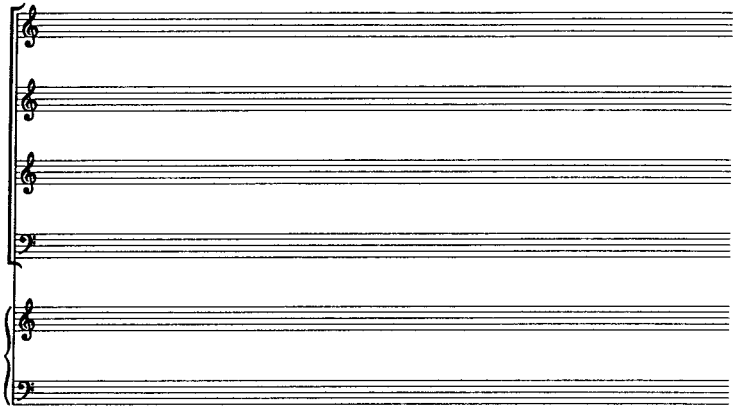


Now we'll fix this with some quick editing. Select the measure line, and change P3 to zero (remember, you can just type 3 ENTER). Press ESC to exit Edit Mode. We'll fix the clefs with a Group Edit. Press F3 to select the edit menu, then press F5 to go into Group Edit Mode. Since clefs are Code 3 items, we'll change all of the Code 3 items on every staff. Set Base Staff to 99 (every staff), leave the left and right positions set at 0 and 200, and set the Code to 3. Press F3 for Alter. The problem with these clefs is the horizontal position, P3. We don't know what their current P3 value is, but we can make a good guess at what we want it to be. The barline at the beginning of the staff is at position 0, so let's put all of the clefs at position 1.5. Type 3 1.5 ENTER. Press ESC to exit the Group Edit Mode.

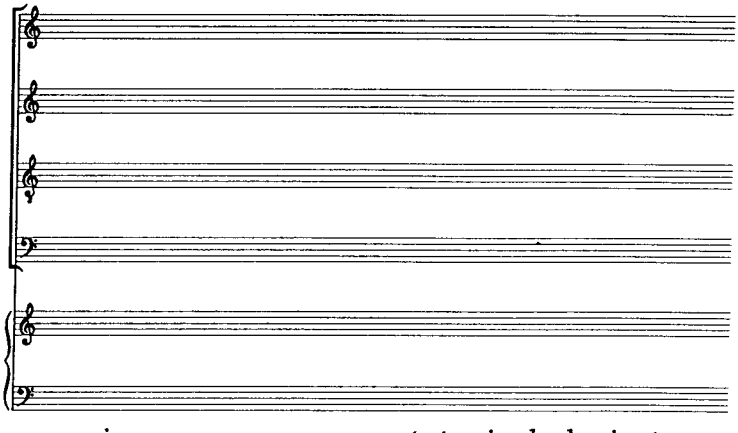


Next we'll add some brackets for the piano and chorus. Select the left barline with the mouse (or type st1 14). P4 indicates how many staves are connected with this barline, and it is set to 6. Change it to 2. Change P5 to 8 (curved brace) and you have the piano brace. Press F3 (or INSERT) to make this a copy (otherwise you would *change* the original barline to this brace). Notice that the barline remains selected for further editing. Change P2 to 3. Now this bar-

line originates from staff 3 instead of staff 1. But it's extending up for two staves. Change P4 to 4 to correct this problem. To get a heavy bracket, change P5 to 9. This type of bracket is usually used for "choirs" of instruments, such as the brass section in an orchestra or a group of singers. Once again, press F3 (or INSERT) to make this a copy of the original.

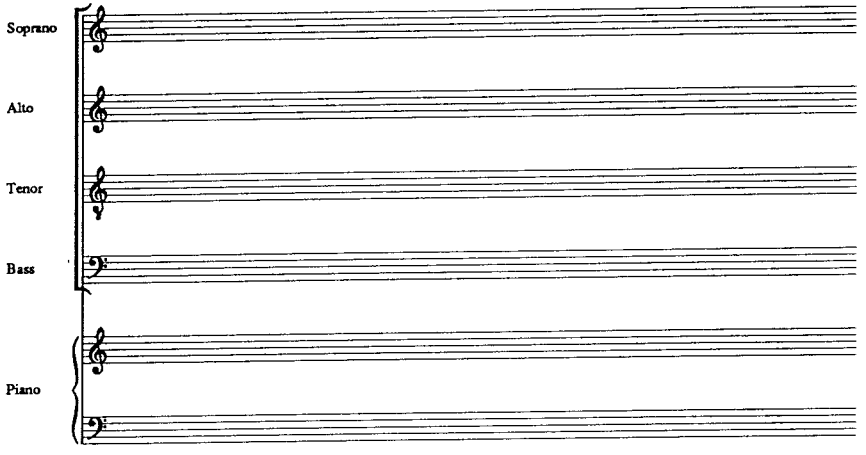


We need to edit one more item. The clef for the tenors is usually a treble clef with a small "8" below it. SCORE automatically creates this for you. Select the clef and change P5 to .8 Let's save this as CHORUS.SET.



For some pieces, you may want to include instrument labels in the left margin. Press F4 to enter the text mode. Set the staff to 6, the horizontal position to -19, and the vertical

position to 5. This position should put the labels in about the right place. Press F5 to select the PostScript font Times Roman. Type `Soprano` ENTER. The word appears on screen. Change the "Staff = " setting to 5. All the other settings remain the same. Press F5 and Type `Alto` ENTER. Continue in this fashion with the Tenor and Bass Labels. When you get to the Piano, you will have to change the vertical position to center it between staves 1 and 2. (It doesn't matter which staff you attach the label to.) Set the staff to 2 and set the vertical position to "-6". Finish the example and press ESC to exit the Text Mode. Save your work with the SM command and you have completed the choral template.



Adjusting the Height

Type H ENTER for height adjustment. SCORE tells you the height of the file is 4.294". We already know we want a page with an image area of 12", and there will be two systems on a page. Half of 12 is 6". We want to allow some space between systems, so we'll make the height of this file 5½". SCORE prompts:

```
Type new size ->.
```

Type `5.5` ENTER.

SCORE prompts:

```
Type number of staves in each system.
(Include unused staves.)

>_
```

(If you were adjusting the height of a complete page, you could instruct SCORE to add space between *systems* by typing a number here equal to the number of staves in a system. Since we want the space distributed evenly between all the staves, type `1` ENTER.

SCORE adds more space between each staff to justify the space vertically. Select staff 1 with the mouse (or type `ST1 8` ENTER. Set P8 to 6. This means that there will be 6" from the bottom staff line of staff 1 and the bottom staff line of the system above this. This sets our image area to a height of 12", which is what we wanted. Save these changes to the file using the SM command.

Using the Staff Setup Template

CHORUS.SET is now your template for this chorus piece. But you want to be able to use it over and over again for every system in your piece without changing the original file. There are three ways to do this.

1) You could open the file CHORUS.SET in SCORE, input your music, and then save it under another name. You would have to be careful not to accidentally use the SM command or you would save your work under the name CHORUS.SET and write over your template.

2) You could use the DOS ATTRIB command to change the file to "read only" so that you cannot alter it. Exit to DOS and type `ATTRIB +R CHORUS.SET` ENTER. The "+R" makes the file "read only". If you did this again, using "-R" instead of "+R", the file would be restored to its original "read/write" status. When you open this file in SCORE, you could input music into it as normal, but you would not be able to save your work using the SM command, under the name CHORUS.SET. Instead you would have to supply a new name using the "SA" command (i.e. SA CHAA.MUS). This is a very good method to use to protect your original template.

3) You could also save the file in a preset staff setup slot for recall during the Input Mode. Exit to DOS and change to the LIB directory. Using the DIR command, examine the contents of this directory. There are a lot of files! Let's limit the DIR command by typing `DIR *.SET`. (This displays every file that has the extension .SET. You will see files labelled F1.SET through F30.SET. These are the preset staff setups SCORE uses when you press the function keys at the beginning of the Input Mode. You may have thought there only were ten preset staff setups, but there are actually *thirty*.

To save your file CHORUS.SET for use as an F-Key in the Input Mode, you will have to replace one of the pre-existing setups with the new one you just created. You may want to start SCORE and look at these Setups to see which one you want to replace. (Try to choose one that you will not use.)

Viewing SCORE's Built-in Staff Setups

Start SCORE and press F2 to enter the Input Mode. Press F1 and a Staff Setup appears. Press CTRL + END to remove this setup from the screen. Now press F2 to see the next setup. Continue with this process for F1 through F10. To see what is in staff setups 11-20, press SHIFT + F1 to see setup number 11, and so on. For setups 21-30, press CTRL + F1, and so on. Make a note of any setups you think you will not use often. Exit SCORE (press F8).

Copy the file CHORUS.SET to the LIB subdirectory. To place it in one of these preset F-key slots, you must rename the file. Once again type `DIR *.SET`. The setups from 1-30 are listed. We suggest you rename the setup that you wish to replace with the extension .BAK. Once you have done that, rename CHORUS.SET to FX.SET where *X* is the number that you want your setup to occupy. (Remember that setups 11-20 were accessed with SHIFT + a function key; 21-30 were accessed with CTRL + a function key.) You do not need to change the file's attribute to "read only." If you wanted to customize all of the Setups, you could replace all 30 slots in the F-keys. You could also edit the pre-made Setups, and then save them under the same F-key, or a different one.

Altering SCORE's Pre-made Staff Setups

Instead of creating your own staff setup from scratch, you may edit SCORE's pre-existing setups. Change to the LIB directory and start SCORE. Use the Get command to get an

F-key file you wish to change (G FX.SET). Make any changes you want to the file. Use the SM command to save the file with the same name. That's all there is to it.

Obviously, we have demonstrated how to create a custom staff setup for one type of piece, a choral score in octavo format. Depending on the type of pieces you will work on, you may wish to create many custom setups of your own design.

Chapter Ten
Scores with Many Staves and Parts Extraction

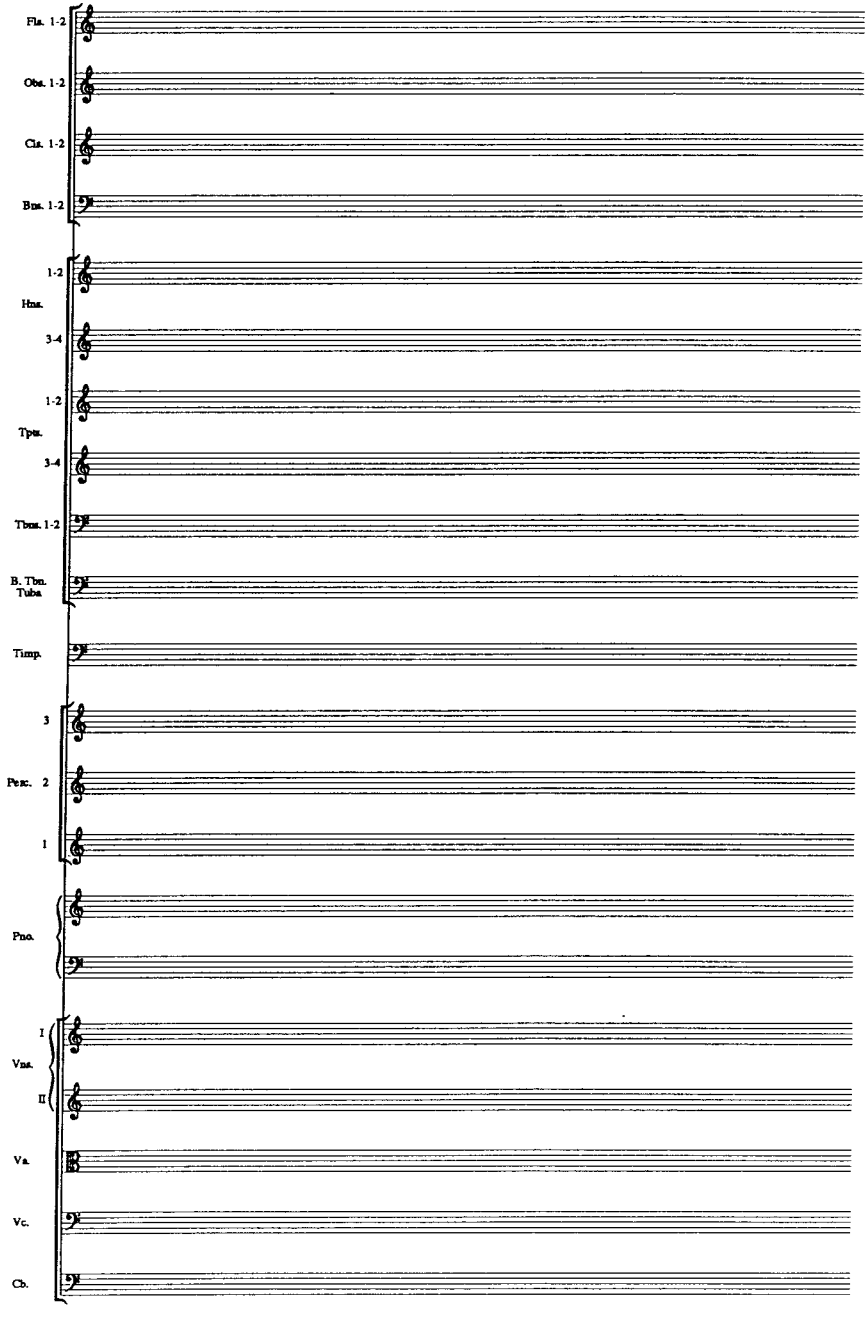
This chapter will explain:

- How to create a score with *any* number of staves
- How to prepare a score for parts extraction
- How to use the JUST program
- How to extract parts

Creating a Page with *any* number of staves

SCORE limits you to 32 staves per file. But some orchestral scores have 35 or more staves in a single system. SCORE gets around this by allowing you to create multiple files and combine them into a single system, thus making it possible to create full orchestral scores of any number of staves.

For multiple-staff files of this type, it is mandatory that you create a preset staff setup, or template as we sometimes call it, for the score. This template will be the same as the setups we created in chapter nine, with a few exceptions. Let's create a template for the following orchestral score.


Fls. 1-2
Obs. 1-2
Cls. 1-2
Bns. 1-2
1-2
Hns.
3-4
1-2
Tpts.
3-4
Tbns. 1-2
B. Tbn.
Tuba
Timp.
3
Perc. 2
1
Pno.
I
Vns.
II
Va.
Vc.
Cb.

This is a typical instrumentation for an orchestral piece on 21 staves. This can all fit comfortably into one file. But we're going to break each page into two files. Why?

Although SCORE can create files with 32 staves, you can't see that many staves on your screen and comfortably work with them. In addition, SCORE has a limit on its *Screen Memory* (also called Vector Memory) which means you may only *display* a certain amount of graphic information on the screen. Yes, you can put 32 staves in a file, but if that file has a lot of information (like dynamics, hairpins, articulations, text) which takes a lot of memory to display, the program will run more slowly, and the file may not even open if it exceeds the memory limit. (We have occasionally reached the screen memory limit with 14-stave files that had a large amount of information in them.) SCORE has a method to make some staves invisible to the display when this problem occurs, but we think it's a good practice to create at least *two* separate files for an orchestra page of this type. If you are working on simple music without a lot of "extra" information (dynamics, hairpins, articulations, etc.) you may be able to use a 32-stave file. But we have even run into situations where a 35-stave page needed to be divided into three files to avoid exceeding the memory limit. Experience with SCORE is the best guide to making a determination, but two files per page is a good place to start. (Note: if you are working on commercial and/or popular music, you will probably be able to create a single file for an orchestral setup.) For the user working in standard music, we'll demonstrate how to set up a template for the above instrumentation using this multiple-file method.

Start SCORE and go into the Input Mode.

Input the staves and clefs for the wind and brass parts (10 staves, total). It's usually a good idea to use a smaller staff

size for large scores, say about ".6". You can "tile" this score to print it at 11 x 17", or print proof copies reduced onto letter or legal paper.

Select the barline at the left of the system (sometimes called the system line). In full scores of this type, this line usually connects through every staff in the score. Since we will be combining this file with others below, we must extend this line down a little. Parameters 10 and 11 extend the barline above or below the staves (P10 extends below, P11 above). Set P10 to -20 and press ENTER. Select the barline again, and change P5 to 9 (a heavy brace), P10 to 0, and P4 to 6 (the number of staves the barline connects). Press F3 to make this a copy of the original. It still remains selected. Change P2 to 7 (the base staff for our second bracket), P4 to 4 and press F3 to make this a copy. See the Reference Manual for information on how to create other types of brackets from barlines. Now you may type in the instrument labels.

When SCORE extracts parts from a score, it gives you the option of deleting any item that is more than 5 spaces to the left of the staff. This is primarily to delete the instrument labels from the score so that they will not appear in the part. To insure that this option will function correctly, make sure you set all of these labels with a P3 value (horizontal position) *greater than five steps to the left of the staff.* Since the left position of the staff is 0, any item set at P3=-5.1 or more will be deleted.

Instrument ID Numbers

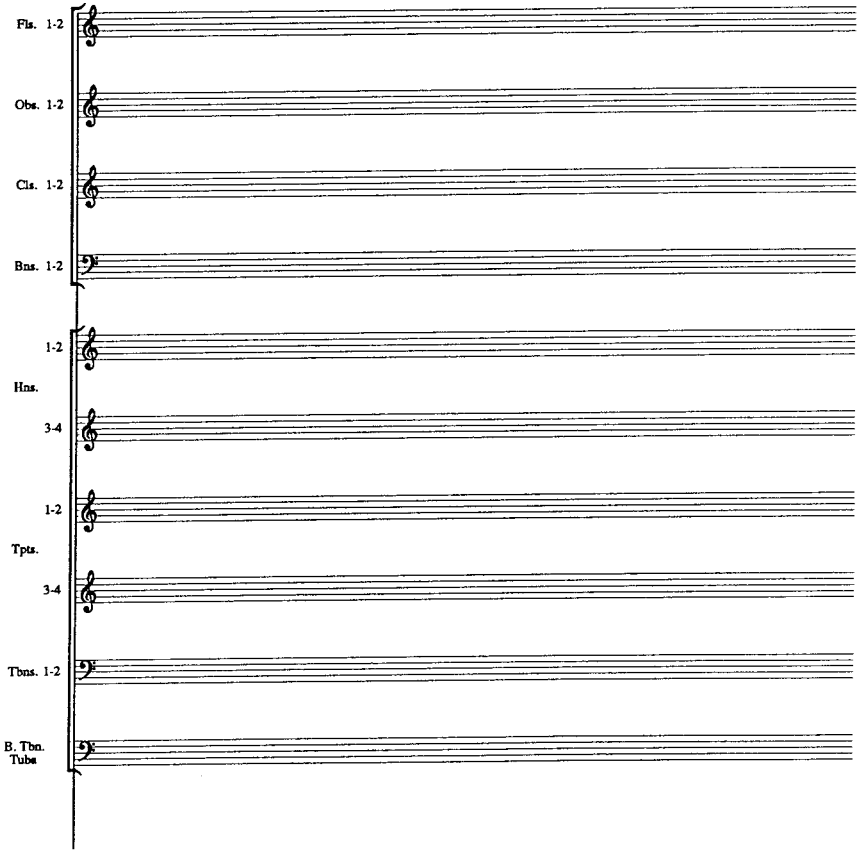
How does SCORE know how to extract parts from a score? It looks through every staff in a file for a unique *Instrument ID Number.* (This number is put in P9 of each staff.) You can assign any number to any instrument, but it is helpful if you do it in a logical order. We'll assign the ID numbers in ascending order down the score.

Instrument	ID#
Flutes 1-2	1
Oboes 1-2	2
Clarinets 1-2	3
Bassoons 1-2	4
Horns 1-2	5
Horns 3-4	6
Trumpets 1-2	7
Trumpet 3	8
Trombones 1-2	9
Bs. Trb/Tuba	10
Timpani	11
Perc.	12
	13
	14
Piano	15
	16
Violin I	17
Violin II	18
Viola	19
Cello	20
Bass	21

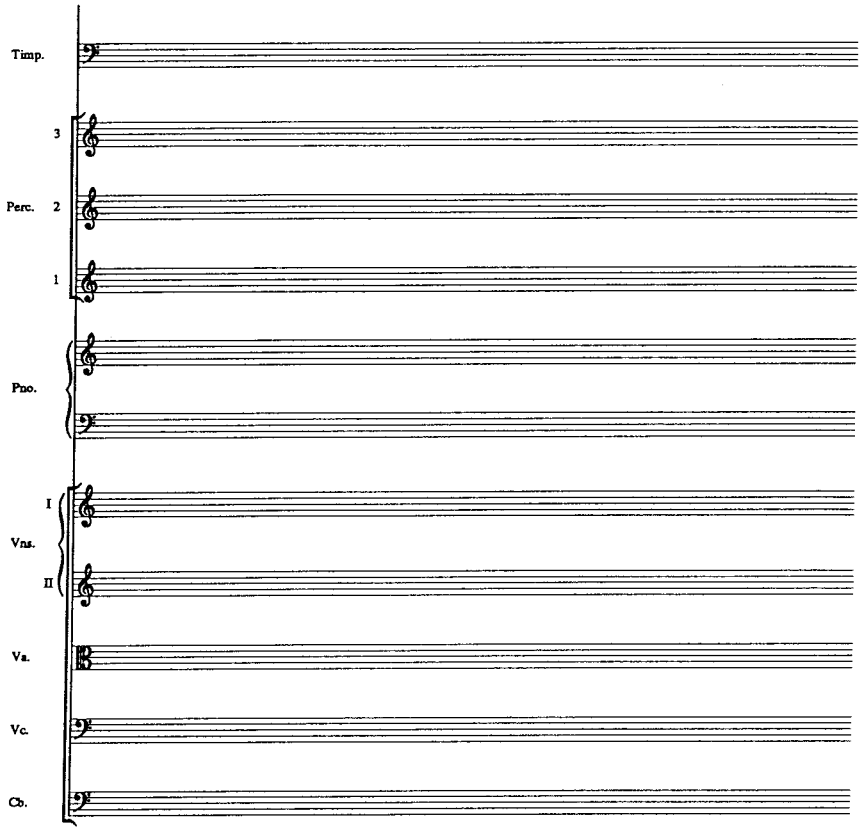
Editing by Horizontal Position

To actually edit these numbers into P9 of every staff, we'll demonstrate one of SCORE's powerful editing features: Edit By Position. Press F3, then F2 to enter the Edit by Position Mode. SCORE prompts: `Enter position, staff # and code # or click on staff with mouse.` - Since we want to edit all the staves at position 0 (their starting point), type `0 99 8` [99 indicates all stave; 8 is the code no. for staves] ENTER. An arrow appears by staff 1, the bass trombone/tuba staff. Type `9 10` to assign its ID number, and

press ENTER. SCORE jumps to staff two. Change P9 to 9, and continue on to assign all the ID numbers. Use the text mode to input labels at the left side of the staff (note: it's a good idea to abbreviate the labels in a template like this so that they don't extend too far to the left). Save this file as ORCH1.SET.



For practice, go ahead and create the other template for this score. When you alter the system line, set P11 to 20 (this extends the barline upwards) instead of altering P10. Save the file as ORCH2.SET. Create the brackets from copies of the barline (as we did in the example at the beginning of this chapter).



Using the JUST Program

You now have two files which are ready for inputting. If we assume that you will "tile" this page in its final printout (to create an 11 x 17" page), we need to set the vertical height for the files. We already know the score will be printed using the "rotate" option, and therefore enlarged to 133% of its original size. This makes the default staff width (7½") increase to 10", which should be perfect for an 11 x 17" page. The height is a different problem. We could use the "H" command to find out the height of each file, add them together, then make adjustments as necessary, but SCORE has a better solution.

SCORE has a program called JUST, which is solely for the purpose of doing horizontal and vertical justification to multiple stave files like this. We'll demonstrate how it works.

Before you can perform a vertical justification, you must set P8 of staff one in each of the files (you may recall we discussed P8 before—it sets the vertical distance between files). Get the file ORCH1.SET. Select staff 1 for editing (with the mouse, or by typing ST1 8) and set P8 to 8. Save the file and get the file ORCH2.SET. Select staff 1 and set P8 to 8.5. Save the file and exit SCORE.

Start the JUST program by typing `JUST` ENTER. You are presented with four options:

```
J = Justify horizontal
L = Line up
H = Height
EX = Exit
```

Options "J" and "L" you have been using all along. When you type "LJ" in SCORE, you are combining the Lineup and Justify horizontal functions. When you have a system spanning more than one file, the LJ command (as used in SCORE) has no way to lineup the files with each other. Instead, the LJ function in JUST is used. Similarly, you have been using the "H" adjustment as a command in SCORE (the H command) to adjust the height of single files. Once again, you must use this separate program for systems that span multiple files.

Type `H` to select this option.

```
Type first input name.ext and number of files
("-"=backup)-
```

JUST needs to know which files you want to adjust. Type `ORCH1.SET 2` ENTER.

`Type first output name.ext ("-"=backup)` – Assuming you want to place these files in an F-key setup, type `FX.SET` where *X* = the number of the first F-Key Setup. These files will now be sequentially numbered and occupy *two* slots in the F-Key Setups. (Of course, you must place them in the LIB directory to use them.)

```
Total height = 16.5 inches
Type new height-
```

Remember that this page will be enlarged 33% when it's printed. To insure a good margin, the image height should be 16" at final output. Type `12` (12" x 133% = 15.96"). JUST quickly alters the files' vertical spacing, writes them to disk, and prompts:

`Work on more data? (y or n)` – Type `N` to exit JUST.

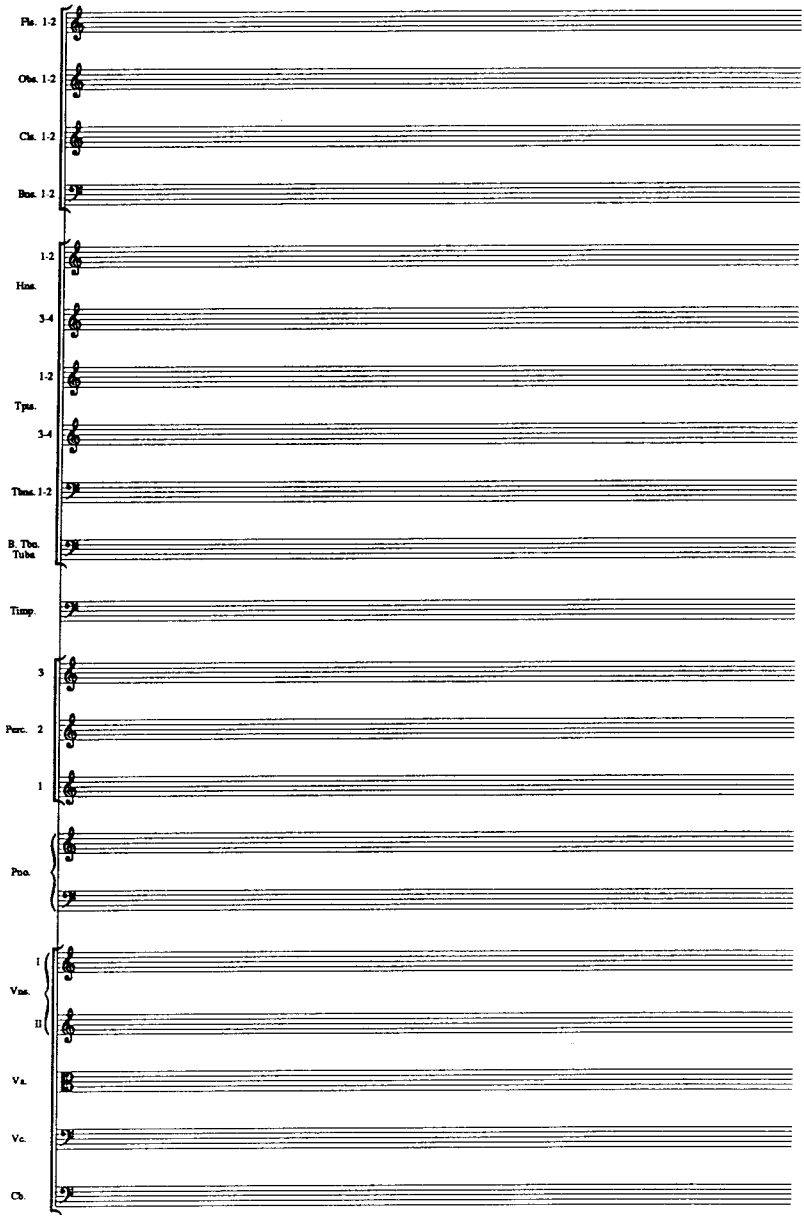
Start SCORE and get the first file you created (FX.SET). The staves are now closer together, and P8 of staff one has been reset. Type NX to examine the next file.

> The "H" option is not an intelligent adjustment like SCORE's VJ command. When working on orchestral scores, we recommend using VJ on each individual file (in SCORE) to tighten the vertical spacing to a good minimum, then use the JUST program's H option to add space to the total group of files for a page.

Turn to the next page to see how the files will look when they are printed.

Printing a Multiple-File System

To print this page, exit SCORE and start SPRINT (by typing `SPRINT` ENTER. Select option 1 (laser printer or PostScript file) and "single page". SCORE asks for the first file on the page and the number of files. Type `FX.SET 2` where *X* is the number you have given these setups. You print this



page *exactly* like any other page, except that each file has an initial barline extending above and below to connect the

system line at the left of the files. (Sprint will "paste" these files together, and the initial barline will overlap to appear as a single line.)

We'll print this page on Legal paper at Size = 1. Since there are instrument labels in the left margin, we'll change the X offset to .75 (¾") and since the image height is 12", change the Y offset to 1". Continue through the prompts and print the page. If your printer does not accept legal paper, set the size to .83 (83% of original size) which will reduce the 12" height to 10", the 7½" width to 6½". Change the X offset to 1" to center the image horizontally.

Tiling the Page

It is often desirable to print pages on large paper (eg. 11 x 17"). Unless you invest a lot of money to purchase a laser printer that accomodates oversize pages (such as the QMS PS2200), the next best solution is to *tile* pages. Similar to creating a kitchen floor, tiling on a printer means to print a large page by creating smaller sections and joining them together. The Printing Chapter in the Reference Manual explains in detail how to do this.

Extracting Parts

We have demonstrated how to create templates for a full score and how to create unique Instrument ID numbers for each instrument. There are a few other things you can do to prepare a score for parts extraction.

Creating text that will be in every part

Full scores frequently have text items that are to be included in every part. The title and composer's name at the top of the first page are usually included in each instrumental part. But when SCORE extracts a part, it will only include the information attached to the *staff of the instrument you are extracting*. Suppose you were to extract the Oboe

part from the template we just created. The Oboe is instrument ID no. 3, on staff 12 of the top file for that page. Every thing associated with staff 12 will be included in the part. The title and composer's name will be attached to staff *14*, the piccolo staff. SCORE has a special Parameter setting to take care of this problem.

Get the first file for our template and input a title on staff 14 (Perhaps SYMPHONY No. THREE). Now select the text for editing and add 100 to P6 (the horizontal size factor). Remember there's an easy method to *add* any amount to any parameter. Instead of typing 6 101, type 600 100. By placing two zeros after the parameter number you inform SCORE you want it to *add* the next number to the current Parameter value.

Adding 100 to P6 tells SCORE to include this text in *every* part in the score, even in parts that are in the file below this on the same page.

Let's also create a tempo indication. Input "Allegro ([= 100)" above staff 14, and change its P6 value to 101. (Remember that the bracket [will create a quarter note in the text.) Save the file, and restart the program with the next file.

Creating text that will not be in any part

We want to place the same tempo indication above the strings. Using the text mode, type it in above staff five. But we have already told SCORE to include the *first* tempo indication above the flute staff in each part. When we extract the first violin part, there will be *two* tempo indications in the part. SCORE provides a solution to this problem, too. Add "200" to P6 of this text item and SCORE will *not* include it in any of the parts.

> Note: if you use SCORE's Point Size command to set the size of your text, you can still make this adjustment. Set the point size (select the text and type "PT" and a number). Then alter P6 by adding 100 or 200 (type 600 100, or 600 200). Whatever point size you selected will be retained. See the Reference Manual section on text for more information on Point Size and Leading.

This technique of adding 100 or 200 to P6 also works for numbers (Code 10 items). You can set page numbers so that they won't print in the parts and rehearsal letters (or numbers) so that they will be included in the parts. (The PAGE program will automatically number measures for you if you want a number at the beginning of each system or on every measure. See the Reference Manual section on Measure Numbers in PAGE for more information on this.)

Extracting a Part

The Part Extractor Control File

For purposes of illustration, we have created a short orchestra piece that you can use to try the part extraction feature of the PAGE Program. Before you extract parts, you must create a Part Extractor Control File. This is a simple DOS text file which you may type in any word processor (save it as a "text" file) or in a text editor like EDLIN. The file contains the name of the first file on the first page, in our case ORCH01A.MUS, followed by a space and then a set of numbers. PAGE needs to know how many pages there are of your score, and how many files are used to create a system. This piece is 10 pages long, and there are two files on every page. Type in a four-digit number, **ABCD**, where **AB** is the number of pages (if it's a single digit number, type 0 as the "A" digit), **C** is always "0", and **D** is the number of files per system. Since this piece is 10 pages, two

files per page, you would type "1002". Think of it as "10 (pages) with 2 (files)" per system. Save the file with a name you will remember, such as ORCH.TXT (TXT is the standard extension for Text files). By the way, if for some reason you have a score with a *different* number of files on each page, you can create a different type of Part Extractor Control File. You still type the first file on the first page, but the numbers after it are different. Type a space, then a number indicating how many files for the *first* system. Then type another space and the number of files on the *second* system and so on, until you have specified the files for the entire piece. If you need to go to a second line of text, you must respecify the name of the file you are starting that line with. For example, this piece could have a part extractor control file:

```
ORCH01A.MUS 2 2 2 2 2 2 2 2 2 2
```

If the file had to be on two lines (for longer pieces) it could be:

```
ORCH01A.MUS 2 2 2 2 2
ORCH06A.MUS 2 2 2 2 2
```

(Page 6 begins the files for the second line of text)

> Notice that our sample orchestra piece is ten pages long, and we have named it using a sequential system of numbers and letters. The file names are:

ORCH01A.MUS
ORCH01B.MUS
ORCH02A.MUS
ORCH02B.MUS
ORCH03A.MUS
through
ORCH10B.MUS

> The zeros in the file names for pages 1-9 are essential for PAGE to read in the names alphabetically—see Chapter 5 for a detailed explanation of file naming conventions.

Start PAGE. Select option 2, Parts extraction. PAGE asks you for the name of the part extractor control file; type `ORCH.TXT`. PAGE asks you for the ID no. of the instrument you want to extract. We'll do the clarinet part first, so type `3`. PAGE prompts:

```
How many staves in part? (<enter> = 1,
B = Backup) -
```

Press ENTER to accept the default. (If you were extracting a keyboard or percussion part, you would give the Instrument ID number for the bottom staff and specify how many staves in the part.)

```
Delete items more than five spaces to the left of
the staff?
```

Type `Y` for yes and press ENTER

PAGE looks up all of the files and reads them into memory; this can take a few minutes (less if you are using a RAM disk in extended or expanded memory—see the Reference Manual chapter on how to make use of Extended/Expanded Memory). PAGE presents you with a menu. You will notice this menu is identical to the one presented for page layout. (In fact, from this point on, all you are doing is ordinary page layout—the information for the individual part has already been extracted into a series of temporary files on your hard disk [or RAM disk, if you are using one].)

```
A = Amer. or Euro. Multi-bar rest? (Current = A)
B = Add measure (bar) number.
H = Set page height. (Current = 10.00 inches.)
```

```
I = Indent
M = Get this menu again.
N = Set first page number. (Current = 1)
P = Use only part of input data.
Q = Return to Page startup.
R = Number on 1-bar rest? (Yes)
S = Change staff size. (current size = .9)
T = Transpose
X = Exit from PAGE.

<enter> = Continue - see page layout
description.

->_
```

This menu presents a list of prompts which you may accept or alter. Since this is a clarinet part, the part will need to be transposed.

Type T ENTER

```
Type number of half steps (+ or -) or press M for a
menu of transpositions
```

Type M ENTER

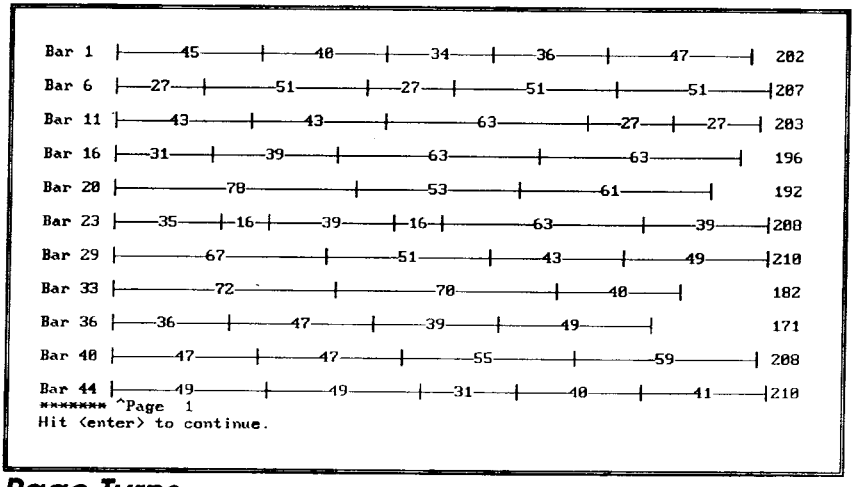
Select the transposition for B-flat clarinet, option 6.

Step through the other options accepting the defaults for no clef change, key signature, and flip stems to normal.

You now return to the main menu and PAGE asks you to

```
type next menu choice_
```

Press ENTER to continue. PAGE will display a graphic that represents the layout of the part (how many measures per line, and the size of the measures. Press ENTER to continue.



Page Turns

Generally, we don't like to put 12 staves on a single page. So let's spread this part out onto two pages, each with eight staves. And while we're at it, let's have PAGE find a good page turn. When this menu appears,

```
Choose from the following layout options.

Y = Yes, this layout is accepted.
A = n1 = number of pages, n2 = lines per page
B = n1, n2, n3, . . . = number of lines on each page
D = Give number of bars per line (zeros = ends of
pages)

S = See same layout again.
U = Find page turns.
M = Return to main menu.
X = Exit from PAGE.
```

Type U.

PAGE asks for four pieces of information: the number of beats required for an adequate page turn (a beat being a quarter note regardless of the actual meter), the number of lines per page, the number of pages, and the first page number (PAGE recognizes the publishing standard that

odd pages are on the right, even pages are on the left, and you only need page turns on the odd pages). Type: 4 2 8 1. Since we already know the music fits on 12 lines, we can spread it out to 16 lines on 2 pages and let PAGE find the possible page turn points. The graphic display returns, but now every barline that represents a page turn point is highlighted in reverse video. Press ENTER to display the information for the second page.

In this instance, PAGE only found possible page turns on the second page. Since this is a two-page part, the easiest solution is to begin with a lefthand page so that no turns will be necessary. Type U to look for page turns again. This time, specify 4 2 8 2 and press ENTER. PAGE recreates the layout so that the part begins on page 2, a lefthand page. Press ENTER to accept this layout. PAGE asks for a file name for the part. Type "CLAR01" and PAGE automatically adds the extension, ".PAG".

Start SCORE again, and open these files for editing. There may be some redundant slurs, and other items that may be out of position. It is usually a good idea to use the CRV command to alter all of the slurs on a page.

Type CRV ENTER

SCORE asks you for which staff number and position. Type 99 ENTER to fix the slurs on every staff.

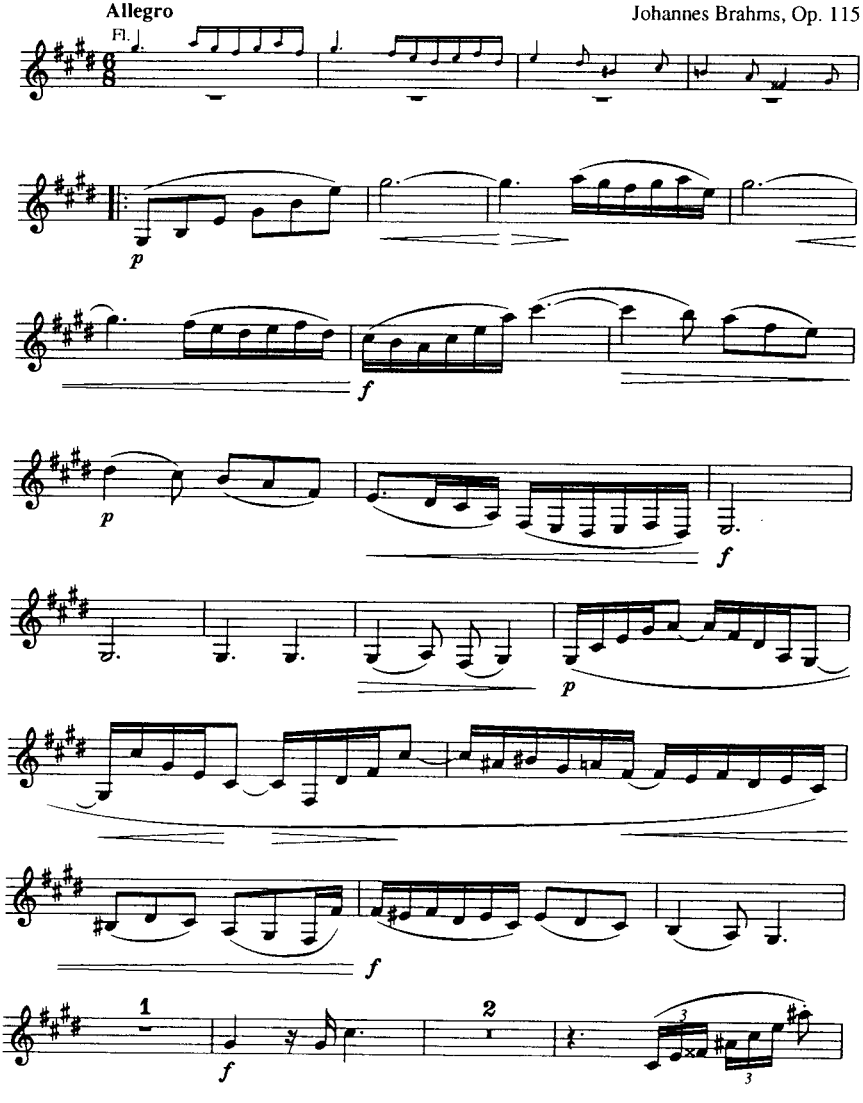
We have printed the part below as it would appear after some touch-up editing. We have also included the files in the MUSDAT directory on your hard disk in case you wish to examine them. (This also gives you an idea of the type of editing that is typically required after extracting parts.)

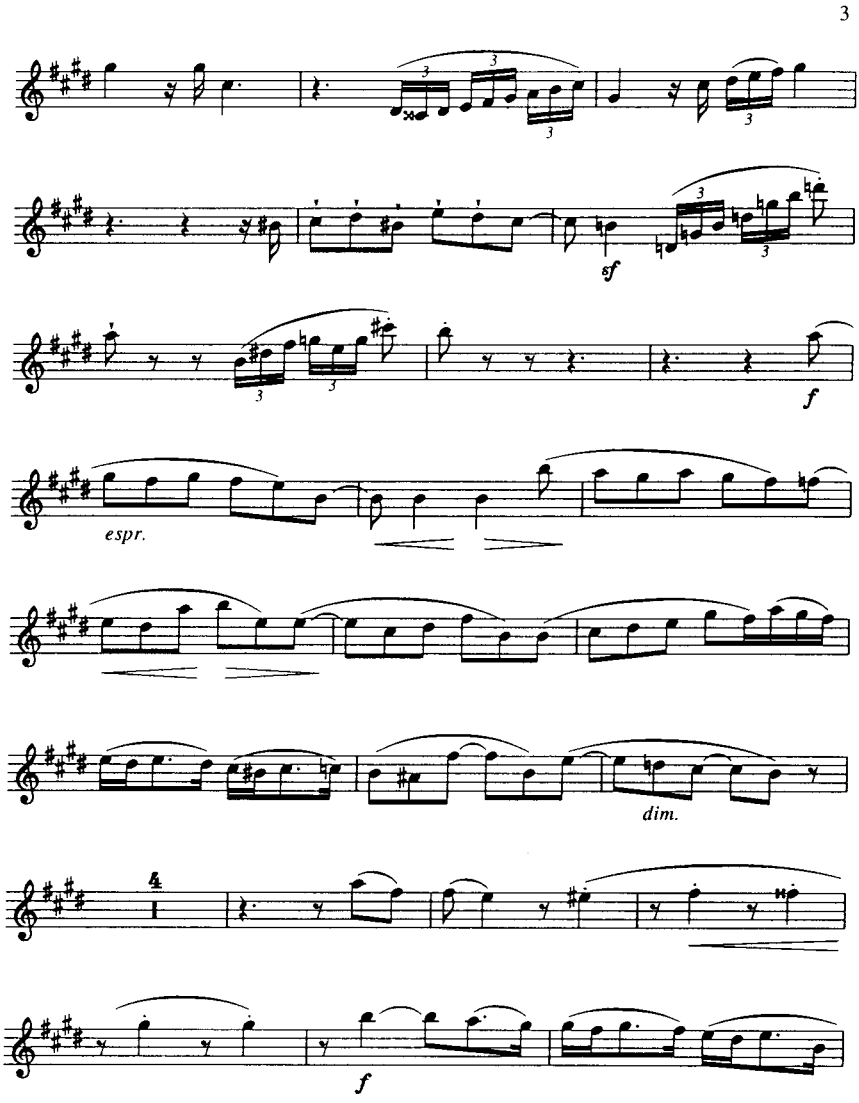
2 **Clarinet in B♭**

QUINTET

Allegro

Johannes Brahms, Op. 115





Running the part through PAGE again

Perhaps you don't like the way PAGE created this part. As you may remember, PAGE has an option to run data through again and again. Start PAGE, and select option 3 - old page data. PAGE immediately jumps to the menu

where you may select layout options and then process the part again. Follow the same steps as before, and alter anything you wish (staff size, number of lines per page, etc.) If you like, you may process the part through PAGE repeatedly experimenting with the settings to obtain different results. See the reference chapter on PAGE for additional information.

Chapter 11
Advanced Macro Techniques

The real power and speed of the SCORE program is unleashed when you take advantage of its macro capabilities. A macro is simply a keyboard shortcut. You may be able to set up your Word Processor so that you can press a key or a combination of keys to recall a frequently-used phrase. This is a macro.

Before we demonstrate macro techniques, we need to explain a little about the SCORE User Interface. A User Interface allows you to interact with the computer and its software; in essence, to communicate with it. When you start SCORE and begin pressing function keys to work in the program, you are working with an interface.

Basically, SCORE has *two* different interfaces which are redundant; just about anything you can do in one can also be accomplished in the other. Don't let this information confuse you. You've been using both interfaces up until now, and haven't even known it. Why two interfaces?

SCORE was originally written on a large mainframe computer. At that time, the user could not use a mouse or function keys to accomplish any action in the program—it was all done by typing on the computer keyboard. When the program was converted to the DOS personal computer environment, many features were added to make the program easier to use. Support for a mouse, MIDI keyboard, context-sensitive help screens, and extensive function key commands are some of these additions. This makes the

program easier to learn and use. You do not have to remember as much information to execute commands (the most often used commands are in the F-Key Menus), and you can always get information by pressing F1 for help.

Practically anything you can do in SCORE can be executed from a macro. Some users have created macros that take eight-stave scores and condense them onto two, perform complex delete and move operations, and just about anything imaginable. How do they do this?

Letter Commands

SCORE has about 100 letter commands that allow you to execute its various functions in a speedy manner. (For reference, we've given you a list of all of them on the plastic card that came with these manuals.) Up until now, we have been telling you to press F2 to enter the input mode. There is also a simple letter command to do the same thing. You type `IN` followed by the number of the staff you wish to input. The Staff Setup Menu does not appear at the top of the screen, but you can type in the required numbers on the following lines. The advantage to using this is twofold: it's faster, and it can be stored in a macro and reused by SCORE.

These type of macros are simple DOS text files. You can create them in SCORE or type them into a word processing program or text editor. Let's create one in SCORE.

Start SCORE and retrieve the file FX.SET (the preset setup we created in chapter 10—*X* is the number you assigned to it). Suppose you decided to delete all of the instrument labels in these templates. You could delete them all manually, but that would be time-consuming. You could perform a group delete on this file, but you would have to do it again for the other file. This is where a macro comes in handy.

First decide what you want the macro to do. It must delete all text (code 16 items) to the left of the staff from all staves in these files. The letter command for group delete is "DE". In order to use it in a macro, you must know how it works.

Type DE ENTER The following prompt appears:

```
Type staff #, left position, right position,
[code #, upper staff #]
```

Type: 99 -25 -2 16 ENTER (This tells SCORE what you want to delete, in this case it is Code 16 items on all staves from position -25 to position -2. As in all SCORE commands, if you do not specify an area, SCORE assumes you want to perform the function to the entire staff from 0 to 200.)

```
Type B to backout. Press <enter> to continue.
```

SCORE gives you a chance to cancel the operation in case you made an error. Press ENTER, and the text is deleted.

But that took a lot of keystrokes, and you're going to have to do it again. This is why we use macros. Type MA to enter SCORE's Macro Editor. Let's create a macro to do the Group Delete we just performed. First SCORE prompts you for a name for the macro. It's helpful to make this name as short as possible, and you do not need to add an extension. Let's call this macro DL for Delete Labels. Now type in the text for the macro. You are, unfortunately, on your own here. SCORE does not *execute* the macro as you type it, so no prompts appear. Enter the *exact* same text as you typed above for the delete operation we performed.

Type:

DE ENTER

99 -25 -2 16 ENTER

ENTER

*

(SCORE asks you to end the macro with an *, and then gives you the option of trying it out) Type Y to run the macro to see how it works.

These macros can be virtually any length, and you may use commands like SM to save your work and NX to continue on to the next file. If you had a 100-page score, with two files on a page, it would take some time to change 200 files—even with a macro like this. The solution is to *chain* the macro to itself, to make it repeat in endless-loop fashion.

Chaining Macros

First of all, we have to learn how to use this macro. Open up the next file in this piece, FX.SET. To use the macro, we invoke the Read command (which we also used to REad input we saved in a text file, another kind of macro). Type RE DL ENTER. In a second, the macro is executed—faster than you could possibly type! Save the altered file with the SM command and exit SCORE.

Using EDLIN or your word processing program, open the file DL. We are going to change this macro into a "Chained Macro" (a macro that calls itself in endless-loop fashion). At the end of this file add the command, SM ENTER. This saves the file with the same name. Now add NX ENTER. This tells SCORE to go to the NeXt file. Now add the line RE DL ENTER. This tells SCORE to read in this macro again. Save this file as a DOS Text File, and start SCORE again. [You

don't have to edit this macro outside of SCORE—you can simply re-enter the entire contents from scratch using the MA command.]

Retrieve the first file of the piece we provided you with, ORCH01A.MUS. Now type RE DL ENTER and watch what happens. In a minute or two, SCORE will alter every file in this piece. You can walk away from the computer and do something else; this operation is completely automated. If you have Extended or Expanded Memory, doing this operation on a RAM disk can double or triple the speed. (See "Using Extended/Expanded Memory" in the Reference Manual.)

But even without a RAM disk, you can speed this up. As you may have noticed, SCORE spends time "drawing" the screen when it opens a file. You can eliminate this by using SCORE's Disappear Command.

Type DP 1 ENTER

Z ENTER

Staff one has been "disappeared." If you do this for every stave, up to the maximum number in the files in your piece, SCORE will not redraw during this "Chained Macro." This feature was actually designed to speed up SCORE's operation when you are working with big files. Sometimes you can approach the limit of the Vector Memory (the indicator at the top right of the Main SCORE Window). By "disappearing" one or two staves that you are not working on, the program does not need to use its memory to draw that staff and you can speed up operation.

To disappear the staves, type DP followed by the staff number and ENTER. To disappear all the staves, type DP -1, ENTER, Z. The program will recompute the display. Now try using the "chained macro" again.

If you want to stop the chained macro, press ESC. If it doesn't stop, press it again. (ESC will halt the macro when it reaches the "RE Macroname" line.)

To cancel the disappear action, type DP99 ENTER Z ENTER. All the disappeared staves will be displayed in a second. To make a single staff appear, the DP command works like a toggle switch. Typing DP4, Z, will make staff four disappear. Typing the same commands again will make it reappear.

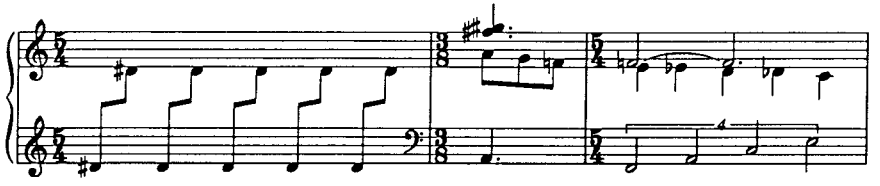
> The Disappear command is an aid for using the display. The music is not erased, nor do you have to make the staves reappear to save your work. And obviously, you can even edit music on a disappeared staff as long as you don't mind working without seeing what you're doing. If you print a file directly from SCORE (as opposed to SPRINT), and one or more staves is disappeared, those staves will *not* print. Making the staves reappear or using Sprint will solve this problem.

RAM Macros

The macro we just described is saved in a file and can be reused as often as you like. SCORE also provides a way for you to create quick, temporary macros which are stored in the computer's RAM. These macros are lost whenever you exit the SCORE program. (As they are only temporary, we sometimes refer to them as "mini-macros.")

SCORE allows you to create three RAM macros while you are working. Each macro can only contain a *single* line of text. Commonly they are used in Edit Mode to store a set of parameter changes that you want to repeat many times.

Get the file EXAM7.MUS, which you created in Chapter 7.



Suppose you want to edit this example and change the last measure on the bottom staff. Let's make the first three notes of this measure quarter notes, and the last one a half note.

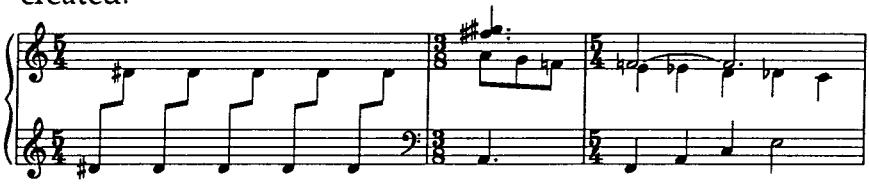
Click on the first note in measure three (or type ST1 1 and press ENTER repeatedly to skip to the note). We want to change two Parameters for this note: 1) its notehead should be a solid notehead and 2) its duration should be changed to a quarter note (SCORE differentiates between the *appearance* of a notehead and its actual duration). You could type `7 1 6` to create the changes, but then you would have to type the same thing again three more times. Instead, we'll store this in a RAM macro by typing `'7 1 6`. The apostrophe tells SCORE to save the macro in RAM. The numbers tell the program what to change: P7 = 1 (quarter note duration), P6 = 0 (solid notehead). Notice that we didn't type 0 after P6; typing the parameter number and nothing else after it changes it to zero. In a list of parameter changes, this only works for the *last* parameter in the list.

Press ENTER twice and the changes are executed and the program steps to the next note. Instead of retyping all of the parameter changes, type `;`. Press ENTER and the changes are executed. Continue on and change the next note.

What you have just done is to store the number sequence (7 1 6) in a macro that is invoked by typing a semicolon (;) instead of retyping the numbers each time.

> Note: as in other SCORE modes, the colon (:) and apostrophe (') may be used interchangably when creating macros.

The last note in the measure already *looks* like a half note, but its duration is actually different; it is an irrational value. Change P7 to 2 (type 7 2) to alter its durational value. Now use the LJ command to re-lineup and justify this staff. SCORE correctly spaces the new note values you have created.



If you want to save a different macro, use two apostrophes (") to store it and two semicolons (;;) to retrieve it. You may also store a macro using three apostrophes and three semicolons (;;;) to retrieve it. SCORE allows you to create three different macros.

If you want to know if any macros are currently stored, type ; ; ; ; ENTER. SCORE will display whatever text is stored in these RAM macros. If you exit SCORE, or save a new macro where an old one existed, the macros are erased from memory.

Saving RAM Macros

Although SCORE erases all of its RAM macros when you exit the program, there is a way to save them for future use. At the start of this chapter we explained the method you may use to create a macro which is stored on disk. To save a set of RAM macros (mini-macros), simply create a *disk macro* that *creates* these mini-macros.

Suppose you like to have these three mini-macros available when you are working:

```
'7 1 6
''9 0 10
'''200 1
```

(Don't worry about what the numbers represent for now.)

Start SCORE and type MA to create a disk macro. When prompted for a name, type MINI. Now type the numbers and apostrophes as they appear above. Type an asterisk (*) to end the file. When SCORE asks you if you would like to execute the macro, type N for no. Press F8 to exit SCORE.

Restart SCORE and type RE MINI ENTER. Your mini-macros are instantly loaded and ready to use. You could even create a set of disk macros that would each load three different mini-macros as you need them. There is no need to erase a mini-macro when you load a new one—SCORE writes over the old mini-macros automatically.

Summary

As you've worked through this manual, we've tried to introduce you to some of the many features of the SCORE program. Don't be concerned if it seems like there is a vast amount of information to learn and remember. We suggest that you just learn what you need to know for the kind of music you are working on. Don't study the intricacies of lyric input until you are ready to engrave a vocal piece. If you don't plan on doing orchestral scores, skip the section on parts extraction (although you will need to understand these concepts if you plan to copy chamber music and extract parts). Learn what you need to know, when you need to know it.

As you get proficient with the program, you will probably want to know more about how it operates. That is one of the functions of the Reference Manual. It contains detailed explanations of the many features of SCORE and how to operate it at maximum efficiency. It also contains an alphabetical index which lists information you may wish to look up. All of the Code numbers and Parameter numbers are explained in detail there, too, as well as the Letter Commands you use in SCORE, SPRINT, PAGE, and JUST. We strongly encourage the user to read The Reference Manual thoroughly as it explains many of the fine points in great detail. In addition, it carefully illustrates each parameter for every code number. Make sure you read the chapter on Editing as it explains many important features that you will

want to learn. In addition, it is essential that the user become familiar with the parameters of the various code items to maximize his or her use of the program.

SCORE is an evolving program. While version 3.0 presents a program with more sophisticated features than any other music notation program available, it is still changing and growing. Future releases will continue to develop faster, better ways to notate music on a personal computer and represent a firm commitment by San Andreas Press to remain at the leading edge of this technology. Welcome to the worldwide family of SCORE users.

Appendix

New Features in SCORE Version 3.0

If you are upgrading from Version 2.X, you are probably curious to know what new features have been added to version 3.0. If you haven't already done so, we suggest you read the installation chapter for information regarding installing the new version on top of the previous version.

Upgrading From Version 1.X

If you are upgrading to Version 3.0 from Version 1.X, we recommend you read the new manuals in their entirety. The program has changed in so many ways since Version 1.X that we would not find it practical to list the changes in this appendix.

Upgrading From Version 2.X

After installing the new version, we suggest the user read through this chapter to become familiar with the new features and parameters in Version 3.0. We also suggest you examine the Reference Manual carefully; you may discover a feature that was in Version 2.X, but was not documented.

Changes to the Parameter Structure

> Note: this list is intended as a quick guide to the new features in Version 3.0. Please consult the Reference Manual for greater detail and examples. We assume familiarity with the Parameter Structure. This section is organized by Code number. New input commands are presented first, followed by new parameter information, and any letter commands that apply to the code.

Code 1

New Input Features

Parenthetical accidentals may now be input. Insert an open parentheses before the accidental (i.e., B(F would create a B with a flat in parentheses). Accordingly, input macros are now stored with brackets ([ ]) instead of parentheses.

In the Marks Stage, you may now input the Accent-Tenuto by using the code ACT.

Repeating items

As in Version 2.X, you may type **X**3 2 to indicate "repeat the previous 3 items 2 times." Now you may type **Z**3 2 to indicate the same repeat, but *with restatement of accidentals.*

If a chord (or any item) repeats after a barline, you may type a period (.) to indicate the repeat. FS4:A:C/M/. indicates FS4:A:C/M/F4:A:C/ If you wish to restate the accidentals, use two periods (..) FS4:A:C/M/.. indicates FS4:A:C/M/FS4:A:C/

When in proximity mode, you may now type "U" after a note letter to go "up" to the next highest note. F4/CU is equivalent to F4/C5. "J" jumps down in similar fashion.

Parameter Structure Changes

- P5 - adding 100 to P5 creates an accidental in parentheses. In addition, quartertone accidentals are now available.

- P7 - now displays to three decimal places (to better indicate the durational value for irrational rhythms).

- P11 - a value of 25 creates an Accent-Tenuto. If P11 = 99, a long extension line (similar to a beam) is created, extending from the notehead. When P11 = 99, P13 alters the left position of the line, P14 controls the right position.

- P16 - controls thickness of ledger lines on PostScript Printers. The default is 2 pixels thicker than the staff lines. If P16=99, the ledger line is exactly the same as the staff line. If P16=1, the ledger line will be 1 pixel thicker than the staff. (This feature is intended to thin ledger lines for "open" cue-size noteheads.)

- P17 - alters the beginning point of the stem (primarily used for nonconventional noteheads). Adding 100 to P17 makes the stem 1 pixel thicker, 200 is two pixels thicker, etc.

- P18 - alters the size of any mark indicated in P11.

The STM Command

SCORE now has an automatic command to shorten stems when multiple voices appear on a single staff. Type STM *X* where *X* indicates the staff number. STM shortens stem length for any stem that protrudes more than 6½ steps outside the staff.

Code 2

The font for numbers above rests may now be specified. Edit the DOS Text File named PREF.SCR in your \LIB directory and change the line Restnum = 94. The number may equal any font ID number of your choice. The default, 94, is the time signature font.

Parameter Structure Changes

- P5 - You can now create old-style multiple-bar rests (for 2 through 9 measures of rest). P5 = -12 creates a two-bar rest, -13 a three-bar rest, etc. to -19 which creates a nine-bar rest. You must still use P8 to create the number above the rest.

- P10 - displaces the rest horizontally in the same manner as P10 in Code 1.

- P11 - indicates the height of the number over the rest.

- P13 - can be used to create an instrumental cue for part extraction. If P5 = -2 (whole rest), you may place an instrument ID no. for a different staff in P13, and the music in that measure will be added to the part during extraction. PAGE will change the notes to cue size, flip the stems, move the whole rest up or down appropriately. PAGE does not transpose the cue automatically, or account for any clef differences, nor will it add a label indicating which instrument is playing the cue.

- P15 - alters the size of the rest in the same manner as P15 in Code 1.

Code 4

- Wavy lines are now weighted (i.e., thick and thin, to match the traditional wavy line for trills). This is also true for the wavy line in Code 7 items. If you use a wavy line in a Version 2.X file, SCORE automatically changes it to the new type of line.

Code 5

Parameter Structure Changes

- P5 - can be used to inform PAGE to include an ending sign (when P8 = 1 or 2) in parts during extraction. Add 100 to P5 to include the ending; add 200 to exclude it.

- P8 - now has many more settings to alter the endpoint displacement. In addition to the values from -1 to -4 (as in Version 2.X), you may use values from -5 to -9 to create various other types of offsets. Fractional displacement of the endpoints are also allowed; set P8 to any value from .02 to .99. This is very useful for creating short ties and slurs.

- P9 alters the number for tuplet brackets. If you wish to create a tuplet bracket with a blank space (to create an unusual setting, such as 5:3) make P9 a negative number. The greater the value, the wider the space. (No number will be displayed or printed.)

- P9 also specifies the number for 1st and 2nd endings. If P9 = -1, no number appears. This allows you to create endings of many different types.

- P16 - indicates a number in the middle of a broken slur (sometimes used instead of a tuplet bracket). If the number is negative it will appear just below an *unbroken* slur when curving up, or above when curving down.

- P17 - moves the number in P16 horizontally.

- P18 - moves the number in P16 vertically. P17 and P18 are used when the slur is quite steep.

The CN Command

You may now use the CN command to center the ending sign above the appropriate barlines. If the barlines are on a different staff, specify that staff number after the CN (eg. CN 1). Tuplet brackets may also be centered using the CN (and the CV) commands.

Code 6

Altering The Default Beam Angle During Input

You may specify the maximum angle of beams by altering the DOS Text File PREF.SCR in the \LIB directory. Edit the line "Beam Tilt" to indicate the maximum number of scale steps over a span of 100 horizontal units. A value from 10 to 15 is usually a good place to start.

Parameter Structure Changes

New Tremolo Features

- P7 - If the second digit of P7 = 0 (ie. 10 or 20), a "floating" tremolo beam is centered between the stems.

- P11 - alters the left position of the tremolo beam.

- P12 - alters the right position of the tremolo beam.
  To create a tremolo beam where the primary beam connects the stems, and the secondary beams "float," set P7 to indicate the number of primary beams, and P10 to indicate the number of secondary "floating" beams. In this instance, P11 and P12 should equal 0.

- P14 - offsets the left end of a beam.

- P15 - offsets the right end of a beam.
  P14 and P15 are used to displace the end points of a beam when a note is offset (using P10). The value in P14 (or P15) should be exactly the same as the value in P10 of the note. In this instance, P13 must equal 0.

Code 7

The Trill symbol now has the traditional wavy line (weighted, thick/thin).

Parameter Structure Changes

- P11 - alters the horizontal position of the trill line relative to the tr symbol.

Code 8

Parameter Structure Changes

- P11 alters the thickness of the staff lines on PostScript printers. The default thickness is usually set with the Linewidth setting when printing. A value in P11 will add or subtract pixels from that setting. Note: ledger lines are 2 pixels thicker than staff lines by default. If P11 = 99, then the staff lines *and* the ledger lines will be the thickness given in the Linewidth setting.

If a staff's size (P5) is less than .65, and you print at size = 1 (or less), SCORE automatically thins the staff lines by one pixel. P11 may be used to override this feature.

Any linewidth setting that results in a width of less than one pixel will default to a width of one.

Code 9

Any Code 9 item may be input by typing NX where X equals the P5 value of the item. The item will appear below the staff (like a dynamic) but may be placed above by using a minus before the N. The Code 9 symbol library has been greatly expanded. Please consult the Reference Manual for a chart of the new symbols. Note the new percussion library, the shaped noteheads (and the library for Lute Tablature).

> **Note about dynamics**
> You may notice that the dynamics are larger than in the previous version of SCORE. While version 2.1x was being developed, we decided that the dynamics were about 25% smaller than they should be, and we resized them accordingly. These new dynamics are currently used, and they should not pose any conflicts with files created in earlier versions of the program. Depending on which version you have, you may already be using these new dynamics.

You may now create dynamics in parentheses by adding 100 to P5.

Short *l.v.* ties are now available in slots 188 and 189. They are set to automatically position correctly (horizontally) by typing CN.

Ancillary notes for trills (with parentheses and accidentals) are available in slots 174-177. Similarly, these notes are offset to center on the primary note.

Parameter Structure Changes

- P10 - alters line thickness of the symbol on PostScript printers. Positive values thicken the line weight; negative values thin it.

Code 10

Parameter Structure Changes

- P7 - indicates the font for the number or letter.

  0 is Times Roman (PostScript) Bodoni (Dot Matrix)
  1 is Times Italic / Bodoni Italic
  2 is Primitive (Stick Letters) on both
  3 is Bodoni on both
  4 is Bodoni Italic on both
  6 is Time Signature Font

  Add 10 to any font number to select boldface.

  To select any other PostScript font, specify the font ID number, preceded by "10". For example, Palatino (font no. 12) would be P7 = 1012, Helvetica (font no. 4) would be 1004, etc. You may specify an outline font by changing the "10" to "11".

- P15 - displaces the item horizontally.

The CM Command

SCORE now provides an automatic means to center rehearsal numbers/letters over barlines. Select the item and type CM ENTER. SCORE automatically calculates the correct value and places it in P15.

Code 14

New Input Method

SCORE now retains the number of staves for a barline so that you only need to specify a number at the first instance

on a line of input. For example, if the first instance is M4, and every other barline will connect four staves, you only need to type M for all other occurrences.

Parameter Structure Changes

- P5 - has one new option. When P5 = 10, a thin subbracket to the left of the staff is created. This is sometimes used to connect two instruments in an orchestral score.

- P12 - indicates a possible beginning or end point for PAGE. Placing a one in P12 informs PAGE of this for part extraction or page layout. This is intended for use in situations with double barlines, new sections, first and second endings, etc.

Code 16

Perhaps the greatest change in Version 3.0 is in its text features. We will present a brief summary here, but we strongly suggest you read the entire Code 16 chapter in The Reference Manual.

New Input Features

You may now have text items of any length (as opposed to the old limit of 18 characters). SCORE will automatically convert text when you open a file created in a previous version of SCORE.

A paragraph of text may now be input using TT instead of T. You may also read in a DOS Text File with the TTR command. A new quick text input method is available. You may ype ", the text, " and (optionally) any additional parameters from P2 on up.

In lyric input, you do not need to use slashes when specifying !! or ?? for hyphens and extension lines. (eg. Ly!!ric??mode instead of Ly/!!/ric/??/mode.)

Parameter Structure Changes

- P8 - still indicates a font override for the entire string of text. Place a "10" before a font ID number to select a PostScript font (ie., 1004 to select Helvetica, 1012 to select Palatino, etc.). Use "11" to select an outline font (ie., 1104 to select Helvetica Outline).

- P11 - displaces the text horizontally. This can be useful when creating slight displacement of lyrics to maintain their P3 values.

- P12-18 - should never be altered.

Text Editing

Select any text item, and the actual text now appears below the parameter display. Type TX (or press F9 or F10) to enter text edit mode. The text appears and may be edited. Pressing HOME moves to the first character, END to the last.

Pointsizes may now be specified by selecting the text and typing PT and a number. PT with no number displays the current size. (Note: the PT command places a value in P6; if you change staff size, the text will change size.)

In addition to centering text, SCORE now allows you to Justify a paragraph of text, create flush right text, set tabs, set a right margin, and ripple words between lines of text. Line spacing (leading) may be specified in inches, centimeters, points, or SCORE's vertical units. See the Reference Manual chapter on Code 16, for further information.

Code 18

You no longer need to specify a "T" during Input Mode. Simply type two numbers with a space between them. TR/3 8/F4 is equivalent to TR/T3 8/F4. You may still use the "T" to repeat the current time signature.

If you create a large time signature above the staff, SCORE will change it to the normal size and position during part extraction.

Parameter Structure Changes

- P9 - If P9 = 0, and a P8 contains a positive value, you can create a composite "numerator" such as 3+4/8.

- P15 - displaces the time signature horizontally. This is primarily used to center large meter signatures above the barline.

The CM Command

SCORE will automatically center time signatures above the barline. Select the time signature and type CM *X* where *X* indicates the staff that the barline is on. SCORE creates the correct value and places it in P15.

New Letter Commands

COM

The COM command works as before, except that you may now combine files with different numbers of staves.

DEC

The DECombine command will now separate a file into smaller files with different numbers of staves.

H

Both the SI and V commands (used in previous versions) have been renamed to H to more accurately reflect the command's function, altering the height of the file. The H command has been improved so that you may add space between every staff in the file or between systems in the file (even if the systems have different numbers of staves).

VJ

SCORE now has a command to provide intelligent vertical justification based on the content on the staves. VJ will reduce the horizontal space between staves to a minimum distance (which is user-specifiable) but will avoid symbol collision. VJ considers both the vertical and horizontal distance between objects. See the Reference Manual chapter on Justification.

STUD

The STUD command is an adjunct to the LJ function. It is intended to be used in situations where the stems go in opposite directions (for example, in keyboard music). It is standard engraving practice to space the *stems* evenly (rather than the noteheads) in these situations, and STUD accomplishes this automatically. See the Reference Manual chapter on Justification.

Changing Views

HOME

Pressing HOME changes to Zoom = 1, with the top of the file visible in the work area (similar to pressing END, which jumps to the bottom of the file).

F9

Moves the image left

F10

Moves the image right

ZZ *X*

Select an object and type ZZ ENTER. SCORE changes to Zoom = 2 with the object centered in the display. If you specify a number after ZZ, SCORE changes to that percentage (ie., ZZ 4 will change to Zoom = 4).

The ZZ command will not function after altering any parameter of an object; you must finish editing the object and press ENTER to invoke ZZ again.

Typing ZZ when not in Edit Mode enters Edit Mode with the last object edited centered in the display.

SCORE now *scrolls* when editing to keep the current object centered in the display. Typing ZX will turn the scrolling off; ZZ turns it on.

New Mouse Features

Changing Views with the Mouse

You may now use the mouse to automatically increase magnification. Holding down the ALT key, click the left or middle mouse button on or near any item displayed. The magnification doubles, and the item is centered in the display. Repeated clicks of the left or middle mouse button will double the magnification in a similar manner. To reduce the magnification by half, click with the right mouse button. Repeated clicks of this button continue reduction of the magnification, although not by half when you get to very small zoom sizes. This works in all modes.

You may also select an *area* for magnification with the mouse. Hold down the ALT key and drag diagonally across

the area you wish to magnify. SCORE will increase the magnification so that the area indicated is enlarged to fill the display. This also works in all modes.

Using a Two-button Mouse

You may now simulate a middle-button click with a two-button mouse by holding down the CTRL key and clicking either mouse button. This is particularly useful when in edit mode and you wish to select different items.

Constraining Mouse Movement

You may now restrict mouse movement while in edit mode. Hold down the SHIFT key and select an item for editing with the mouse. Drag the item in a horizontal direction, and SCORE will not let you move the item vertically. Similarly, if you drag the item vertically, you will not be able to move it horizontally. You are restricted to whichever direction you move first. This works when using either the left or right buttons (in other words, when dragging the original item or a copy of it).

The PAGE Program

Extensive changes have been made to PAGE. You may now extract multiple-stave parts (such as piano parts, percussion parts, etc.). A simple graphic display has been added, and the menu structure has been redone. See The Reference Manual chapter on PAGE.

File Structure

SCORE automatically converts files to Version 3.0 from earlier versions. (You may notice some small alteration of tuplet brackets.) See The Reference Manual chapter on File Formats.

You may now have up to 32 staves per file. The Vector Limit has been extended to 31,000 vectors and 9,900 items

(which may vary depending on the available RAM). To facilitate this limit, SCORE now uses overlays for certain parts of the program (Input Mode, Text Mode, Edit Mode) which requires some swapping to disk. For this reason, a hard disk is required. Using a RAM disk or disk caching software will speed up the program's operation.

Index

G

H

I

J

L

M

N

O

P

Q

R

S

T

U

V

W

Z

San Andreas Press
Post Office Box 60247
Palo Alto, CA 94306
(415) 856-9394 (voice and FAX)