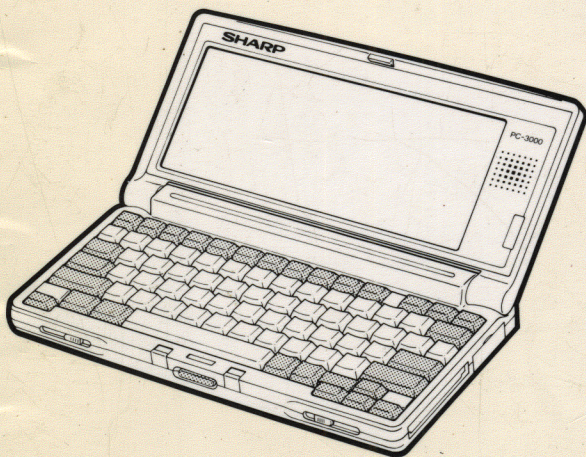# SHARP®

PERSONAL COMPUTER
PC-3000 SERIES

PC-3000

OPERATION MANUAL

PC-3000 SERIES

FCC STATEMENT

WARNING – FCC Regulations state that any unauthorized changes or modifications to this equipment not expressly approved by the manufacturer could void the user's authority to operate this equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

A shielded I/F cable is required to insure compliance with FCC regulation for Class B computing equipment.

Included with this computer are a serial conversion and a parallel conversion cable. These cables are provided to assure that the computer complies with FCC Class B certification.
For handling instructions of these cables, see Chapter 14 in this OPERATION MANUAL.

LIMITED USE LICENSE AGREEMENT

You should carefully read the following terms and conditions before using the Microsoft MS-DOS software and all other software provided with the computer (the "Software"). This is a legal document which constitutes the agreement between you, the end user, and Sharp Corporation for the use of the Software. Using the Software indicates your acceptance of the terms of this Agreement, which includes the Limited Use Software License and Limited Warranty.

LIMITED USE SOFTWARE LICENSE

In consideration of the license fee, which is a part of the price you paid for the computer, Sharp Corporation, as Licensor, grants to you, the Licensee, a non-exclusive software license to use the Software and related documentation supplied herein. The terms of this license are as follows.

1. You may use the Software on a single computer at a single location.

2. As the Licensee, you own the magnetic or other physical media on which the Software is recorded, but Sharp Corporation or its licensors retains title and ownership of the Software recorded on the original disk copies 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 thereof.

3. You and your employees and agents are required to protect the copyright of the Software and license for this Software. You may NOT distribute or otherwise make the Software or documentation available to any third party, by time-sharing or otherwise, without the prior written consent of Sharp Corporation. 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 Agreement.

4. You may NOT modify or alter the Software. Any portion of the Software that is merged into or used in conjunction with another software will continue to be the property of Sharp Corporation or its licensors and will be subject to the terms of this Agreement.

5. You are permitted to copy the Software for exclusive use as your working copy. Any such copy must contain the same copyright notice and proprietary marking as the original Software.

6. You may not transfer or assign the Software or this License to any other person without the prior written consent of Sharp Corporation. Any authorized transferee of the Software shall be bound by the same terms and conditions of this Agreement and, in such case your License is automatically terminated. In no event may you transfer, assign, rent, sell, or otherwise dispose of the Software on a temporary or permanent basis except as expressly provided herein.

7. This License is effective until terminated. This License will terminate automatically without notice from Sharp Corporation if you fail to comply with any

provision of this Agreement. Upon termination you shall destroy the Software together will all copies and modifications in any form.

8. The restrictions in this license are for the benefit of the party who holds title to any part of the Software.

SOFTWARE LIMITED WARRANTY

Sharp Corporation and its licensors provide the Software with no warranty and makes the Software and media available solely on an "AS IS" basis. In no event shall Sharp Corporation or its licensors be liable or in any way responsible for any incidental or consequential economic or property damage caused by using the Software. However, if a modified version of the Software is released within one year from the Software release, Sharp Corporation shall make reasonable effort to provide you with information concerning the modified version.

YOU ACKNOWLEDGE THAT YOU HAVE READ THIS AGREEMENT AND UNDERSTOOD IT, AND THAT BY USING THE SOFTWARE YOU AGREE TO BE BOUND BY ITS TERMS AND CONDITIONS. YOU FURTHER AGREE THAT, EXCEPT FOR SEPARATE WRITTEN AGREEMENTS BETWEEN SHARP CORPORATION AND YOU, THIS AGREEMENT IS THE COMPLETE AND EXCLUSIVE STATEMENT OF THE RIGHTS AND LIABILITIES OF THE PARTIES CONCERNED. THIS AGREEMENT SUPERSEDES ALL PRIOR ORAL AGREEMENTS, PROPOSALS OR UNDERSTANDINGS, AND ANY OTHER COMMUNICATIONS BETWEEN US RELATING TO THE SUBJECT MATTER OF THIS AGREEMENT.

Welcome

If you are new to the family of Sharp products, welcome. To all new owners of this computer, congratulations. You have purchased one of the most powerful and easy-to-use personal computers available today.

Using advanced technology, we packed the power of larger PCs into this compact pocket sized model. Your new Sharp computer features a superlative LCD with CGA emulation and a suite of built-in applications.

There are two models of this unit, each with a different memory configuration. Unless otherwise specified, descriptions in this manual apply to both models. The available model varies depending on countries.

For Your Records

For safekeeping and easy reference, fill in the model and serial numbers (from the back of the computer), as well as any other pertinent information in the space below.

Model number:

Serial number:

Date of purchase:

Place of purchase:

Password:

Contents

Opening the Box

When you open the packaging, you will find the following items:

- The Computer

- Three AA size batteries

- A Lithium battery

- Operation Manual (this manual)

- A registration card

If any of the above items are missing, contact your Sharp dealer.

About this Manual

This manual describes the operation of your new Sharp computer. We have designed this manual so that you can locate information quickly and easily. Each chapter begins with a title page that gives the major sections in the chapter.

Here is an overview of what to expect in each chapter:

Chapter 1 Starting with the Basics describes the features of your computer and explains how they work.

Chapter 2 Setting Up tells you what to do to get your computer ready for operation.

Chapter 3 Getting Started shows how to set up the operating system and internal disks for basic operation and how to customize the computer for your special needs.

Chapter 4 Introducing the Applications is a simple step-by-step illustration of using the built-in applications and accessories.

Chapter 5 Using Applications summarizes the common principles and techniques for using the applications and accessories.

Chapter 6 The Pop Up Menu describes the menu which you use to select applications, and the other accessories and applications displayed with it.

Chapter 7 Using MS-DOS provides an overview of the MS-DOS operating system and commands, and details the extra utilities provided.

Chapter 8 LapLink Utility describes how to use the LapLink utility for communications between your computer and another computer.

Chapter 9 The Address Book describes the application you can use to manage addresses and phone numbers.

Chapter 10 The Scheduler describes the application for organizing appointments and reminders.

Chapter 11 The Editor describes the application for preparing, editing and printing documents.

Chapter 12 The File Manager describes the application you can use to help organize your files.

Chapter 13 The Worksheet describes the application for preparing numerical analyses and forecasts.

Chapter 14 Options describes some of the optional extras available.

Appendices cover a variety of topics including maintenance and troubleshooting, keyboard layouts, and specifications.

What to Read

Before performing any of the tasks below, we recommend that you read the corresponding chapter(s) in the manual.

- Quick start — Chapters 1 to 3

- Setting up the computer — Chapters 2 to 3

- Using the applications — Chapters 4 to 6, and the relevant chapter 9 to 13

- Using MS-DOS and utilities — Chapter 7

- Using LapLink — Chapter 8

- Using options — Chapter 14

- Troubleshooting and general care of the computer — Chapters 1 to 2 and Appendix E to F

Manual Conventions

Throughout both manuals, we have used a set of style conventions as follows:

Keyboard Keys When referring to keys on the keyboard, the label appears in boldface as shown below.

Press **Enter** to end the command.

When referring to a combination of keys that are pressed simultaneously, the key labels are separated by hyphens as shown below.

Press **Ctrl-C** to interrupt execution of the current command or an MS-DOS batch file.

This means to hold down the **Ctrl** key and press **C** simultaneously.

Sample Prompts/Screens This manual contains sample prompts and screens that appear during operation of your computer, including entries that you type on the keyboard. These are printed in a typeface much like the one you will see on the screen. Screens of several lines may be enclosed in a frame, as shown below.

```
    xxxxxx bytes total disk space
    xxxxxx bytes available on disk

      xxxx bytes in each allocation unit
      xxxx allocation units available on disk

Volume serial Number is xxxx-xxxx

Format another (Y/N)?_
```

Notes and Cautions Icons and italic text are used for notes and cautions, to make important information stand out.

Note: Notes provide helpful hints or suggestions on ways of performing certain operations.

Caution: Cautions warn you when you might damage equipment or lose information if you do not follow a procedure very carefully.

1
Chapter

Starting with the Basics

The Hardware

The illustration below shows you what the standard computer looks like when closed.
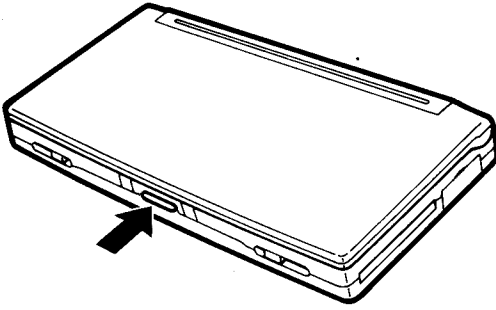
To open it, press the catch on the front of the computer and tilt the screen back. Here's how it looks when set up and ready to operate:
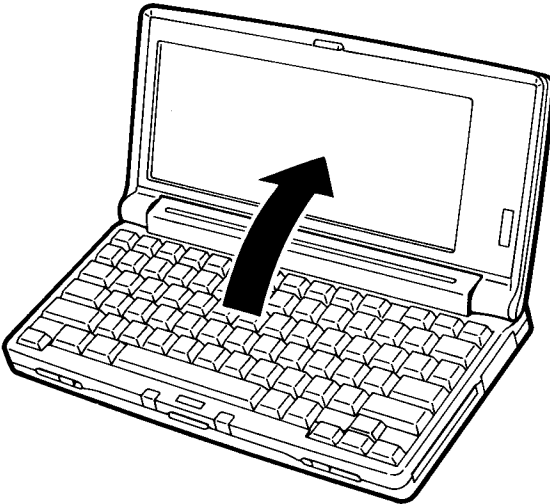
Let's take a closer look at each part of the computer.

Microprocessor

The microprocessor is the 'brain' of the computer. It processes data--or information--at speeds so fast, its performance is measured in millionths of a second. The processor handles information in binary code, using the digit 0 or 1. Any piece of information (e.g., a number or character) is represented by a string of zeros and ones. For example, the number 23 in binary is 10111. A 0 or 1 in the binary system is referred to as a bit, the smallest piece of the information handled by the processor. A byte is a group of 8 bits, and represents a single character or number, such as "H" or "9". The microprocessor in this computer is an 80C88 microprocessor, running at a clock speed of up to 10 MHz.

LCD Screen

The screen acts as a window where the computer sends information for you to view. Information typed at the keyboard, read from an IC memory card or a diskette, for example, is displayed on the screen. This computer displays text and graphics on a film supertwist LCD, giving true black-on-white contrast. It can emulate the IBM monochrome display adaptor (MDA) and color graphics adaptor (CGA), displaying colors as four shades of gray.

Resolution The screen displays a maximum resolution of 640 dots horizontally by 200 vertically, although the actual display resolution depends on the display mode selected using the SETUP command (see Chapter 7) and the modes used by your applications.

Screen Angle The screen is on a friction hinge, so you can adjust the position for any viewing angle from 0 (closed) to 180 degrees. Suitable angles are between 90 and 180 degrees to the horizontal.

Contrast Control You can also adjust the screen contrast to improve visibility under difficult lighting conditions. To increase the contrast, hold down the **Fn** key and press **F3** (**Contrast↑**) until the optimum setting is reached. To decrease the contrast hold down the **Fn** key and press **F4** (**Contrast↓**).

Indicators

There are five indicators on the right of the LCD screen which show the state of the drives and keyboard.

Card 1 Lights when IC memory card drive 1 (normally A:) is accessed.

Card 2 Lights when IC memory card drive 2 (normally B:) is accessed.

Caps Lock Lights when in Caps Lock mode.

Num Lock Lights when in Num Lock mode.

Scrl Lock Lights when in Scroll Lock mode.

Keyboard

You communicate with the computer by typing at the keyboard. Many of the keys work just like those on a regular typewriter. However, as you will see, some of the keys have special functions not available on a typewriter. This keyboard is based on the IBM 101/102-key enhanced keyboard layout.

U.S. English Keyboard Layout
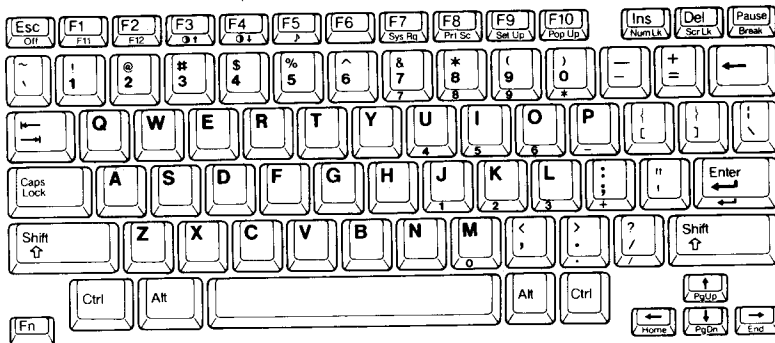
U.K. English Keyboard Layout
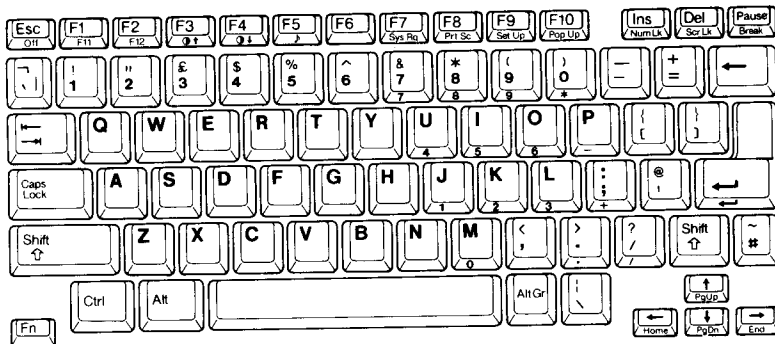
Additional key functions

Fn The **Fn** key is used to access numbers, characters or functions printed in blue on the front of the keys.

Off The **Off (Fn-Esc)** key turns off your computer. To turn on again, press any key and you will return to exactly what you were doing when you turned off.

Contrast Control The ◑↑ and ◑↓ keys are used to control the contrast of the LCD screen. ◑↑ (**Fn-F3**) lightens the screen and ◑↓ (**Fn-F4**) darkens the screen.

Key click Pressing the ♪ (**Fn-F5**) key toggles the key click sound on and off.

Set Up Pressing the **Set Up (Fn-F9)** key displays the Set Up Menu in the Pop Up Menu directly at any time, even if you are in a third party application program. To exit the Set Up Menu, press **Esc**.

Pop Up Pressing the **Pop Up (Fn-F10)** key displays the Pop Up Menu at any time, even if you are in a third party application program. To exit the Pop Up Menu, press **Esc**.

Connectors and Compartments

On the computer, there are four connectors which connect to various external devices and two compartments for batteries.

AC Adaptor Jack On the rear panel, is the AC adaptor jack. The optional AC adaptor CE-301V plugs into this jack to supply external power to the computer. See Chapter 14 for details of this option.

Expansion BUS Connector The expansion BUS connector is on the rear panel of the computer. Options such as the CE-301F 3 1/2" FDD unit can be connected to this. See Chapter 14 for details of this option.

The Main Battery Compartment Has a cover secured by a screw on the rear panel. It contains the main batteries which normally power the computer. For information on changing the batteries, see Chapter 2.

The Parallel (Printer) Port Is located behind a hinged cover on the right side panel. You can use this port to connect any device which uses a standard Centronics parallel interface, via the optional parallel conversion cable CE-301CB. For details of this option, see Chapter 14.

The Serial (RS-232C) Port Is located behind a hinged cover on the left side panel. You can use this port to connect any I/O devices such as a

mouse, LapLink cable, or external modem, via the optional serial
conversion cable CE-302CB. For details of this option, see Chapter 14.

The Backup Battery Compartment Has a cover on the bottom panel
which is secured by a screw and contains the Lithium battery which
provides backup power while changing the main batteries or if they fail.
For information on changing this battery, see Chapter 2.

Reset Switch Is a small switch on the bottom panel which you can use to
reset the computer and repeat the installation process. To press it, use a
pointed object like a ballpoint pen.

⚠ *Caution: Pressing the reset switch will erase all information from drive E!*

IC Memory Card Drives

There are two IC memory card drives, one on each side of the computer.
The one on the left side panel is drive 2 and the other one on the right
side panel is drive 1. You can use these drives to store your own data on
a RAM card, or run application programs supplied on an IC memory
card. For instructions on using IC memory cards, see Chapter 14.

Memory Organization

RAM RAM (Random Access Memory) stores data and application
software. You can write to or read from RAM freely. RAM size is
described by the amount of information (bytes) it can store. Symbols
often used for this are "K" and "M". One K byte (1 KB) represents 1024
bytes and one M byte (1 MB) represents 1024 K bytes. There are two
models of this computer, one with 1 MB standard memory, and one with
2 MB standard memory.

✓ *Note: The availability of models varies depending on the country.*

ROM ROM (Read Only Memory) contains factory-programmed
information, which remains stored even with the power off. You can
never change the contents of ROM. ROM in this computer contains the
operating system, utilities, and application programs.

Internal Disk Drives

This computer has three internal disk drives and two external drives to run programs from or save data to.

Drive C Is a ROM drive which contains the operating system, utilities, and application programs. You cannot write to or change this drive in any way.

Drive D Is a small RAM drive which is normally powered by the main batteries, but if those fail it can also be powered by the built-in Lithium battery. This drive is used by the built-in applications for their configuration data, the system diary, to do list file, undelete and clipboard buffers (all stored in D:\SYSTEM). There is some spare disk space which you can use like a conventional disk.

Drive E Is also a RAM drive, powered by the main batteries. When you change these batteries, the Lithium battery will also supply power to drive E, but only for about 3 minutes. You can use this drive for storing programs and data. Its size depends on how you chose to arrange the RAM during installation (this allows you to split the total RAM between main (program) RAM, drive E and Expanded (EMS) memory).

Note: The contents of these RAM drives is preserved when you turn off or reboot, unlike a conventional MS-DOS RAM drive produced using the RAMDRIVE.SYS device driver.

Using the Internal Drives

You can save your data to drive D and drive E freely. Drive D is quite small but well protected from power loss, so you should use it for your most important data. Drive E is not quite so robust, but may be much larger, so you will typically use it as your main working disk.

Caution: If you are storing important data on either RAM drive (but especially drive E), you should copy it to IC memory cards, a desktop computer, or floppy disks (using the optional floppy disk drive unit) at regular intervals to provide backup copies in case anything happens to it.

Formatting

Drive C does not need formatting since it is a ROM drive.

Drive D is formatted automatically during the initial install process. You can also format it by using the FORMAT command (see Chapter 7).

Drive E is formatted during the initial install process, with the disk space dictated by the memory arrangement you choose and how much memory is installed. For example, with 1 MB installed a typical configuration is 640 KB main DOS memory and 368 KB drive E, with no EMS.

If you want to change the size of drive E, run the INSTALL utility again.

⚠️ *Caution: Reformatting the RAM drives erases all user information from the disks, so it is not a step you should take lightly!*

Looking After the Internal Drives

Since the internal drives do not have any moving parts, they are mechanically very robust. To preserve the contents of the drive E, always replace the main batteries promptly at the first sign of battery failure. To preserve the contents of drive D, replace the Lithium battery at the recommended intervals. (See Chapter 2 for information on changing batteries.)

The Software

A computer system needs software before it can carry out any useful task. Without software, your computer is just a collection of electrical components. In order to use computer hardware for tasks like writing memos or balancing a checking account, software is necessary.

Software is a series of instructions that directs the computer to perform specific tasks. Generally, these instructions are loaded into main memory where they remain until the application program is exited or the system is rebooted.

In order to understand how software functions on the computer, think of three levels.
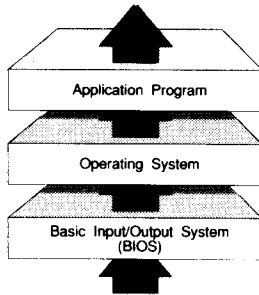
When the power is turned on, software and hardware begin to interact.

The BIOS

The BIOS (Basic Input/Output System) is stored in ROM on the system board. The BIOS controls the input/output functions of the hardware itself, according to calls from the operating system or application programs (BIOS calls).

Operating System

The operating system is a software program that manages the computer's resources, such as disk drives and printers. By performing these general routines, the operating system forms the base on which programming languages like applications programs can run. The operating system for this computer is MS-DOS, version 3.3 which is stored in ROM.

Application Programs

An application program helps you perform business and personal tasks such as word processing, spreadsheet analysis, and graphics presentations.

This computer contains the following eight useful application programs in ROM.

- Address Book

- Calculator

- Desk Clock

- Scheduler

- Editor

- File Manager

- To Do List

- Worksheet

These applications are all accessed and controlled from simple on-screen menus. Even if you have never used a computer before, you should find them easy to use and useful right away.

In addition, many of the application programs written to run with MS-DOS on IBM and compatible personal computers can be used with your computer.

2 Chapter

Setting Up

Guidelines & Precautions

- When using your computer always try to ensure that the temperature and humidity fall within the following ranges:

Temperature
Operating: 10°C to 35°C (50°F to 95°F)
Storage: -20°C to 60°C (-4°F to 140°F)

Relative Humidity (Noncondensing)
Operating: 20% to 80%
Storage: 10% to 90%

- Use a standard AC outlet when operating the computer with the optional AC adaptor. Make sure the outlet supplies the correct voltage for your computer.

- For information on how to install hardware options, see Chapter 14.

Installing the Main Batteries

If you are setting up for the first time, you must start setting up by installing the supplied batteries. If you are changing the batteries, you will need three AA-size alkaline manganese batteries.

To install the batteries:

- Use a coin or screwdriver to release the cover marked "Battery" from the back of the computer:
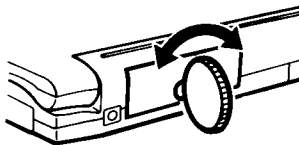
- If you are changing the batteries, pull the tape to help you remove the old batteries.

- Insert the new batteries carefully, observing the correct polarity (as shown on the label inside the compartment). Make sure that the tape is positioned behind the batteries so you can use it later to remove them.
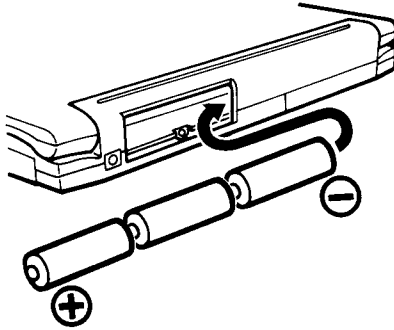
- Replace the cover and tighten it using a coin or screwdriver.

Installing the Backup Battery

If you have just purchased the computer, you should continue by installing the supplied Lithium backup battery. If you are replacing the battery, obtain a suitable replacement battery from your Sharp dealer.

- Turn the computer over and undo the screw from the circular backup battery compartment cover:
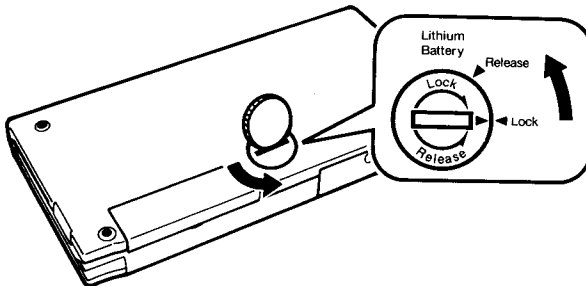
- If you are changing the battery, tilt the computer to tip out the old battery.
- Install the new battery carefully, observing the correct polarity.
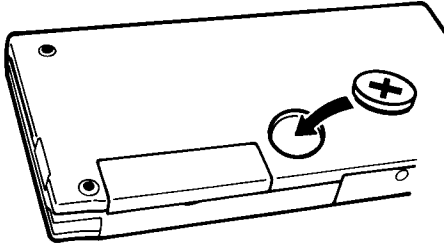
• Replace the cover and screw it tight.

Cautions when Changing Batteries

When the message "Main batteries low" or "Replace Lithium battery" appears on the screen, the main batteries have become too low to operate the computer or to backup the contents of the memory, so you need to change to new batteries.

Follow these guidelines to change the main batteries without losing the contents of memory:

• Before changing the batteries, turn off your computer.

• Do not remove both the main batteries and the Lithium battery at the same time, or you will lose all the data stored in the memory.

• The Lithium battery backs up the contents of drive E for only 3 minutes while the main batteries are not installed, so you must complete changing the main batteries within these 3 minutes.

• When replacing the Lithium battery, make sure that the main batteries are not depleted. If the main batteries are depleted, replace them before replacing the Lithium battery.

• Before removing the batteries for replacement, backup the important data stored in the computer i.e. copy it to an IC memory card.

• Always replace all three main batteries at the same time. Do not use old batteries and new ones together.

• Use only the specified Lithium batteries (CR2016).

⚠ *Caution: There is a possible danger of explosion if the batteries are incorrectly replaced. Replace only with the same or equivalent type, recommended by the equipment manufacturer. Discard used batteries according to the manufacturer's instructions.*

- For best results, use Duracell AA (MN1500) batteries for the main batteries.

Turning On

- Turn the computer the right way up and open it by pressing the catch. Tilt the screen to a comfortable angle.

- Press any key to turn the computer on. If you are installing the batteries for the first time, carry on setting up the computer as described in Chapter 3. If you have already set up your computer, it should show the same display as when you turned off and you can carry on with your work.

If a password is installed, the computer will display a window for you to enter the password when you turn on.

If the screen does not display anything, check that you have inserted the batteries correctly. Try another set of fresh batteries. If this does not help, contact your Sharp dealer.

Turning Off

There are three ways to turn off the computer:

- Press **Fn-Esc**.

- Press **Esc** at the Pop Up Menu and select Switch off.

- Type OFF and press **Enter** at the MS-DOS prompt.

This computer is designed with a resume function, which returns you to exactly the same state as when you turned off, when you turn on again. Turning off does not lose anything from the computer memory.

3
Chapter

Getting Started

System Start-up

If you have not already done so, install the Lithium and main batteries, as described in Chapter 2. Turn on the computer (press any key) and it will perform its initial self-test, displaying a series of messages like this:

```
DIP 80C88A-BIOS Version x.xxx
Copyright (c) DIP Research and Sharp Corp. 1991
All rights reserved
xxxxK PSRAM Test OK
xxxxK SRAM  Test OK
```

Press any key and the initial installation process will begin so you can set up your computer to suit the way you want to work.

If you see any of these messages, turn off the computer and contact your Sharp dealer:

```
PSRAM Test Failure xxxx:xxxx
SRAM  Test Failure xxxx:xxxx
POST Failure - xxxx
```

Initial Installation

The first screen asks you to select your language:

```
============ ↑↓ ============
English              Welcome!
Français              Bienvenue!
Deutsch              Willkommen!
Italiano             Benvenuto!
Nederlands             Welkom!
Español           ¡Bienvenido!
Svenska             Välkommen!
======= Press <─┘ to continue ... =======
```
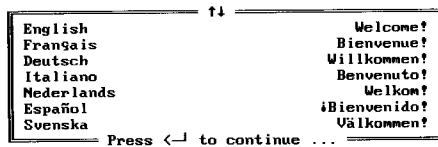
Press the **Up** or **Down Arrow** key until your language is selected, then press **Enter**. The next screen asks you to select the keyboard type:

```
======== Keyboard Selection ========
There are two possible keyboards. Choose the
picture showing the shape of the Enter key:



      ┌────┐                  ┌────────┐
   ┌──┘    │                  │  ◄───┘ │
   │ ◄───┘ │                  └────────┘
   └───────┘

      European              USA
```
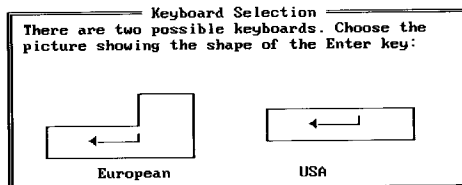
Check which key resembles your keyboard and press the **Right Arrow** or **Left Arrow** key to select the right one, then press **Enter**.

The next screen asks you to select the correct keyboard layout by selecting your country from a list:

```
══════════════════ Keyboard ══════════════════
English                                    (UK)
American                                   (US)
German                                     (GR)
French                                     (FR)
Italian                                    (IT)
Spanish                                    (SP)
Portuguese                                 (PO)
Swedish                                    (SU)
Finnish                                    (SV)
Danish                                     (DK)
Norwegian                                  (NO)
Swiss (French)                             (SF)
Swiss (German)                             (SG)


──────── The top line of your keyboard should look like this: ────────

  ⌐¬   !    "    £    $    %    ^    &    *    (    )    _    +
   ¦    1    2    3    4    5    6    7    8    9    0    -    =    ◄──
```

The countries are listed in alphabetical order. Select your country from the list by pressing **Down Arrow** until it is highlighted and then press **Enter**. If your country is not displayed, keep pressing **Down Arrow** to see the rest of the list. You can also select your country by typing the first letter of its name. If there are several items with the same initial, typing the first letter will move the cursor to the next item.

Now, choose your country code and select the date and time format to use:

```
══════════════════ Country Code... ══════════════════
Australia                                  (061)
Belgium                                    (032)
Canada (English)                           (001)
Canada (French)                            (002)
Denmark                                    (045)
Finland                                    (358)
France                                     (033)
Germany                                    (049)
Italy                                      (039)
Latin America                              (003)
Netherlands                                (031)
Norway                                     (047)
Portugal                                   (351)
Spain                                      (034)
Sweden                                     (046)
Switzerland (French)                       (041) ↓

─────────── Country defaults if you select this code: ───────────
Date format                    DD-MM-YYYY
Time format                    HH:MM (12 hour)
```

Again, select your country from the list e.g. by pressing **Down Arrow**
until it is highlighted. Check that the top row of keys on your keyboard
matches the ones displayed, then press **Enter**.

The next screen invites you to type ownership details, which will be
displayed if you use the password facility:

```
══════════════ Ownership Details ══════════════
Please enter your name and other details.
They can be modified later. Press ◄┘ to move
to the next line.

Message
Name
Address

Tel.
```

Type a message on the first line, such as "This machine belongs to" or "If
found, contact the following person for a REWARD", then type your
name, address and telephone number on the subsequent lines. Press
Enter when you have finished each line.

If you make a typing error, press **Backspace** to delete back to it and
retype. If you see an error on another line, use the **Arrow** keys to move to
the line.

When you press **Enter** on the telephone number line, you are asked for
the time and date, to set the computer clock and calendar:

```
══════════════ Date and Time ══════════════
Please enter the current date and time below,
using the formats (DD-MM-YY) and (HH:MM)

Date            5-04-1991
Time            12:09p
```

Type the date in the format shown and press **Enter**, then type the time,
using the 24-hour clock. For example, if it is ten thirty in the morning,
type 10 : 30. If it is ten past six in the evening, type 18 : 10. If you make a
mistake, press **Backspace** to delete the text and try again. When the time
and date are correct, press **Enter**.

The following message is displayed:

```
╔══════ Initial Installation Complete ══════╗
║ If you wish to make further changes, select ║
║ the option CONTINUE WITH INSTALLATION.     ║
║                                            ║
║ Otherwise, select INSTALL NOW.             ║
║                                            ║
║     Install now                            ║
║                                            ║
║     Continue with installation             ║
║                                            ║
║                                            ║
╚════════════════════════════════════════════╝
```

Select an option with the **Up** or **Down Arrow** key and press **Enter**:

- If you're in a hurry, or not sure what you want, select Install now.

- If you want to set up your system now, with the maximum amount of help, select Continue with installation.

The Install Now Option

The Install now option performs the rest of the setup for you. After a few seconds the computer will reboot and then display the 'Pop Up Menu'. For details of the Pop Up Menu and the facilities at your disposal, see Chapters 4 to 6.

If this is the first time you've been through the install process, you'll have the default configuration: CGA screen mode, 640KB program (main) memory, RAM drive E using all the remaining memory (e.g. 368KB with 1 MB model), and no EMS memory.

The Continue Option

The Continue with installation option allows you to examine, read about, or change any of the setup options, so you can select the exact configuration that suits you. If you select it, you will see the Configurable Options screen:

```
========================= Configurable Options =========================
Change language...
Ownership details...
Physical keyboard type                                        European
Country code...                                         United Kingdom
Keyboard...                                                    English
Files                                                              32
Buffers                                                            32
Startup after reboot in...                                     Pop Up
DOS command prompt                                               $p$g
Path                                                  C:\UTILS;C:\DOS
Install ANSI.SYS?                                                   No
Password...                                                        No
Character set                                                 Default
Memory configuration  [Program=640KB Ramdisk=368KB EMS=0KB]    =1008KB



=============================== Help ===============================
Allows you to select another language.


```

The top area (or *window*) provides a menu of the options which you can change, with the current setting for each one.

The bottom area (or *window*) provides an explanation of the currently selected option, including illustrations of the effects of any changes you might make.

To select an option you're interested in, simply use the **Up** or **Down Arrow** keys, then read the explanation in the help window. You can also select an option by typing its first letter. If there are several options with the same first letter, this will move the cursor to the next one.

To change the option, press **Enter** and reply to the prompts, pressing **Enter** to select. The following additional notes may also help you make your decisions:

- Change language, Ownership details, Physical keyboard type, Country code and Keyboard allow you to change the selections you made during the initial install process.

- Leave Files and Buffers set to their defaults until you encounter problems using a third party application.

- Startup after reboot in offers you this menu:

```
┌─ Startup after reboot in... ─┐
│ Pop Up                       │
│ File manager                 │
│ DOS prompt                   │
└──────────────────────────────┘
```

If you mainly intend to use the built-in applications, Pop Up is probably best. If you want to use the built-in applications, third party applications and DOS commands, File manager is probably best. If you are an experienced user, you'll probably prefer DOS prompt.

- Select `DOS command prompt` if you want to change the information displayed at the DOS prompt and edit the prompt as described in the help window.

- Select `Path` to edit the DOS search path, for example, to add a directory which contains a third party application.

- `Install ANSI.SYS?` - leave this set to `No` unless you are using a third application which you know requires it, as it consumes extra memory and is not needed by most applications.

- `Password` - select this option to define an access password to help prevent anyone else from using your computer. It will prompt you for the password, which may be up to 8 characters. When you press **Enter** it will ask you to type it again, for confirmation.

  (If this option is set to `Yes`, select it again to turn off the password. To change the password, select it twice and then choose the `Change password` option. You need to know the old password to change it.)

- `Character set` - leave this set to `Default` unless you want to display the Scandinavian symbols.

- `Memory configuration` - select this option to change how the system RAM is split, between program RAM, RAM disk (drive E) and EMS. This will display this menu:

  ```
  ═══ Memory configuration ═══
  Program                 640KB
  Ramdisk                 368KB
  ─────────────────────────────
  EMS                       0KB
          + - ↵
  ```

  To change a setting, move to it by using **Up** or **Down Arrow**, then press **+** to increase it by 16 KB, or **-** to decrease it by 16 KB. Press **Esc** when you are finished. Note that any memory which is not used for programs or the RAM disk is converted to EMS memory:

  - If you are mainly using the built-in applications and only have 1 MB of memory fitted, you can reduce `Program` (e.g. to 256 KB) and increase the `Ramdisk`, to store more files.

  - If you are going to use third party applications, you will probably want to leave `Program` set to the maximum (640 KB), as many third party applications require a lot of memory.

  - Only set up EMS (Lotus Intel Microsoft Expanded Memory Specifications) if you are using a third party application which needs it.

  ⚠ *Caution: If you change the* `Memory Configuration` *setting, all the contents of drive E is lost!*

Once you have finished, press **Esc** and select the `Install now` option. If you have made any changes, you will be prompted with:

```
┌─ Modify Files? ─┐
│ Yes             │
│ No              │
└─────────────────┘
```

To accept the changes, select `Yes` (e.g. press **Y**). To cancel them, select `No`.

If you have made major changes, the computer must reboot to use them, so the following will be displayed:

```
┌─ Reboot? ─┐
│ Yes       │
│ No        │
└───────────┘
```
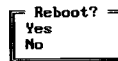
To reboot, select `Yes` (e.g. press **Y**). To prevent the reboot, select `No` (some changes will not take effect until you reboot, e.g. press **Ctrl-Alt-Del**).

The computer will run the 'shell' which you selected. For information on Pop Up (the Pop Up Menu) see Chapter 6. For information on File Manager see Chapter 12. For information on DOS, see Chapter 7.

Customizing Your System

You can customize your computer any time after completing the initial installation process, as follows:

To change your configuration options:

- Type `INSTALL` and press **Enter**, at the DOS prompt or using the File Manager `Exec` option. This will display the `Configurable options` screen, with your current settings. Make any changes and then exit as before.

- OR, to configure low power mode, sounds, screen inverse, processor speed, character set, or the serial port, press the **Set Up** (**Fn-F9**) key, or use the Pop Up Menu `Setup the machine` option, in the Options menu (see Chapter 6) or the SETUP command, at the DOS prompt (see Chapter 7). The SETUP command also allows you to select other screen modes, such as 40 column.

- OR, to configure the language and sorting order, reserve memory for applications, or use passwords, use the Pop Up Menu `Programs options` option, in the Options menu (see Chapter 6).

To repeat the entire installation process:

- Type `REBOOT /F` and press **Enter**, at the DOS prompt or using the File Manager `Exec` option.

- OR press the reset switch on the bottom panel.

⚠️ *Caution: This will delete all information from drive E.*

If you are an experienced user:

- To change the country code, files, buffers or device drivers, edit the D:\CONFIG.SYS file, e.g. using the Editor (see Chapter 11).

- To change the prompt, path or shell, edit the D:\AUTOEXEC.BAT file, using the Editor.

Note that you cannot alter aspects such as memory configuration by editing these files: you must repeat the installation process to do this.

4

Chapter

Introducing the Applications

Introduction

This chapter introduces several of the applications by showing how you could use them to help set up and prepare for a meeting. To get the most from it, work through each step on your computer: it should only take about 30 minutes.

While this chapter introduces many different aspects of using the applications, don't bother to try to **learn** about these now. Simply use this opportunity to get the flavor of using your computer. (The next chapter summarizes these principles for you.)

If you are working through this example, don't feel you have to perform each step in turn without stopping. You can stop when it suits you, even turn off, and then carry on again when convenient!

Setting the Scene

You've been asked to set up a meeting tomorrow between yourself, John Smith (in the Marketing Department) and Anne Harvey (in the Planning Department), to discuss sales targets for the next year.

You need to:

• Talk to John and Anne to arrange a convenient time

• Book the appointment in your diary

• Draft some proposals

• Write an agenda

• And remember to go to the meeting!

Armed with your new computer you begin...

Updating your Address Book

Let's start by adding John and Anne's details to your address book.

If you have just finished installing your computer, the Pop Up Menu should be displayed, like this:

```
┌── Choose Activity ──┐
║ File manager        ║
║ Address book        ║
║ Scheduler           ║
║ Editor              ║
║ Worksheet           ║
║ Calculator          ║
║ Desk clock          ║
║ To do list          ║
║ Options...          ║
└─────────────────────┘
```
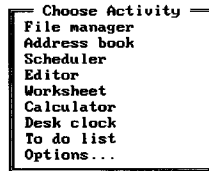
(If the DOS prompt is displayed instead (e.g. C:\>), type POPUP and press **Enter** to display the Pop Up Menu. If the File Manager is displayed, press **Esc** and then **Y** to exit to DOS, then type POPUP **Enter**.)

• Select Address book from the Pop Up Menu by pressing **A**, or by using **Up** or **Down Arrow** to move the cursor to it and pressing **Enter**. This will display your address book, like this:

```
┌ UNNAMED.ADR ──────────────── #0 ┐┌──────── Card Details ────────┐
│                                 ││                              │
│                                 ││                              │
│                                 ││                              │
│                                 ││                              │
│                                 ││                              │
│                                 ││                              │
│                                 ││                              │
│                                 ││─────────────────────── INS │
│                                 │└──────── Dial Numbers ────────┐
│                                 ││                              │
│                                 ││                              │
│                                 ││                              │
│ Mon 01 Jul 1991 12:05 ──────────┘└──────────────────────────────┘
 1:Help  2:Search 3:Add  4:Undo  5:Mark  6:Cut  7:Copy  8:Paste 9:Cards 10:Menu
```
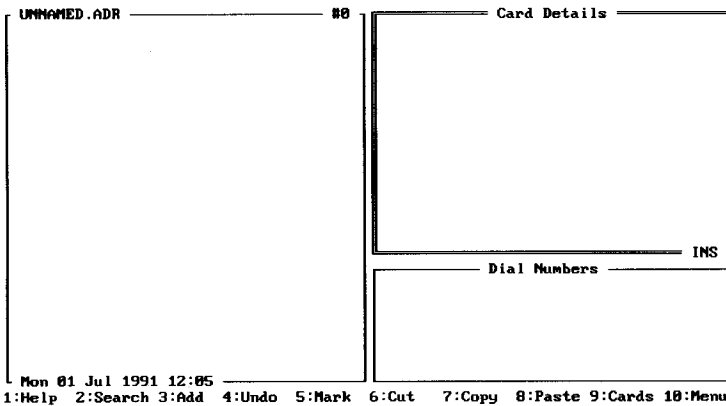
As you can see, it's empty! (If you've selected the wrong application, press **Esc** to return to the Pop Up Menu and try again.)

• Type the name, John Smith. Correct any errors by using **Backspace**.

• To add a phone number, type it after the name on the same line after a space. John's telephone number is 123456, so type 123456 and press **Enter**.

• Now type the address, pressing **Enter** at the end of each line.

• When you've finished, the entry should look like this:

```
┌ UNNAMED.ADR ──────────────── #1 ┐  ┌═══════════ Card Details ═══════ ≈ ┐
│ John Smith  123456                │  │ John Smith  123456                 │
│                                   │  │ Marketing Department               │
│                                   │  │ AAA Inc                            │
│                                   │  │ 345 West St                        │
│                                   │  │ Baltimore                          │
│                                   │  │                                    │
│                                   │  │                                    │
│                                   │  │                                 INS│
│                                   │  ├─────────── Dial Numbers ───────────┤
│                                   │  │ 123456                             │
│                                   │  │                                    │
│                                   │  │                                    │
│ ┌ Mon 01 Jul 1991 12:06 ──────    │  │                                    │
│ 1:Help  2:Search 3:Add  4:Undo  5:Mark  6:Cut   7:Copy  8:Paste 9:Cards 10:Menu
```

- You've finished this first entry, so press **F3** (Add) to add this and input another one. This will add John Smith to the list on the left, and display another blank entry on the right.

- Type the second name, `Anne Harvey`, followed by her phone number.

- You've got two phone numbers for Anne: 666222 (her own office) and 444333 (head office). Type the first as `666222 [local]` and the second as `444333 [main]`, then press **Enter**. Remember to type these all on the same line as her name. (The line scrolls sideways as you type because it's too long to display in its entirety.)

- Type Anne's address, pressing **Enter** at the end of each line.

- You've finished the second entry, so press **Esc** to return to the list window and notice that they're there:

```
┌ UNNAMED.ADR ════════════════ #2 ┐  ┌─────────── Card Details ─────── ≈ ┐
│ Anne Harvey 666222 [local] 444333 [→│  │ Anne Harvey 666222 [local] 444333 [→│
│ John Smith  123456                │  │ Planning Department                │
│                                   │  │ AAA Inc                            │
│                                   │  │ 2222 Prospect Place                │
│                                   │  │ Baltimore                          │
│                                   │  │                                    │
│                                   │  │                                    │
│                                   │  │                                    │
│                                   │  │                                    │
│                                   │  │                                 INS│
│                                   │  ├─────────── Dial Numbers ───────────┤
│                                   │  │ 666222 [local]                     │
│                                   │  │ 444333 [main]                      │
│ ┌ Mon 01 Jul 1991 12:08 ══════    │  │                                    │
│ 1:Help  2:Search 3:Add  4:Undo  5:Mark  6:Cut   7:Copy  8:Paste 9:Cards 10:Menu
```

Notice that Anne's name is listed before John's, because the list is sorted into alphabetical order automatically.

Agreeing on a Time

To arrange a convenient time for the meeting, let's phone John and Anne. Your computer can help here by displaying the numbers for you:

- Press **Down Arrow** to pick out John's entry with the highlight and his phone numbers will be displayed in the Dial Numbers window:

```
┌──────────── Dial Numbers ────────────┐
│ 123456                                │
│                                       │
│                                       │
│                                       │
└───────────────────────────────────────┘
```
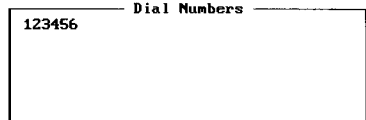
- Similarly, to contact Anne, press **Up Arrow** to select her entry and the Dial Numbers window will list her telephone numbers:

```
┌──────────── Dial Numbers ────────────┐
│ 666222 [local]                        │
│ 444333 [main]                         │
│                                       │
│                                       │
└───────────────────────────────────────┘
```
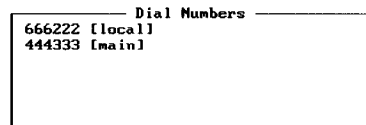
Saving your Address Book

To store your address book, you can use the File Save command:

- Press **F10** to display the Main menu:

```
┌─ Address Book ─┐
│ Files...       │
│ Search         │
│ Cards select   │
│ Print...       │
│ Options...     │
└────────────────┘
```

- You want to create a file, so press **F** to select the Files menu:

```
┌──── Files ────┐
│ New           │
│ Retrieve...   │
│ Save as...    │
│ Merge...      │
│ Load backup   │
│ Write selected...│
└───────────────┘
```
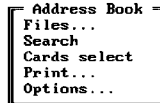
- Press **S** to select the Save command and you will be offered the current name:

```
┌════════ Save ════════┐
║ File: UNNAMED.ADR    ║
└──────────────────────┘
```
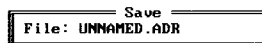
- To give it a better name, simply type the name and press **Enter**. For example, type OFFICE and press **Enter**. This will store the address book under this new name.

Updating your Schedule

After talking with John and Anne you've decided to hold the meeting at half past ten tomorrow morning. Let's add it to your diary:

• Since you want to use another application, press **Esc** to return to the Pop Up Menu. (Depending which window you are in you may need to press this two or three times).

• Once the Pop Up Menu is displayed, select the `Scheduler` option: either type its first letter **S**, or move the highlight to it using **Up** or **Down Arrow** and press **Enter**.

• This displays a calendar, with today's date flashing, and a diary which is open to today's page, like this:

```
┌ D:\SYSTEM\DIARY.DRY ═══════════════════════════════════════════════ 0 ┐
│   Mon  Tue  Wed  Thu  Fri  Sat  Sun    Wk  │                                    │
│ ─────────── June 1991 ───────────         │─────────── Monday  1 July 1991 12:11p│
│                          1    2    22  │▶   6:00a                             │
│    3    4    5    6    7    8    9    23  │    7:00a                             │
│   10   11   12   13   14   15   16    24  │    8:00a                             │
│   17   18   19   20   21   22   23    25  │    9:00a                             │
│   24   25   26   27   28   29   30    26  │   10:00a                             │
│                                          │   11:00a                             │
│ ─────────── July 1991 ───────────        │   12:00p                             │
│    1    2    3    4    5    6    7    27  │    1:00p                             │
│    8    9   10   11   12   13   14    28  │    2:00p                             │
│   15   16   17   18   19   20   21    29  │    3:00p                             │
│   22   23   24   25   26   27   28    30  │    4:00p                             │
│   29   30   31                            │    5:00p                             │
│                                          │    6:00p                             │
│ ─────────── August 1991 ───────────      │    7:00p                             │
│                     1    2    3    4    31 │    8:00p                             │
│    5    6    7    8    9   10   11    32  │                                      │
│   12   13   14   15   16   17   18    33  │                                      │
│   19   20   21   22   23   24   25    34  │                                      │
│   26   27   28   29   30   31             │                                      │
│ Mon 01 Jul 1991 12:11 ═══════════════════════════════════════════ INS │
│ 1:Help  2:Search 3:Zoom 4:Undo  5:Mark  6:Cut   7:Copy  8:Paste 9:Alarm 10:Menu
```

• To select the next day's page from your diary, simply press **Right Arrow** once and then press **Enter**. This will take you to the diary.

• The appointment is at half past ten, so type `10:30a`, a space, and a description, then press **Enter**. For example: type `10:30a Meeting with AH and JS` and press **Enter**.

- This will add the appointment to the diary, like this:

```
 ┌ D:\SYSTEM\DIARY.DRY ─────────────┐  ┌──────────────────────────────── 1 ≈ ┐
 │   Mon Tue Wed Thu Fri Sat Sun    Wk│  │            Tuesday   2 July 1991 10:30a │
 │ ───────────── June 1991 ─────────  │  │   6:00a                                 │
 │                        1    2    22│  │   7:00a                                 │
 │   3    4    5    6    7    8    9  23│  │   8:00a                                 │
 │  10   11   12   13   14   15   16  24│  │   9:00a                                 │
 │  17   18   19   20   21   22   23  25│  │  10:00a                                 │
 │  24   25   26   27   28   29   30  26│ ► 10:30a Meeting with AH and JS           │
 │ ───────────── July 1991 ──────────  │  │  11:00a                                 │
 │   1    2    3    4    5    6    7  27│  │  12:00p                                 │
 │   8    9   10   11   12   13   14  28│  │   1:00p                                 │
 │  15   16   17   18   19   20   21  29│  │   2:00p                                 │
 │  22   23   24   25   26   27   28  30│  │   3:00p                                 │
 │  29   30   31                       │  │   4:00p                                 │
 │ ───────────── August 1991 ────────  │  │   5:00p                                 │
 │                   1    2    3    4  31│  │   6:00p                                 │
 │   5    6    7    8    9   10   11  32│  │   7:00p                                 │
 │  12   13   14   15   16   17   18  33│  │   8:00p                                 │
 │  19   20   21   22   23   24   25  34│  │                                         │
 │  26   27   28   29   30   31        │  │                                         │
 └ Mon 01 Jul 1991 12:11 ─────────────┘  └──────────────────────────────── INS ┘
   1:Help  2:Search 3:Zoom 4:Undo  5:Mark  6:Cut   7:Copy  8:Paste 9:Alarm 10:Menu
```
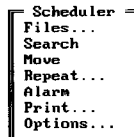
(Of course, you will see **tomorrow's** date!)

- To make sure you're ready for the meeting, let's also set an alarm, which will warn you in good time:

- Type 10:00a Get ready for meeting! and press **Enter** to add the time to your diary, then press **F9** (Alarm). This will display a musical note symbol next to the appointment, to show that an alarm is set.

Storing the Diary

To store your diary, you can use the File Save command, exactly as described for the Address Book:

- Press **F10** to display the Main menu:

```
┌─ Scheduler ─┐
│ Files...     │
│ Search       │
│ Move         │
│ Repeat...    │
│ Alarm        │
│ Print...     │
│ Options...   │
└──────────────┘
```

- You want to create a file, so press **F** to select the Files menu:

```
┌═ Files ═┐
│ New          │
│ Retrieve...  │
│ Save as...   │
│ Merge...     │
│ Load backup  │
└──────────────┘
```
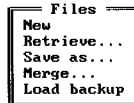
- Press **S** to select Save as and you will be offered the current name:

```
┌──────── Save ════════┐
│ File: D:\SYSTEM\DIARY.DRY │
└──────────────────────────┘
```
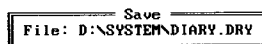
• Accept the current name, by pressing **Enter**.

Preparing a Forecast (Worksheet)

As a basis for discussion, you'd like a projection for sales per region, based on sales for previous years. While you could use the built-in calculator, this sort of repetitive calculation is easier with a spreadsheet:

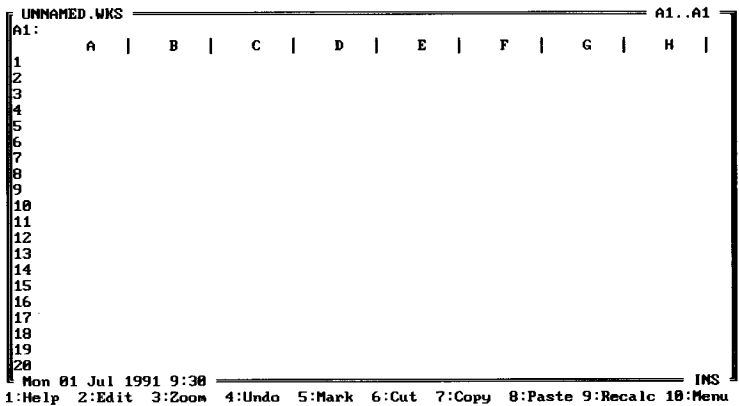• Press **Esc** twice to return to the Pop Up Menu.

• When the Pop Up Menu is displayed, select Worksheet (e.g. press **W**) and you will see:

```
┌ UNNAMED.WKS ═══════════════════════════════════ A1..A1 ┐
│A1:                                                      │
│        A  │  B  │  C  │  D  │  E  │  F  │  G  │  H  │   │
│1                                                        │
│2                                                        │
│3                                                        │
│4                                                        │
│5                                                        │
│6                                                        │
│7                                                        │
│8                                                        │
│9                                                        │
│10                                                       │
│11                                                       │
│12                                                       │
│13                                                       │
│14                                                       │
│15                                                       │
│16                                                       │
│17                                                       │
│18                                                       │
│19                                                       │
│20                                                       │
│ Mon 01 Jul 1991 9:30 ═══════════════════════════ INS   │
│ 1:Help  2:Edit  3:Zoom  4:Undo  5:Mark  6:Cut  7:Copy  8:Paste 9:Recalc 10:Menu │
```

This is a blank spreadsheet. It consists of a grid of rectangular cells. The columns are called A, B, C, etc. The rows are called 1, 2, 3, etc. A cell is named after its row and column so that the top left cell is A1, the next one to the right is B1, while the next one down is A2, etc.

• Copy the following information into the spreadsheet:

```
          Sales 89   Sales 90   Growth     Est 91
North     2000       2210
South     1400       1450
East      1700       2600
West      1600       1800
```

• To type the first line, press **Right Arrow** once to move the cursor to the second cell across, B1, and type Sales 89. Then press **Right Arrow** again to move to C1 and type Sales 90, and so on.

- To type the second line, move to A2 (press **Left Arrow** four times and **Down Arrow** once), then type `North`, **Right Arrow**, `2000` **Right Arrow**, `2210`.

- Type the remaining lines in a similar manner.

- Use **Backspace** to correct any errors while typing a cell. If you notice the error later, use the arrow keys to move to the cell and press **Enter** or **F2**. This will display its contents on the top line; use **Left** or **Right Arrow** to move through the line, and type the corrections or use **Backspace** or **Del** to delete. Press **Enter** to store the changes.

- Now you are ready to calculate the growth rate, which is:

$$\frac{\texttt{sales for 1990 - sales for 1989}}{\texttt{sales for 1989}}$$

Or, using cell names, the growth rate for the North is:

$$\frac{\texttt{C2 - B2}}{\texttt{B2}}$$

- In a spreadsheet you use / for division, so to display the growth rate, move to cell D2, type `(C2-B2)/B2` and press **Enter**.

- This displays a growth rate of `0.105`. While this is correct, it would be easier to interpret if displayed as a percentage. To do this, change the cell's format:

  - With the cursor in D2, press **F10** and type `RF` to select the Range Format command.

  - Press **P** to select `Percent` and press **Enter** to accept 2 decimal places.

  - Press **Enter** again and the growth rate will be displayed as `10.50%`.

- You could now type (and format) a similar formula for each of the other regions, in D3, D4 and D5, but to save time and effort, let's **copy** D2 instead:

  - With the cursor in D2, press **F10** and type `RC` to select the Range Copy command and a box will be displayed around D2:

```
 UNNAMED.WKS
D2: (P2) (C2-B2)/B2
         A  |   B   |   C   |   D   |   E   |   F  |
1             Sales 89 Sales 90           Est 91
2  North        2000     2210 | 10.50|
3  South        1400     1450
4  East         1700     2600
5  West         1600     1800
6
```

- Press **Enter** to copy D2.

- Press **Down Arrow** and a box will appear around D3. Press .
  (period) and then press **Down Arrow** twice more to stretch it to D5:

```
UNNAMED.WKS
D5: (P2)
          A   |    B    |    C    |    D    |    E   |   F   |
         1        Sales 89 Sales 90 Growth   Est 91
         2  North      2000     2210┌───────┐
         3  South      1400     1450│       │
         4  East       1700     2600│       │
         5  West       1600     1800│       │
         6                      └───────┘
```

- Press **Enter** to copy the formula to these cells:

```
UNNAMED.WKS
D2: (P2) (C2-B2)/B2
          A   |    B    |    C    |    D    |    E   |   F   |
         1        Sales 89 Sales 90 Growth   Est 91
         2  North      2000     2210   10.50%
         3  South      1400     1450    3.57%
         4  East       1700     2600   52.94%
         5  West       1600     1800   12.50%
         6
```

Note that the correct entries in the table are used, even when you
move a formula.

- Now, to estimate the sales per region for 1991, by assuming the same
  growth rates, you can use:

  ```
  sales for 1990 x (1 + growth rate)
  ```

  Or, in the format that a spreadsheet understands, the estimate for the
  Northern region is:

  ```
  (C2*(1+D2))
  ```

  Note that you must start the formula with a bracket to show that
  you're typing a formula, not text.

- Type this formula in cell E2 and it will be displayed as 2442.05. This
  is not the ideal format for an estimate, so let's hide the decimal places:

  - With the cursor in E2, press **F10** and type RF to select the Range
    Format command.

  - Press **F** to select Fixed, then type 0 and press **Enter** to specify 0
    decimal places.

  - Now press **Enter** and the estimate will be displayed as 2442.

- Now, copy cell E2 to cells E3 through E5, just like you did for cell D2,
  and you should see:

```
UNNAMED.WKS
E2: (F0) (C2*(1+D2))
        A    |    B    |    C    |    D    |    E    |    F    |
1            Sales 89 Sales 90 Growth    Est 91
2  North        2000     2210    10.50%    2442
3  South        1400     1450     3.57%    1502
4  East         1700     2600    52.94%    3976
5  West         1600     1800    12.50%    2025
6
```

The sales projection is complete, so let's store it:

- Press **F10** and type `FS` to select the Files Save command and you will be offered the current name:

```
━━━━━━ Save ━━━━━━
File: UNNAMED.WKS
```

- To help you remember what this spreadsheet is for, let's give it a more helpful name. Type `PROJECT` and press **Enter** to store the spreadsheet under this new name.

Finally, let's print three copies of the spreadsheet, for your meeting:

- Press **F10** and then **P** to display the Print menu:

```
━━━━━━ Print ━━━━━━
Range          A1..E5
Copies              1
Line spacing   Single
Margins...
Headers...         On
Footers...         On
Use printer... Default
Settings...
Go!
```

- Press **C** to select the `Copies` option, type 3 and press **Enter**.

- If you don't want to print, press **Esc** to cancel the operation.

- If you've got a printer connected and want to print, press **G** to select `Go!` and printing should begin.

  If printing does not seem to work, you may need to change the printer settings. Press **Esc** to cancel printing and skip this step for now. (For information on printer settings, see *Using Printing* in Chapter 5.)

Producing the Agenda (Editor)

Now, let's prepare an Agenda for the meeting, using the Editor:

- Press **Esc** to display the Pop Up Menu.

- Select `Editor` (press **E** or move the cursor to `Editor` and press **Enter**) and you will see a screen like this:

```
 UNNAMED.TXT ═══════════════════════════════════════ L:1 C:1 M:64 P:1
◄




















Mon 01 Jul 1991 12:15 ═══════════════════════════════════════ INS
1:Help  2:Search 3:Zoom 4:Undo  5:Mark  6:Cut   7:Copy  8:Paste 9:List  10:Menu
```
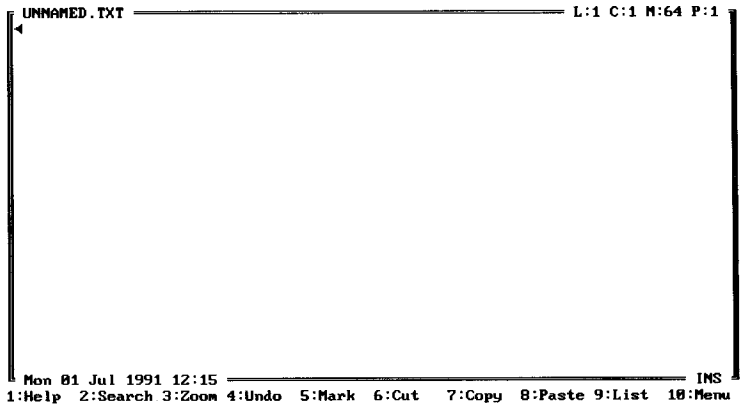
The Editor is a full-screen text editor, so you can use the cursor keys to move around the text, insert, move and delete text quickly and easily.

First, let's type a heading and location information, like this:

```
AGENDA for sales meeting

At: Brook St Office
Date: July 2nd
Time: 10:30 to 11:30
```

Press **Enter** at the end of each line, or twice to get a blank line. Correct any typing errors by using **Backspace**. Next, type the list of topics to cover. For example:

```
Review marketing analysis per product, select product
for special promotion and identify major competitors.

Discuss projections based on previous years.

Discuss market trends to put projections into context.

Assign actions arising.

Any other business.

Close
```

Only press **Enter** when you come to the end of a paragraph, as the Editor handles the formatting for you. The screen should look like this:

```
┌ UNNAMED.TXT ═══════════════════════════════ L:18 C:6 M:64 P:1 ≈ ┐
│AGENDA for sales meeting◄
│◄
│At: Brook St Office◄
│Date: July 2nd◄
│Time: 10:30 to 11:30◄
│◄
│Review marketing analysis per product, select product for
│special promotion and identify major competitors.◄
│◄
│Discuss projections based on previous years.◄
│◄
│Discuss market trends to put projections into context.◄
│◄
│Assign actions arising.◄
│◄
│Any other business.◄
│◄
│Close◄
│
│
│ Mon 01 Jul 1991 12:17 ═══════════════════════════════════ INS │
│ 1:Help  2:Search 3:Zoom 4:Undo  5:Mark  6:Cut   7:Copy  8:Paste 9:List  10:Menu
```

Now let's try to improve the layout. First, let's indent the heading and
venue. The simplest way to line these up correctly is to use the **Tab** key:

- To indent the heading, move the cursor to the start of the heading and
  press **Tab** twice.

- To indent the venue, move to the space after each colon, press **Del** to
  delete the space and press **Tab** once. Do the same for the other lines.

- Press **Ctrl-A** to move to the start of the file and the first few lines
  should look like this:

```
┌ UNNAMED.TXT ═══════════════════════════════ L:1 C:1 M:64 P:1 ≈ ┐
│            AGENDA for sales meeting◄
│◄
│At:        Brook St Office◄
│Date:      July 2nd◄
│Time:      10:30 to 11:30◄
│◄
```

Perhaps the first item on the agenda should come later. Let's move it to
make it the third item:

- Move the cursor to anywhere on the first line of the first item (`Review`
  `marketing analysis...`).

- Press **Ctrl-L** to delete the line. Then press it twice more, to delete the
  whole paragraph. (It hasn't really gone, because the Editor stores
  deleted text temporarily, in the undelete buffer.)

- Move the cursor to the start of the line `Assign actions arising`.

- Press **F4** (Undo) to restore the previous deletion to the current
  position. Press it twice more to restore the rest of the paragraph:

```
┌ UNNAMED.TXT ═══════════════════════════════ L:11 C:1 M:64 P:1 = ┐
│                    AGENDA for sales meeting◄                     │
│◄                                                                 │
│At:     Brook St Office◄                                         │
│Date:   July 2nd◄                                                │
│Time:   10:30 to 11:30◄                                          │
│◄                                                                 │
│Discuss projections based on previous years.◄                   │
│◄                                                                 │
│Discuss market trends to put projections into context.◄         │
│◄                                                                 │
│Review marketing analysis per product, select product for       │
│special promotion and identify major competitors.◄              │
│◄                                                                 │
│Assign actions arising.◄                                        │
│◄                                                                 │
│Any other business.◄                                            │
│◄                                                                 │
│Close◄                                                          │
```

Now, let's number the items:

- Move the cursor to the start of the first item, type 1 and press **Tab**, then type 2 and press **Tab** at the start of the second, and so on.

- Notice how each paragraph indents. This is called *auto-indent*.

Finally, let's add names and addresses to the memo. While you could type them, after looking them up in the address book, it's easier to transfer the information from the address book, by using the clipboard:

- Save the agenda as described previously for the other applications, giving it the name AGENDA.

- Press **Esc** to return to the Pop Up Menu and select Address book.

- With the cursor on Anne Harvey's entry, press **F5** (Mark) to mark it.

- Press **Down Arrow** to move to John's entry and press **F7** (Copy) to copy the two entries to the clipboard.

- Press **Esc** to return to the Pop Up Menu and select Editor again. This will return you to the Editor with your agenda loaded automatically.

- Move the cursor to the start of the first numbered paragraph and press **F8** (Paste) to paste the names and addresses from the clipboard.

The agenda is now complete and should look like this:

```
 D:\AGENDA.TXT ═══════════════════════════ L:6 C:1 M:64 P:1 ≈ ↑
◄                                                                ↑
At:      Brook St Office◄
Date:    July 2nd◄
Time:    10:30 to 11:30◄
◄
Anne Harvey 666222 [local] 444333 [main]◄
Planning Department◄
AAA Inc◄
2222 Prospect Place◄
Baltimore◄
◄
John Smith 123456◄
Marketing Department◄
AAA Inc◄
345 West St◄
Baltimore◄
◄
1        Discuss projections based on previous years.◄
◄
2        Discuss market trends to put projections into context.◄
◄
3        Review marketing analysis per product, select product    ↓
 Mon 01 Jul 1991 12:22 ════════════════════════════════ INS ♫
1:Help  2:Search 3:Zoom 4:Undo  5:Mark  6:Cut   7:Copy  8:Paste 9:List  10:Menu
```

Finally, save the agenda with its current name, then print 3 copies for your meeting. (If you can't remember how, follow the procedure described for the Worksheet.)

The Alarm

The next morning, at 10 o'clock, the alarm will ring, and display a flashing message like this:
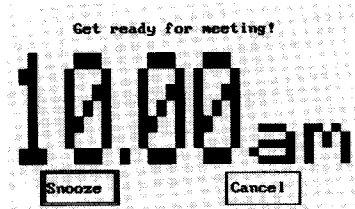
Press **Esc** twice to cancel the alarm and get ready for your meeting!

Conclusion

If you have worked through (or even just read) this chapter, you should already have a fairly good idea of how to use the applications and how versatile and convenient they are. The next chapter provides a more systematic description of the basic principles behind using the applications, while subsequent chapters describe each one in detail.

5
Chapter

Using Applications

Introduction

This chapter describes how to use the built-in software, to get you started
and to avoid repeating the same information for each application. We
suggest that you skim through this chapter the first time, to get a feel for
the way the software works. You may then need to refer to bits of it again
once you start using the applications.

The built-in software includes two main categories: *applications* and
accessories. These differ in a number of important ways, as described in
this chapter.

Selecting the Software to Use

When you finish setting up for the first time, if you have selected the Pop
Up Menu as your shell, you will see this menu:

```
┌── Choose Activity ──┐
│ File manager        │
│ Address book        │
│ Scheduler           │
│ Editor              │
│ Worksheet           │
│ Calculator          │
│ Desk clock          │
│ To do list          │
│ Options...          │
└─────────────────────┘
```
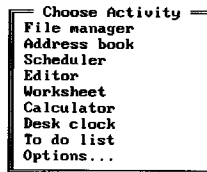
This is the Pop Up Menu, which is central to using the facilities. To use
one, simply select it from the menu; when you have finished, press **Esc** to
return to the Pop Up Menu.

To use any option in the Pop Up Menu, either type its first letter, or use
Up or **Down Arrow** to move the highlight to its name and press **Enter**.
For example, to use the Editor press **E**, or press **Down Arrow** until the
highlight is on `Editor` and then press **Enter**.

Using an application: the first five options take you to the main built-in
applications. These applications use the whole screen, so the Pop Up
Menu disappears when you select one, but when you leave the
application (e.g. press **Esc**), the Pop Up Menu is displayed again. To Do
List is rather different: it only uses the bottom right corner of the Pop Up
Menu screen, so when you select it, you simply move to that area of the
screen.

You use one application at a time. To switch to another application, you
must leave the first one and select the second from the Pop Up Menu.
(You can however normally run a built-in application at the same time as
a third party (DOS) application, providing you've told the Pop Up Menu
to reserve memory for this.)

(You can also run applications from DOS and batch files by typing commands. For example, to run the Editor, you could type EDIT.)

Using an accessory: the Calculator and Desk Clock are accessories. This means that they 'pop up' over the current screen rather than replacing it, and can be run without leaving an application.
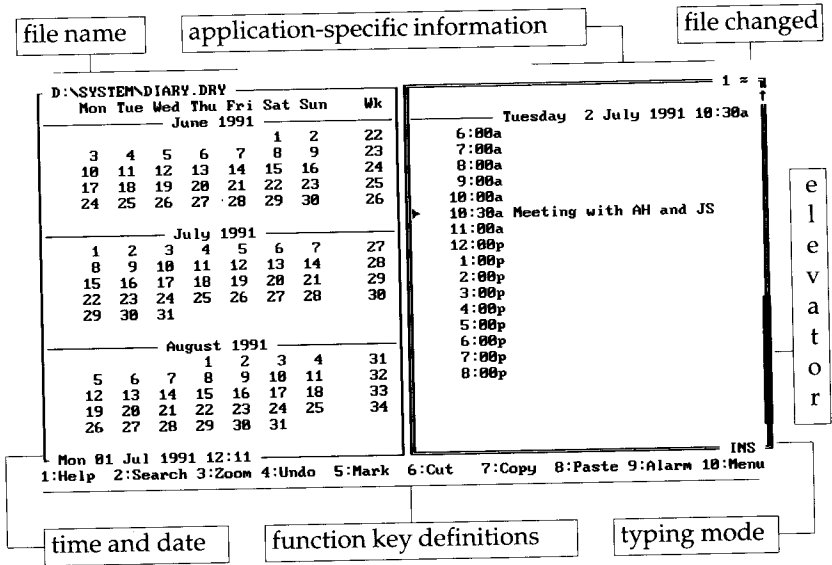
To use an accessory while running an application, press **Pop Up (Fn-F10)** and select it from the Pop Up Menu. When you press **Esc**, you will return to the application, not the Pop Up Menu. You can do this while using a DOS command, built-in application, third party application, or even another accessory.

Changing your system options: select the Options option, which displays a further menu. Select Setup the machine to change the hardware setup, or Programs options to change the software setup. Once you have finished, press **Esc** to return to the Pop Up Menu.

Using DOS commands and third party applications: select the Options option and then select Run another program from the next menu, to run a DOS command or third party application. It prompts you for a command, which executes when you press **Enter**. When the command finishes, the message Press ⏎ to continue will be displayed; press **Enter** to return to the Pop Up Menu.

Screen Layout

The applications all use a similar screen layout, like this:

```
┌──────────┐  ┌───────────────────────────────┐   ┌──────────────┐
│ file name│  │ application-specific information│─┐ │ file changed │
└──────────┘  └───────────────────────────────┘ │ └──────────────┘
```

```
 ┌─ D:\SYSTEM\DIARY.DRY ──────────────────────────────── 1 ≈ ┐
 │   Mon Tue Wed Thu Fri Sat Sun    Wk │                      │
 │ ──────── June 1991 ──────           │ ──── Tuesday  2 July 1991 10:30a
 │                        1    2    22 │   6:00a                 │
 │    3   4   5   6   7   8    9    23 │   7:00a                 │
 │   10  11  12  13  14  15   16   24 │   8:00a                 │
 │   17  18  19  20  21  22   23   25 │   9:00a                 │
 │   24  25  26  27 ·28  29   30   26 │  10:00a                 │ ┌───┐
 │                                     │▶ 10:30a Meeting with AH and JS│ e │
 │ ──────── July 1991 ──────           │  11:00a                 │ l │
 │    1   2   3   4   5   6    7    27 │  12:00p                 │ e │
 │    8   9  10  11  12  13   14   28 │   1:00p                 │ v │
 │   15  16  17  18  19  20   21   29 │   2:00p                 │ a │
 │   22  23  24  25  26  27   28   30 │   3:00p                 │ t │
 │   29  30  31                        │   4:00p                 │ o │
 │                                     │   5:00p                 │ r │
 │ ──────── August 1991 ──────         │   6:00p                 └───┘
 │                1   2    3    4   31 │   7:00p                 │
 │    5   6   7   8   9   10   11   32 │   8:00p                 │
 │   12  13  14  15  16  17   18   33 │                         │
 │   19  20  21  22  23  24   25   34 │                         │
 │   26  27  28  29  30   31           │                         │
 └─ Mon 01 Jul 1991 12:11 ──────────────────────────────── INS ┘
   1:Help  2:Search 3:Zoom 4:Undo  5:Mark  6:Cut   7:Copy  8:Paste 9:Alarm 10:Menu
```

```
┌──────────────┐  ┌───────────────────────┐  ┌──────────────┐
│ time and date│  │ function key definitions│  │ typing mode  │
└──────────────┘  └───────────────────────┘  └──────────────┘
```

Applications display information in rectangular *windows*, normally surrounded by a single or double lined *frame*. For example, the Scheduler screen shown above displays the calendar in the lefthand window and the diary entries in the righthand window.

Some applications use a single window, while others use two or three. You use one window at a time: the *active* window is the one with the double lined border.

The top line of the frame includes the name of the file you are viewing or editing (including its drive and directory path: see *Using files*) and other information such as the current position within the file. If you have made any changes to the file since saving it to disk, a ≈ *change indicator* is displayed in the top right corner.

If there is more information than shown in the window, an *elevator* (■) is shown in the righthand side of the frame. The elevator position in the shaft indicates the position within the file, while its size indicates how much of the file is visible. Arrows at the top or bottom of the elevator shaft show that there is more text in that direction.

The bottom line of the frame shows the current date and time and the typing mode: INS (*insert mode*) or OVR (*overtype mode*).

Underneath the frame is the function key line, which shows what the ten function keys, **F1** through **F10** will do. (See *Using Function Keys*, below.)

The accessories 'pop up' over part of the screen, and vary in appearance. For example, the Calculator looks like this:

```
┌──────────── Calculator ────────────┐
│ ?:                                  │
│ =:                                  │
│                                     │
│ M: 0                       General  │
└─────────────────────────────── INS ┘
1: M+    2: M-    3: MC    4: √    5:Format
```
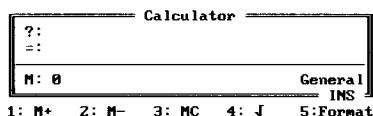
Using Function Keys

The function keys (**F1** to **F10**) are used to access functions such as Help and command menus. **F1**, **F4** to **F8** and **F10** are defined the same in all the applications (except File Manager), while **F2**, **F3** and **F9** have somewhat different functions in each application. The current definitions are displayed on the bottom line of the screen.

The standard definitions are:

F1   **Help**: display a brief explanation of the current application or accessory. See *Using Help*.

F2   **Search**: search for specified information in the Address Book, Diary and Editor. (In the Worksheet, **Edit**: edit a cell.)

F3   **Zoom**: in the Editor and Worksheet, turn the frame off to leave more room for displaying information, in the Diary change the level of detail. (In the Address Book, **Add**: add a record.)

F4   **Undo**: restore previous deletions, to the cursor position. See *Using Undelete*.

F5   **Mark**: define the start of a block, e.g. for use with the clipboard.

F6   **Cut**: delete the block and place it on the clipboard.

Shift-F6   Same as **F6**, but **add** the block to the end of the information already on the clipboard.

F7   **Copy**: copy the block and place it on the clipboard.

Shift-F7	Same as **F7**, but **add** the block to the end of the information already on the clipboard.
F8	**Paste**: copy the clipboard contents into the current application.

For more information on **F5**, **F6**, **F7** and **F8**, see *Using the Clipboard*.

F9	Application-specific.
F10	**Main menu**: display the application's main menu, which provides access to facilities such as filing, printing and configuration options.

Using Help

To display a brief summary of an application's functions and keys, press the Help key, **F1**. This will display the application's help text, in a window. To scroll the text, use **Up** or **Down Arrow**, **PgUp**, **PgDn**, **Home** or **End**. To return to the application, press **Esc**.

Movement Keys

Many keys have the same or virtually the same effect in each of the applications; any exceptions are pointed out in the application chapters. Use the following keys to move around the screen:

Left or **Right Arrow**	Move cursor a character or cell at a time
Up or **Down Arrow**	Move a line at a time
Ctrl-Left, Ctrl-Right	Move to previous or next word
Home, End	Move to beginning or end of line
PgUp, PgDn	Move up or down about two thirds of a screenful
Ctrl-U	Move to previous position
Ctrl-A or **Ctrl-PgUp**	Move to start of file
Ctrl-Z or **Ctrl-PgDn**	Move to end of file

Line Editing Keys

Use the following keys to delete text during text entry or editing in the applications. (They have no effect in the File Manager, Address Book list window or Scheduler calendar window, as these are not used for text entry.)

Backspace	Delete character to left of cursor
Del	Delete character at cursor, or current selection
Ctrl-Backspace or **Ctrl-Q**	Delete to previous word
Ctrl-W	Delete to next word
Ctrl-B or **Ctrl-Home**	Delete to beginning of line
Ctrl-E or **Ctrl-End**	Delete to end of line
Ctrl-L	Delete line

You can also move the cursor within the line by using the movement keys described in the previous section, and restore deletions by using the Undo key (see *Using Undelete*). Most applications allow you to delete large blocks of text by using the Clipboard keys (see *Using the Clipboard*) and menu options.

Replying to Prompts

Many functions ask you for information by displaying a prompt like this:

- To accept the offered text, simply press **Enter**.

```
╔═══════ Retrieve ═══════╗
║ File: A:\JANUARY.WKS   ║
╚════════════════════════╝
```

- To edit the offered text, use the line editing keys described above, then press **Enter**.

- To replace the offered text, simply start typing.

- To cancel the function, press **Esc**.

Using Menus

The applications all provide a set of functions accessed via their *Main Menu*. To display the main menu, press **F10**. For example, the Editor main menu looks like this:

```
══════ Editor ══════
Files...
Search, go to...
Right margin      64
Wordwrap...       On
Auto-indent       On
Print...
Options...
```
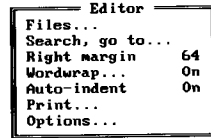
The application name is displayed in the top of the frame, while the remainder of the menu lists the options available, one per line. If the option is used to set a value (e.g. `Right margin`, above), the current setting is displayed at the end of the line.

To select an option from a menu type the first letter of the option name e.g. press **P** to select `Print`, OR move the highlight to the option name and press **Enter**. (Use **Up** or **Down Arrow**, **PgUp** or **PgDn** to move the highlight.)

If an option ends with . . . it leads to another menu. For example, the `Files` option in the Editor main menu leads to the Files menu. This second menu is stacked on the first, like this:

```
══════ Editor ══════
F╔══════ Files ══════
S║ New
R║ Retrieve...     64
W║ Save as...      On
A║ Merge...        On
P║ Load backup
O╚═════════════════
```

To quit a menu without selecting anything, press **Esc**. If you are using a stacked menu, this will return you to the previous menu.

Using Printing

The Print Menu

To print from any application press **F10** to display the main menu and select the `Print` option. (You cannot print from the accessories.)

The File Manager `Print` option simply copies the selected files to the standard printer port defined in your setup. In the other applications, the `Print` option displays the Print menu, which looks like this:

```
══════ Print ══════
Pages...        1 -> end ────────┤ varies
Copies                1
Line spacing     Single
Margins...
Headers...          On
Footers...          On ──────────┤ standard
Use printer... Default
Settings...
Go!
```
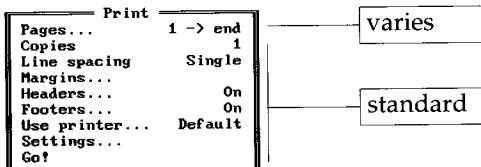
The first option is application-specific and is described in the individual application chapters. The other options operate the same in all the applications:

- Use the Copies, Line spacing, Margins, Headers and Footers options to configure these aspects of printing the current file.

- Use the Use printer option to load printer settings from a *standard printer configuration* (SPC) file. These settings are the printer port, setup code sequence, page length, page width, and end of line codes to use.

- Use the Settings option to edit the current printer settings.

- Use the Go! option to begin printing.

The current options are all saved in the application's setup, so the next time you load the application, the same print options will be used.

About Printing

- Printing is formatted to suit the current Print menu settings and printer configuration file.

- Each line ends with CR (ASCII 13) or CR-LF (ASCII 13, 10) (depending on the End of line setting in the printer settings).

- Tab characters are output as spaces (to reach the next tab stop).

- Each page ends with a form feed character (FF, ASCII 12).

- Each print job ends with a form feed character (FF, ASCII 12).

- Formatting may be incorrect if you use proportionally spaced fonts, or include printer control codes in the printed file which change character or line spacing, or position on the page.

Each standard Print menu option will now be described in turn.

The Copies Option

To change the number of copies, select the Copies option and type the number of copies (1 to 9). If you select multiple copies, this will print all the copies of the first page, then all the copies of the second page, and so on.

The Line Spacing Option

To change the spacing between lines, select the `Line spacing` option, which toggles between `Single` and `Double`. With double line spacing, a blank line is printed between each line of print.

The Margins Option

The paper size is defined in the printer settings, in terms of lines per page and columns per line, but you can also leave margins for binding, footers etc.

To change the margins, select the `Margins` option from the Print menu, select the setting to change and type the new value, in the range 0 to 20 (the number of characters horizontally and the number of lines vertically).

```
┌─ Margin Spacings ─┐
│ Left            8 │
│ Top             2 │
│ Header          3 │
│ Footer          2 │
│ Bottom          2 │
└───────────────────┘
```

When the margins are correct, press **Esc** to return to the Print menu.

The margins are as follows:

```
          ───────columns per line───────
        ┌──────────────────────────┬───┐
        │ ┌──────────────────────┐ │   │
        │ │        TOP           │ │   │
        │ ├──────────────────────┤ │   │
        │ │       HEADER         │ │ L │
        │ ├──────────────────────┤ │ i │
        │ │                      │ │ n │
        │ │                      │ │ e │
        │ │                      │ │ s │
        │L│                      │R│   │
        │E│                      │I│   │
        │F│                      │G│ p │
        │T│                      │H│ e │
        │ │                      │T│ r │
        │ │                      │ │   │
        │ │                      │ │ p │
        │ │                      │ │ a │
        │ │                      │ │ g │
        │ ├──────────────────────┤ │ e │
        │ │       FOOTER         │ │   │
        │ ├──────────────────────┤ │   │
        │ │       BOTTOM         │ │   │
        │ └──────────────────────┘ │   │
        └──────────────────────────┴───┘
```
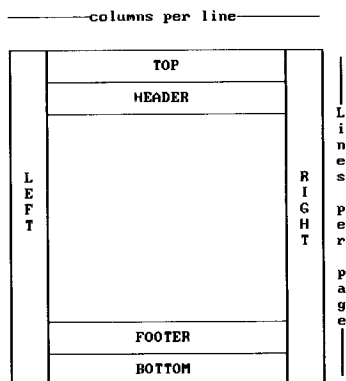
✓ *Note: The* `Left` *setting defines the right margin as well.*

The Headers Option

A header is a single line of text printed at the top of each page, on the first line of the header margin (see *The Margins Option*, above). To control headers:

- Select the Headers option from the
  Print menu and select the setting to
  change it, as follows:

```
════════ Headers ════════
First page              Off
End page                 On
Rest of file             On
Start counter at          1
Left
Center                 - # -
Right
```

- First page: toggle On to print a header on the first page of the
  document, or Off to omit it for the first page (e.g. if the first page is a
  title page).

- End page: toggle On to print a header on the last page of the
  document, or Off to omit it for the last page.

- Rest of file: toggle On to print a header on all pages except the first
  and last, or Off to omit it for these pages.

  To turn headers off, set all three to Off. The header will also be turned
  off if the output is a single page, and any of these options is set to Off.

- Start counter at: type the page number (0 to 99) to use for the first
  page of the document.

- Left: type the text that you want at the lefthand edge of the header.
  You can use any printable character or control code, or the following:

#	the header page number
@	the current date
%	the filename (without path)

- Center: as Left, but this text will be centered within the header.

- Right: as Left, but this text will end at the right margin.

- When the settings are correct, press **Esc** to return to the Print menu.

*Note: If you turn headers off, the header will be printed as a number of
blank lines specified by the header margins setting.*

The Footers Option

A footer is a single line of standard text printed at the bottom of each
page, on the last line of the footer margin (see *The Margins Option*, above).
To define or control footers, select the Footers option from the Print
menu and define the settings exactly as described for the Headers
option.

The header and footer page counters are separate, so you can print a different 'page number' in each. For example, you might set Start counter at to 1 for headers, and 2 for footers, then include the text Continued on page # in the footer, to print the next page number automatically.

The Use Printer Option

Printer configuration files store information about the printer and paper used. To select a different configuration file:

- Select the Use printer option from the Print menu.

```
┌──── Printer ────┐
│ Load printer file... │
│ Use defaults        │
└─────────────────┘
```

- To use another configuration file, select Load printer file, type the file name and press **Enter**. Or delete the offered name and press **Enter** to see a list. To select a file, move the highlight to it and press **Enter**.

- To return to the default printer configuration, select Use defaults. (These system defaults are described in the next section.)

The Settings Option

You can use standard printer configuration files to store information about a printer setup, which you can then easily share between different applications. To edit the current printer configuration file:

- Select the Settings option from the Print menu:

  (These settings are the system default printer configuration.)

```
┌──── Printer Settings ────┐
│ Destination...    Parallel │
│ XON/XOFF               On │
│ Setup code               │
│ Lines per page         68 │
│ Cols per page          88 │
│ End of line         CR-LF │
│ Update as...      Default │
└──────────────────────────┘
```

- To change an option, move to it and press **Enter**:

  - Destination: displays a menu offering Parallel, Serial, and File as the destination for printed output. If you select File, you will be prompted for a filename and all subsequent printed output will be appended to this file.

  - XON/XOFF: toggles between On and Off, to control use of the XON/XOFF software protocol, which can be used for flow control. This option is ignored unless you set Destination to Serial.

- `Setup code`: type up to 128 characters to send to the printer at the start of each print job. Typically, this will be used to initialize the printer to the font, linespacing, tab stops, margins etc that you want to use.

  To type control characters, either type ^ followed by the control code letter, or type \ followed by the character's ASCII code as a 3-digit number. For example, for Control-B, type **^B** or \002; for Escape, type **^[** or \027. To type a ^ character, press ^ twice.

  Refer to Appendix A for a table of ASCII codes and to your printer manual for information on printer commands.

- `Lines per page`: type a number in the range 41 to 99, which is the length of the page expressed as the number of lines per page, using the selected font. (See *Page size*, below.)

- `Cols per page`: type a number in the range 41 to 250, which is the width of the page expressed as the number of characters you could print horizontally, using the selected font. (See *Page size*, below.)

- `End of line`: select the control sequence required to start a new line on your printer, from `CR` and `CR-LF`.

- To save the changes to a printer configuration file, select the `Update as` option, type (or edit) the filename and press **Enter**. (The usual extension for printer configuration files is SPC - Standard Printer Configuration). If you don't save the settings, the changes will only last until you exit the application.

Notes:

- *The Setup code is not counted for formatting purposes.*

- *You will find managing configuration files a lot easier if you always use the SPC extension and keep them all in the same directory.*

- *If you are using a serial printer (Destination is set to Serial), make sure that the serial port is set up properly.*

Page size

To get the correct page size, measure the page width and length in inches, then check the font or printer documentation for the font pitch (characters per inch, cpi) and line spacing (lines per inch, lpi). Then convert the measurements as follows:

```
columns per page = width x cpi
lines per page   = length x lpi
```

For example, if you are using a 12 cpi, 8 lpi font on Letter sized paper, set `columns per page` to 87 and `lines per page` to 84.

The Go! Option

To start printing:

- Connect the printer to the correct port (check the `Destination` option in the Settings menu if not sure).

- Make sure the printer is turned on and ready to print (e.g. has paper and is on-line).

- Check the Print menu settings. In particular, set the application-specific option e.g. to select the pages to print.

- Select the `Go!` option from the Print menu and printing should begin, as indicated by:

  `[ Printing ... ]`

Note: Wait for printing to finish before you turn off the computer, or the printout may be incomplete.

- When printing has finished you will be returned to the application you were using.

To cancel printing, press **Esc**.

Caution: To avoid losing characters, the computer will not turn itself off while printing. This means that if printing is held up (e.g. the printer runs out of paper), the computer will remain turned on and may exhaust its batteries. Therefore, remember to check that printing has finished after a reasonable interval.

Using Files

The Files Menu

The file-based applications (Address Book, Scheduler, Editor and Worksheet) store information in memory, but can also write it to disk as *data files*. They provide a range of filing facilities accessed via a Files menu. (The File Manager also has a Files menu, but this is somewhat different: see the *File Manager* chapter for details.)

To use the Files menu, press **F10** to display the main menu and select the Files option:

```
========= Files ========
New
Retrieve...
Save as...
Merge...
Load backup
```
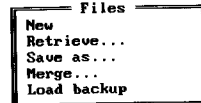
These options operate the same in each application:

- New: start a new file i.e. delete all information from memory. (This does not change anything stored on the disk.)

- Retrieve: load a file from disk, replacing the information in memory.

- Save as: save the current information to disk, as a file.

- Merge: insert information from a disk file.

- Load backup: use the backup version of the current file.

About Filing

Note: If you are already familiar with DOS filenames and pathnames, you may only need to scan this section.

Filenames

When you create a file you must give it a *filename*. Choose a name that indicates what the file contains, and also meets the following rules.

A filename consists of up to eight characters and an optional *extension* of a period and up to three more characters. While you can use a wide range of characters, for simplicity use just letters, numbers and the underline character "_". In particular, do not use spaces. For example, these are valid names: 123, TODAY.TXT, WK52_HRS.WKS, but these are not: 123 456 (includes a space), TODAYSORDERS.TXT (more than 8 characters) and NOTES.32.TXT (includes two periods).

Default Extensions

Each application normally uses a different extension for its data files, to help you recognize them and allow File Manager to load each file into the right application, automatically. These extensions are normally ADR (Address Book), DRY (Scheduler), TXT (Editor), SPC (Printer Configuration), and WKS (Worksheet). (WK1 files will also load into the Worksheet.)

If you type a filename without an extension, the application will assume its default one.

Directories and Paths

You can divide a disk into a number of separate areas called *directories* to help organize your filing, like drawers in a filing cabinet.

Directories have names just like files, although you usually don't give a directory an extension. So, you could create directories called MEMOS, ORDERS and INVOICES, to store your memos, orders, and invoices. (You use File Manager or DOS commands to create directories.)

A new disk has a single directory named "\", its root directory. All directories you create are stored here, or in directories which you have already created in it, creating a nested or tree structure: drawers within drawers. So, you could create a directory called MEMOS, and within that create a directory for each month, JAN, FEB, MAR, etc:

```
              \ (root)
               |
      ┌────────┴────────┐
    MEMOS           INVOICES
      |
 ┌──┬──┴──┬───┐
JAN FEB MAR APR MAY..
```
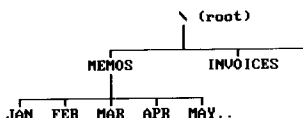
To use the files in a directory, you can either move to it (make it your *current directory*), or use a *pathname*. To move to another directory, you can use File Manager or DOS commands.

A pathname is a *path* plus a filename. A path is a list of directory names, separated by \ characters, which specifies how to find the directory, starting from your current directory or the root directory. If the path starts in the root directory, start it with "\". For example, to refer to the file TEMP.TXT in the directory MEMOS\JAN, you could type \MEMOS\JAN\TEMP.TXT. If the path starts from the current directory, start it with the name of a directory in your current directory, not "\". For example, to refer to TEMP.TXT if you are in the MEMOS directory, type JAN\TEMP.TXT.

Finally, to specify the parent of the current directory, use " . . " For example, if you are in \MEMOS\FEB, you could refer to TOTALS.TXT in the directory \MEMOS\JAN as . . \JAN\TOTALS.TXT.

Drives

Each disk drive has its own unique drive letter, which you can use in a filename or pathname to refer to files or directories on another drive. The drive letters are:

A: Card drive 1
B: Card drive 2
C: Internal (ROM) disk, used for the operating system, applications, and utilities
D: SRAM disk, used for system files
E: Main internal RAM disk, used for user files
F: External floppy disk drive, if installed

For example, to load the file HOURS.WKS from the BACKUP directory on drive A, you could type A:\BACKUP\HOURS.WKS.

The New Option

To start a new file (called UNNAMED), select the New option from the Files menu.

If you have made any changes since you last saved the file, you will first be asked if you want to save it:
Press **Y** to save it with its current name, or **N** to discard the changes.

```
 Save DIARY.DRY 
 Yes
 No
```
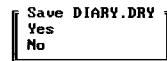
The Retrieve Option

To load a file into an application, replacing the current information, select the Retrieve option from the Files menu. This will offer you the current filename, like this:

```
 Retrieve 
 File: A:\JANUARY.WKS
```

Note that the file's full pathname is displayed. If the pathname is too long to show fully, use **Right Arrow** to scroll it sideways.

* To load the same file again, simply press **Enter**. You might do this to cancel all changes you have made since last saving it.

* To load a different file, either edit the displayed name, or type the new name, then press **Enter**. If the file has the default extension for this application, you don't need to type it.

- **To load a file from a list:**

    - To list all files which have the usual extension for this application, type a space or delete the displayed name, then press **Enter**.

    - To list all files in the current directory, type : and press **Enter**.

    - To list some other group of files, type a wildcard filename or pathname and press **Enter**.

        ```
        ┌─ E:\SHEETS\JAN\*.WKS ─┐
        │..                <DIR>│
        │BACKUP            <DIR>│
        │DATA              <DIR>│
        │BLANK.WKS              │
        │WEEK1.WKS              │
        │WEEK2.WKS              │
        │WEEK3.WKS              │
        ```

        Once you press **Enter**, this will display a list of directories in the current or specified directory, followed by the selected files, like this:

    - To load a file, move the cursor to it (using **Up** or **Down Arrow** or by typing its first letter) and press **Enter**.

    - To list another directory, move the cursor to it and press **Enter**.

- Once you have chosen a file to load, if you have made any changes since saving the current file and are not loading the same file again, you will be asked whether to save it first:

    ```
    ┌─ Save MEMO.TXT ─┐
    │Yes              │
    │No               │
    ```

- Press **Y** to save it with its current name, or **N** to discard the changes.

    While loading is in progress, you may see the message Loading . . . .

The Save As Option

To write the file to disk with its current name, press **Alt-S**. To write the file to disk with its current name and then exit, press **Alt-X**.

To write the file to disk, select Save as from the Files menu. This will offer you the current filename, like this:

```
┌────────── Save ──────────┐
│ File: E:\JAN\HOURS.WKS   │
└──────────────────────────┘
```

- To save the file with its current name, simply press **Enter**.

- To use a different name, either edit the displayed name, or type the new name, then press **Enter**. If you do not type an extension, the application will add its default extension to the name.

- To select the filename to use from a list, type a wildcard filename or pathname, as described for the Retrieve option.

- If you selected a different filename from the current filename and there is already a file with that name, you will be asked whether to replace it:

```
Overwrite JANUARY.WKS
Yes
No
```

- Press **Y** to replace the existing file, or **N** to cancel the save.

The Merge Option

To insert information from another file, use the `Merge` option. The Editor inserts the text at the cursor position. The Address Book and Scheduler sort the inserted entries into the correct order. The Worksheet replaces cells starting from the current cell.

- If you are using the Editor or Worksheet, position the cursor where you want the information inserted. (In the Worksheet, you will normally choose a blank area of the spreadsheet, since the merged cells **replace** the current cell contents.) If you are using the Address Book or Scheduler, the cursor position does not matter.

- Select the `Merge` option from the Files menu. This will prompt you for the file to merge:

```
Merge
File:
```

- Select the file to merge as described for the `Retrieve` option.

- If you are using the Worksheet and have made any changes since you last saved the current file, you will be asked if you want to save it first, since Merge can overwrite cells.

The Load Backup Option

If backups are turned on (in the application's Options menu), whenever you save a file, the application will rename the previous version to create a backup, by changing the first character of the extension to $. For example, the backup of DIARY.DRY would be called DIARY.$RY.

To use a backup, select `Load backup` from the Files menu.

The File Lists Option

Whenever you are offered a list of filenames to choose from, they are sorted according to the application's file lists option. To change this:

- Press **F10** to display the main menu and select `Options` and you will see a menu like this:

```
====== Options ======
Extension        ADR
Backup file      Off
Autoload          On
File lists...
```

- Select the `File lists` option to display this menu:

```
====== File Lists ======
Sort order...         Name
Direction           Ascend
Include date/time      Off
```

- To decide which aspect to sort the files on, select `Sort order` and chose `Name`, `Date`, `Size`, or `Extn` (extension) from the menu.

- To control the sorting order, select `Direction`, which will toggle between `Ascend` and `Descend`.

- To control whether to list date and time stamps, select `Include date/time` which will toggle between `On` and `Off`. (Date and time stamps indicate when the file was created or last modified.)

Deleting Files

Whenever you are offered a list of filenames to choose from, you can also delete files, e.g. to make room on the disk before saving another file:

- Move the highlight cursor to the filename.

- Press **Del** and you will see a menu.

- Select `Yes` to delete the file or `No` to leave it alone.

Using the Clipboard

You can use the Clipboard to copy or move information within a file, or from one file or application to another. For example, you could use it to copy an address from the Address Book to a letter you are writing in the Editor. The Clipboard converts the format of the data to suit the destination. (Clipped data is stored in D:\SYSTEM\CLIPBORD.DTA.)

To transfer a block of information via the Clipboard:

- Move to the start of the block and press **F5** (Mark) to mark it.

- Move to the other end of the block and the selected area will be shown by highlighting. When you've selected the right area, press:

  - **F6** (Cut) to delete the block and place it on the Clipboard (replacing anything already there).

- **Shift-F6** to delete the block and add it to the end of the Clipboard.

- **F7** (Copy) to copy the block and place it on the Clipboard.

- **Shift-F7** to copy the block and add it to the end of the Clipboard.

- Move to the destination for the block and press **F8** (Paste) to insert the Clipboard at the current cursor position.

Note: Pasting information does not remove it from the Clipboard, so you can paste multiple copies.

Using Undelete

The applications store deleted information in the undelete buffer (D:\SYSTEM\UNDELETE.DTA), so you can recover information which you deleted by accident. However, as the undelete buffer is of a limited size, it will not hold all deletions forever. Also, see the guidelines below.

To undelete the last deleted item, simply place the cursor where you want it restored and press **F4** (Undo). If you press it again this will undelete the item deleted before that, and so on. The only deletions that are not put in the undelete buffer are as follows:

- Use of the Files menu New option.

- Use of the **Cut** key (**F6**) (use the **Paste** key (**F8**) to recover it).

Note: If you delete information using the Worksheet Range Erase command, each cell will be undeleted in turn as a separate item, so you must position the cursor correctly before each undelete. (For example, if you deleted the range A1..B2, it would undelete in the order B2, A2, B1, A1.)

You can also use undelete as a quick and easy way of moving information. For example, to move cell A1 to B2, in the Worksheet:

- Move to A1 and press **Del** to delete it.

- Move to B2 and press **F4** to undelete i.e. recover the information to B2.

6

Chapter

The Pop Up Menu

Introduction

The Pop Up Menu is the main control center for your computer. You can use it to execute any application or accessory, change the way the applications or the system itself is set up, or execute DOS commands or third party applications, by typing the appropriate command.

Displaying the Pop Up Menu

The Pop Up Menu will be displayed once the installation process is complete, providing you chose to run it. You can add or remove options (see *Customizing the Pop Up Menu*), but the standard Pop Up Menu looks like this:

```
┌─ Choose Activity ─┐
│ File manager      │
│ Address book      │
│ Scheduler         │
│ Editor            │
│ Worksheet         │
│ Calculator        │
│ Desk clock        │
│ To do list        │
│ Options...        │
└───────────────────┘
```
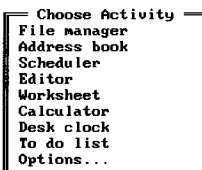
To display the Pop Up Menu again once you have chosen an application, either press the **Pop Up** key (**Fn-F10**) or **return to it** by leaving the application (press **Esc**).

To display the Pop Up Menu from the DOS prompt, type POPUP and press **Enter**, or press the **Pop Up** key (**Fn-F10**).

To display the Pop Up Menu while using a third party application, press the **Pop Up** key (**Fn-F10**).

Using the Pop Up Menu

Once the Pop Up Menu is displayed, you can select an option from it just like any other menu i.e.:

- Use **Up** or **Down Arrow** to move to an option and press **Enter** OR type the first letter of the option, e.g. press **E** to select the Editor.

- You can use the Calculator, Desk Clock, or Options options any time.

- The other options are the built-in applications. If you are already running a built-in application, you may not run another one (you must quit the application first). If you are running a third party (DOS) application, you can only use a built-in application if you have reserved memory for this purpose (see *Pop Up Menu Options*).

The first five options are described in their own separate chapters. Calculator, Desk Clock, To Do List and Options are described here.

The Calculator

The Calculator is an accessory, so you can pop it up over any application, at any time and return the results to the application when you quit.

To use it, press **Pop Up** and select Calculator from the Pop Up Menu, or type CALC and press **Enter**, at the DOS prompt. This will display the Calculator window in the bottom right corner of the screen:

When you've finished with the calculator, press **Esc** to return to the previous application. (You may need to press this twice.) To exit and return the current result to the application, press **Ctrl-Enter** (this 'types' the result into the application).

> *Note: When you select the Calculator, this also selects Num Lock mode automatically.*

Using the Calculator

To perform a calculation, type it on the input line and press **Enter**, **Down Arrow** or =. The answer will be displayed on the result line.

To perform further calculations, press **Up Arrow** to move back to the input line and edit the displayed calculation using the usual line editing keys, or press **Esc** to move back to the input line and start a new calculation. Press **Enter**, **Down Arrow** or = again to perform the calculation.

Editing

To edit a calculation, use any of the usual line editing facilities, including:

- **Left** and **Right Arrow**, to move cursor a character at a time

- **Backspace** or **Ctrl-H** to delete character to left of cursor

- **Del** to delete character at cursor

- **Ctrl-Backspace** or **Ctrl-Q** to delete to previous operator

- **Ctrl-W** to delete to next operator

Leaving the Pop Up Menu

To quit the Pop Up Menu:

- Press **Esc**.

```
┌───── Quit ─────┐
│ Switch off     │
│ Return to DOS  │
└────────────────┘
```
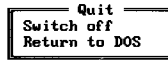
- To turn the computer off, select `Switch off`. (When you turn on again, you will still be in the Pop Up Menu.)

- To exit to the DOS command line or previous application, select `Return to DOS`.

If you exit to the DOS command line, you can run DOS commands or applications by typing commands, as described in Chapter 7. (You can also do this within the Pop Up Menu by using the `Run another program` option, described later in this chapter.) To return to the Pop Up Menu, type `POPUP` and press **Enter**.

The Calculator

The Calculator is an accessory, so you can pop it up over any application, at any time and return the results to the application when you quit.

To use it, press **Pop Up** and select `Calculator` from the Pop Up Menu, or type `CALC` and press **Enter**, at the DOS prompt. This will display the Calculator window in the bottom right corner of the screen:

When you've finished with the calculator, press **Esc** to return to the previous application. (You may need to press this twice.) To exit and return the current result to the application, press **Ctrl-Enter** (this 'types' the result into the application).

> Note: When you select the Calculator, this also selects Num Lock mode automatically.

Using the Calculator

To perform a calculation, type it on the input line and press **Enter**, **Down Arrow** or =. The answer will be displayed on the result line.

To perform further calculations, press **Up Arrow** to move back to the input line and edit the displayed calculation using the usual line editing keys, or press **Esc** to move back to the input line and start a new calculation. Press **Enter**, **Down Arrow** or = again to perform the calculation.

Editing

To edit a calculation, use any of the usual line editing facilities, including:

• **Left** and **Right Arrow**, to move cursor a character at a time

• **Backspace** or **Ctrl-H** to delete character to left of cursor

• **Del** to delete character at cursor

• **Ctrl-Backspace** or **Ctrl-Q** to delete to previous operator

• **Ctrl-W** to delete to next operator

(The examples show how 1234.56789 would be displayed.)

- If you select a format other than General, you will be prompted for the number of decimal places, which dictates how many significant figures to display. Type a number between 0 and 12.

- Press **Enter** when the format is correct.

Technical Notes

Length of calculations: no practical limit.

Size of results and intermediates: approximately 2.23E-308 to 1.7E+308 (plus or minus).

Accuracy of results: 12 digits.

The Desk Clock

The Desk Clock is a simple accessory which displays the date, time, and next alarm, in the appropriate 24-hour or 12-hour (am/pm) format. To display the Clock over your current application, press **Pop Up (Fn-F10)** and select the Desk clock option. To exit, press **Esc**. To display the Clock from the DOS prompt, type CLOCK and press **Enter**.

The Clock will also 'pop up' when an alarm goes off. See *Alarms* for instructions on canceling an alarm.

The Clock is normally displayed in the top right corner of the screen:

Monday 1 July 1991	→ date now
10.00am	→ time now
The next alarm is 02 Jul 10:00 Get ready for meeting	→ next alarm, if set
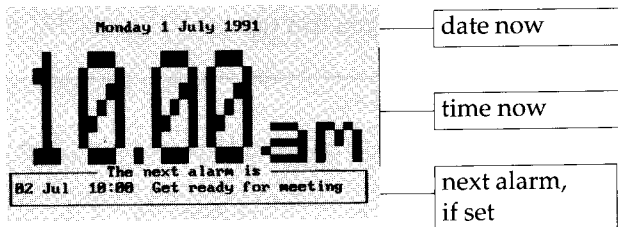
If the AC adaptor is connected and working, seconds are shown in the top right corner of the clock screen.

Setting the Clock

To change the time or date, use the File Manager `Time and date` option, or the TIME and DATE commands, at the DOS prompt.

Alarms

To set alarms, use the Scheduler application. When an alarm goes off, the Clock will pop up automatically over the current screen, like this:

Get ready for meeting!

— alarm text

— time now
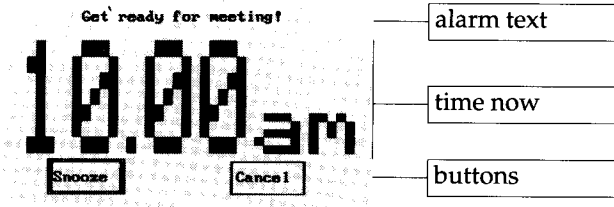
— buttons

To **cancel the alarm** and return to the application, press **C** or **Esc**, or press **Right Arrow** to select the `Cancel` button and press **Enter**.

To **suspend the alarm** for five minutes, press **S** or **Enter** with the `Snooze` button selected. You can carry on using the application until the alarm sounds again, in five minutes. (You can use snooze as often as you like.)

To **stop the alarm sounding** but leave it displayed, press any other key. (The alarm will sound for 15 seconds if you do not stop it.)

If the machine turned on to sound the alarm, it will remain on until you turn it off (or automatic power down turns it off).

To Do List

The To Do List is a simple application which you can use to organize a 'to do list' or 'actions list', to remind you of tasks that you want to do. This list is displayed whenever the Pop Up Menu is displayed. To edit the list, select the `To do list` option from the Pop Up Menu:

- If you are using another built-in application, you must quit that first (e.g. press **Esc**) and then select `To do list` from the Pop Up Menu.

- If you are using a third party application, press **Pop Up (Fn-F10)** and select `To do list` from the Pop Up Menu. If this fails, you have not reserved memory for the built-in applications, so you must quit the third party application first (see *Pop Up Menu Options*).

- If you are at the DOS prompt, type `TODO` and press **Enter**. This will use the whole screen. (You can also use the switch `/F` to use a quarter of the screen.)

The To Do List screen is normally displayed in the bottom right corner of the Pop Up Menu screen and looks like this:

```
══════════════ To Do ═══════════════
 1. Order flowers (but not roses th→
 2. Book taxi
 3. Book restaurant
√4. Arrange babysitter
 5.


                                  INS
1:Done! 2:Move↑ 3:Move↓ 4:Undo 5:Sort
```

It shows a list of numbered actions, one per line. If a line is wider than the window, it ends with a right arrow character (→). If there are more than 10 actions, an elevator will be displayed in the right-hand border.

The bottom line lists the function key definitions. The tick mark (√) next to a number indicates that you have completed that action.

To leave the To Do List, press **Esc**. This will save it automatically and return you to the Pop Up Menu (or DOS command line).

Entering Actions

To add a new action to the list:

- Move to where you want to insert it (e.g. using **Up** or **Down Arrow**).

- Press **Enter** and type the text. Note that you do not type the action number - this is added for you automatically.

- When you have finished, press **Enter** to add the entry and start another, or press a movement key to add it without starting another.

Moving Around the List

You can use the following keys to move around the list:

- **Up** and **Down Arrow**, to move a line at a time

- **PgUp** and **PgDn**, to move up or down about two thirds of a screenful

- **Ctrl-PgUp**, to move to the start of the file (first action)

- **Ctrl-PgDn**, to move to the end of the file (last action)

Editing Entries

To edit the text, move the bar cursor to it by using the movement keys and start typing. You can now edit the entry with any of the usual line editing keys, including:

- **Left** and **Right Arrow**, to move cursor a character at a time

- **Backspace** or **Ctrl-H**, to delete character to left of cursor

- **Del**, to delete character at cursor

- **Ctrl-Backspace** or **Ctrl-Q**, to delete to previous word

- **Ctrl-W**, to delete to next word

- **Ctrl-B** or **Ctrl-Home**, to delete to beginning of line

- **Ctrl-E** or **Ctrl-End**, to delete to end of line

- **Ctrl-L**, to delete line

- **Ins**, to toggle between Insert and Overtype modes

To move an entry to another position, move to it and use the **F2** (Move↑) or **F3** (Move↓) keys, or delete it by pressing **Del** twice, move to the new position and press **F4** (Undo).

To tick a completed action, move to it and press **F1** (Done!) or **Del**. To remove the tick, simply press **F1** again.

To delete a ticked entry, move to it and press **Del**. (If you delete the wrong one, press **F4** (Undo) to recover it.)

Sorting the List

To sort the list, press **F5** (Sort). This does the following:

- Deletes any blank entries.

- Moves any ticked entries to the end of the list and sorts them into alphabetical order.

- Sorts the other entries into alphabetical order.

Note: If you start each related action with the same text, sorting will group them together automatically. For example, if you have to write a number of letters, start each action with Write. *To make sure that important actions are always sorted to the top of the list, start them with the ! character.*

Printing and Other Functions

The To Do List is a simple ASCII file, D:\SYSTEM\TODO.TXT. To print it, use the File Manager `Print` option, or for more control over printing and more flexible editing, load it into the Editor and use its facilities.

Pop Up Menu Options

Setting up the Machine

You can configure various aspects of the hardware by selecting menu options as follows. The changes you make will remain until either you change them again, or perform a cold boot (i.e. lose all battery power).

Note: For information on setting up an application, see the Programs Option. For information on setting up printing, see Using Printing in Chapter 5. For information on the DOS configuration files, CONFIG.SYS and AUTOEXEC.BAT, see Appendix G.

To set up the hardware:

- Select `Options` from the Pop Up Menu and select the `Setup the machine` option from the menu or press the **Set Up** key:

```
══════ System Setup ══════
Low-power mode                On
Power down delay...      2 minutes
Keyclick                      On
All sounds                    On
Screen inverse
Microprocessor speed       10 MHz
Character set             Default
RS-232C port settings...
```

This shows the current setting for each setup option, other than the RS-232C port.

- To change a setting, select it by typing its initial letter OR move the highlight to it and press **Enter**.

- Once you have defined the setup you want, press **Esc** to store it and return to the Options menu. The changes take effect immediately.

Each option will now be described in turn.

Low Power Mode

Normally, the computer switches off the processor when there is no processing to perform. This is low power mode, and is used to maximize

battery life. However, certain badly-behaved third party programs may not operate correctly with low power mode selected, as this also stops the timer ticks which such programs may rely on.

To disable low power mode, select the Low-power mode option to toggle the setting to Off. To restore normal power handling, toggle it back to On.

⚠ *Caution: If you disable low power mode, the batteries will run down very quickly!*

Power Down Delay

The computer will normally turn itself off to conserve battery power, if it has been waiting for keyboard input for more than 5 minutes. To control power down, select the Power down delay option and choose an option (0, 1, 2 or 5 minutes) from the menu; 0 means do not power down. For example, you might select 1 minute to maximize battery life.

Keyclick

Normally, all keyboard keys sound a click via the speaker when you press them, but you can toggle this off or on again by selecting the Keyclick option or by pressing **Fn-F5**. If the keys don't click with Keyclick set to On, check the All sounds setting.

All Sounds

The computer normally uses audible signals to warn you of errors, indicate that a clock alarm is ringing and for keyclicks, but you can toggle these all between Off and On by selecting the All sounds option. For example, you might be working in a place where the noise is intrusive, such as a library.

Screen Inverse

The computer screen normally shows black text on a white background. Select the Screen inverse option to toggle between this and white text on a black background. (The change is made immediately.)

Microprocessor Speed

The computer can operate at two clock speeds: 5MHz and 10MHz. These have nothing to do with time keeping, they dictate the speed at which the microprocessor executes programs i.e. at 10MHz, programs execute up to twice as fast. The computer normally operates at the slower speed, 5MHz, as this is fast enough for most uses and consumes less power than 10MHz operation.

To change the clock speed, select the Microprocessor speed option, to toggle it between 5 MHz and 10 MHz. For example, you might select 10 MHz if you are using the Worksheet with a large or complex spreadsheet, to reduce the time taken to recalculate.

Character Set

A character set is the range of characters that the computer displays for each ASCII code (0 to 255). The computer has two character sets: Default and Scandinavian, which are listed in Appendix A. To switch character sets, select the Character set option, to toggle between Default (International) and Scandinavian.

RS-232C Port Settings

Before using a serial port, you must check that it is set up to suit the connected device:

• Select the RS-232C port settings option from the System Setup menu:

```
╔══ RS-232C Port ══╗
║ Baud rate... 9600 ║
║ Parity...    None ║
║ Data bits       8 ║
║ Stop bits       1 ║
║ Name of port COM1 ║
╚═══════════════════╝
```

• Check Name of port to make sure that the correct serial port is selected. If not, select it to toggle between COM1 and COM2.
Check each of the other settings and change it if it does not match the other serial device:

• To change the Baud rate, select Baud rate and select from the menu of 110, 150, 300, 600, 1200, 2400, 4800 or 9600.

• To change the parity, select Parity and pick None, Odd or Even.

• Select Data bits to toggle between 7 and 8 bits.

• Select Stop bits to toggle between 1 and 2 bits.

If you can change settings on the other device too, set both as follows:

Baud rate: Choose the highest rate that works reliably, to save time.

Parity: If exchanging data with another computer, select Odd or Even for simple error-checking (or, better, use a file transfer package with error handling). If sending data to a printer select None, as printers usually can't report or handle parity errors properly.

Data bits: If transferring simple ASCII data (text), select 7 bits. If transferring binary data (e.g. programs) or you are not sure, set this to 8.

Stop bits: Set this to 1 unless data gets corrupted, then try 2.

Setting up the Programs

To change the options which affect all the built-in applications:

- Select Options from the Pop Up
  Menu and select the Programs
  options option:

```
┌──── Programs Options ────┐
║ Language...              ║
║ Sorting          Normal  ║
║ Memory on exit   Reserve ║
║ Ask for password...  No  ║
└──────────────────────────┘
```

- To change the language used for all
  messages and menus, select Language and choose from the menu.

- To change the sorting order (e.g. for file lists and Address Book
  entries), select Sorting to toggle between Normal and Swedish.

  - Select Normal to sort characters in the normal order for English and
    German languages: umlauted characters are sorted as the character
    followed by an "e" (e.g. ä is sorted as ae), ß is sorted as "ss", and all
    other accents are ignored (sorted as the unaccented letters).

  - Select Swedish to sort characters in the normal order for the
    Swedish language: umlauted characters are sorted after "z".

- To reserve memory for running the internal applications, select
  Memory on exit to set it to Reserve. This will allow you to run any
  of the internal applications even while running a third party
  application, by using **Pop Up** and selecting the application from the
  menu. (This uses 128 KB of memory.)

  To provide the maximum memory for third party applications, set
  Memory on exit to Release. You may then not be able to run the
  built-in applications at the same time as third party applications.

- To help prevent anyone else using your computer and accessing your
  information, select Ask for password to toggle it to Yes. (See
  Passwords for more information.)

When you have finished, press **Esc** to store the new setup and return to
the Options menu.

Passwords

To help prevent someone else using your computer and accessing your
information, you can give it a *password*. Then, whenever it is turned off
(either by pressing the **Fn-Esc** key or by a timeout) and on again, a
prompt will be displayed near the middle of the screen like this:
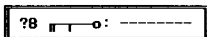
To use the computer, they must type the correct password and press **Enter.**

⚠️ *Caution: If you forget your password, you will not be able to use your computer, so make a note of it somewhere safe. If you cannot remember the password, contact your Sharp dealer for help.*

If you turn off from the Pop Up Menu, the *ownership information* and a large 'key' icon will be displayed in the bottom of the screen, like this:


```
┌── Choose Activity ──┐
│ File manager        │        Monday 1 July 1991
│ Address book        │
│ Scheduler           │
│ Editor              │
│ Worksheet           │
│ Calculator          │
│ Desk clock          │
│ To do list          │
│ Options...          │
└─────────────────────┘
```
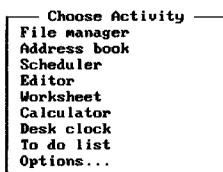
```
IF FOUND PLEASE RETURN TO:
Name:     Dave Smith
Address:  Careful Corp.
          Washington
          D.C. 200500
Tel:      111-222-33333
```
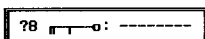
(The ownership information is what you entered while installing your computer. You can change it by using the INSTALL command (see Chapter 3) or by editing the text file D:\SYSTEM\OWNER.TXT, e.g. by using the Editor.)

To give your computer a password:

• Select the `Options` option from the Pop Up Menu and select `Programs options`.

• Select the `Ask for password` option and toggle it to `Yes`.

• Type a password of up to eight characters (which will be displayed as #s), then press **Enter**.

• Type the password again and press **Enter** to confirm it.

✓ *Note: The password will take effect the next time you turn off. Remember to keep a written note of your password, somewhere safe!*

To turn off your password, select `Ask for password` again. You will be prompted for the current password.

To turn on your password again, select the `Ask for password` option again and select `Use existing password` from the menu.
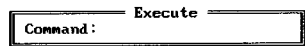
To change your password:

• Select the `Ask for password` option again and choose the `Change password` option. You will be prompted for the current password.

• Type the current password, and you will be prompted for the new one.

• Type the new password and press **Enter**, then type it again for confirmation.

Running Another Program

As long as you are not already running a DOS application, you can run a DOS command or application from the Pop Up Menu at any time:
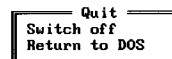
• Select `Options` from the Pop Up Menu and select the `Run another program` option:

    ┌───── Execute ─────┐
    │ Command: │
    └───────────────────┘

• Type the command and press **Enter**. When it finishes, you will see the message `Press ⏎ to continue`. Press **Enter** to return to the Pop Up Menu.

If you need more memory to run the command, or want to run several DOS commands, you should set the `Memory on exit` option to `Release` and exit the Pop Up Menu:

• Press **Esc**.

    ┌──── Quit ────┐
    │ Switch off   │
    │ Return to DOS│
    └──────────────┘

• Select `Return to DOS` from the menu and you will return to the DOS command line so you can type DOS commands.

• To return to the Pop Up Menu, type `POPUP` and press **Enter**.

Customizing the Pop Up Menu

You can customize the Pop Up Menu (but no other menu) as follows:

To remove an option, move to it, press **Del** and reply to the confirmation prompt. You cannot delete the `Options` option, which is displayed last.

To insert an option above the cursor:

• Move to the position in the menu where you want the new option.

• Press **Ins** and you will be offered a menu of items to insert:

```
┌────── Insert Item ──────┐
│ File manager            │
│ Address book            │
│ Scheduler               │
│ Editor                  │
│ Worksheet               │
│ Calculator              │
│ Desk clock              │
│ To do list              │
│ User program...         │
└─────────────────────────┘
```

• To insert one of the standard Pop Up Menu options, select the corresponding item from the menu.

• To insert a custom command, select `User program`:
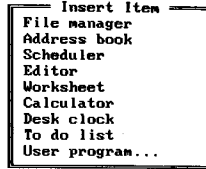
```
┌═══════ Text to appear in menu ═══════┐
│ Set to:                              │
└──────────────────────────────────────┘
```

• Type the menu option to add to the menu and press **Enter**.

```
┌═══════ Command to execute ═══════┐
│ Set to:                          │
└──────────────────────────────────┘
```

• Type the command to add and press **Enter**. This command will, in effect, be typed at the DOS command line when the user selects this menu option from the Pop Up Menu. You can type a DOS command or a command to run any other application that is installed on this computer.

For example, to add a backup option to copy all files from the current directory to the disk in drive A, you could type `COPY *.*`
`A:` and press **Enter**.

> ☑️ *Note: To execute a sequence of commands, store them in a batch file and type the batch file name as the command.*

To move an option (other than `Options`), delete it, then move to the new position and press **Ins** to insert it again.

7
Chapter

Using MS-DOS

What is MS-DOS

MS-DOS (Microsoft Disk Operating System) is a popular operating system which manages the computer's resources: memory, disk drives, printer, etc. Using MS-DOS as your operating system, you can run many of the application programs written for MS-DOS on your computer. MS-DOS version 3.3 is supplied on your computer.

What are Files

When you store information on a disk, MS-DOS creates a file to hold it, with a unique name given by you. By storing information in a file, you can retrieve it later, to edit it, print it, send it to another computer, etc.

If you are using an application (such as the Editor, Scheduler, or Address Book), it will create, name, save, or retrieve files for you, by instructing MS-DOS to do what you want.

MS-DOS also provides commands to manipulate (e.g. copy, rename, delete, and display) files directly, which are often quicker or easier to use than the applications. For example, if you have saved several files to the internal disk and want to copy them to an IC memory card, a single MS-DOS COPY command will do this for you. (Alternatively, you can use the File Manager application, described in Chapter 12.)

Naming Files

When you create a file you must give it a unique name. File names must follow certain rules. First, a file name generally has two parts: the name (up to 8 characters) and the extension (up to 3 characters), separated by a period. For example, ABC.TXT.

The name typically identifies the file. For example, ABC could be the name of a word processing file containing a memo. The extension typically categorizes the file. It is optional, but very useful for identifying files in the same category. For example, the ABC file might have the extension TXT to indicate it is a text file.

Note: All files stored in the same directory must have different names.

Acceptable Characters The following characters are acceptable in file names:

- Any letter in the alphabet (capitals and small letters are equivalent)

- Numerals: 0 through 9

- The following punctuation marks:
  ! @ # $ % & ^ ( ) - _ ' { } ~

Unacceptable Characters Characters other than those shown above are unacceptable characters in a file name. For example, commas, double quotation marks, and spaces are not acceptable.

Note: If you use a period in a file name, MS-DOS will assume that the following characters are the file's extension.

Unacceptable File Names Do not use any of the following as file names, as they reserved by MS-DOS for its own use: AUX, COM1, COM2, COM3, COM4, CON, LPT1, LPT2, LPT3, NUL and PRN.

Saving Files

When you save a file to a disk, MS-DOS stores additional information about the file in the file directory: the filename and extension, size (number of bytes), and date and time created or last updated. When you modify, delete, or rename a file, the directory is automatically updated to reflect the current status of the disk.

Starting MS-DOS

If you select the DOS prompt as your command shell, when you finish the installation process, the MS-DOS prompt (e.g. D: \>) will be displayed after the MS-DOS start-up messages:

```
DIP 80C88A-BIOS Version x.xxx
Copyright (c) DIP Research and Sharp Corp. 1991
All rights reserved

D:\>
```

This will also be displayed when you reboot (see below).

If you selected the File Manager as your shell, press **Esc** and select the
Yes option to return to the MS-DOS command line. If you selected the
Pop Up Menu as your shell, press **Esc** and select Return to DOS to
return to the MS-DOS command line.

Restarting the System

With the power on, you can restart MS-DOS by pressing the **Del** key
while holding down the **Ctrl** and **Alt** keys. This clears main memory and
reloads your command shell.

⚠️ *Caution: You could lose data if you restart the system from within an
application program without first saving your file.*

Specifying the Drive

MS-DOS assigns the letters A and B to your IC memory card drives, the
letter C, D and E to the internal drives and the letter F to external floppy
disk drive if installed. For details, see Chapters 1 and 14.

Changing the Logged Drive

To specify a drive in an MS-DOS command, type its drive letter followed
by a colon.

The default DOS command line prompt displays the current drive and
directory. For example, C:\DOS> shows that you are in the DOS
directory of drive C.

To change the logged drive, simply type the new drive letter and a colon,
and press **Enter**. For example, to select drive C, type C: and press **Enter**.

To change to another directory, use the CD command. For example, at
the C:\> prompt, type CD \DOS and press **Enter** to select the DOS
subdirectory. (For more details on using directories, see the *Directories*
section later in this chapter.)

Using the Keyboard

When the MS-DOS prompt is displayed, you can type commands.
Commands can be entered in upper or lower case, or a combination of
both. Commands and options must be separated by spaces. A command
only begins executing when you press the **Enter** key.

The keyboard keys function as described below.

Key	Function
Enter	Executes the MS-DOS command typed at the prompt.
Ctrl, Alt	Control, Alternate keys. Used with other keys as "shift" keys for certain control functions.
Fn	Function key. Used with certain keys to activate the second function. See Appendix B for keyboard layouts when the **Fn** key is used.
Esc	Escape key. Cancels the command line you are typing.
Backspace	Backspace key. Erases the character to the left of the cursor.
Pause	Halts scrolling of the screen. To continue scrolling, press any key. **Ctrl-S** performs the same function.
Break	Hold down the **Ctrl** key and press **Pause** to interrupt execution of the current command or an MS-DOS batch file. **Ctrl-C** performs the same function.
Prt Sc	Hold down the **Fn** key and press **SysRq** to print the currently displayed screen to the printer. To print out the contents of a screen containing bit-mapped graphics using **PrtSc**, first execute the GRAPHICS command.
Ctrl-P	Turns on or off screen printing to the printer. Everything that is printed on the screen is echoed to the printer.

Note: Take care not to confuse the 0 (zero) and O (Upper case o) keys, and the 1 (one) and l (lower case L) keys when entering commands and data.

MS-DOS Editing Keys

To continue a long command on the next line, press **Ctrl-Enter** and continue typing the command.

To enter ASCII characters which are not on the keyboard, hold down **Alt-Fn** and type the character's ASCII code on the *numeric keypad* (numbers in blue on the front face of certain keys). Release **Alt-Fn** and the character is displayed on the screen. For a list of ASCII codes, refer to Appendix A.

Certain keys have special functions when used at the MS-DOS prompt, to make entering and editing commands easier:

Key	Function
F1	(COPY1) Displays the last command line one character at a time.
F2 c	(COPYUP) Displays the last command line up to the first occurence of the character c.
F3	(COPYALL) Displays all of the last command line.
F4 c	(SKIPUP) Skips over the characters in the last command line up to the first occurence of character c.
F5	(NEWLINE) Stores the current command line for editing and displays a prompt for new input.
F6	(EOF) Types an End-of-file character **Ctrl-Z** (^Z).
Del	Skips over a character from the last command line.
Ins	Toggles insert mode.
Esc	Cancels the current command line and allows re-entry on the next line.

Using Commands

This section introduces some simple but useful MS-DOS commands.

Displaying Contents of Disk - DIR

In its simplest form, DIR displays a list of all files in the current directory, with filename, extension, size in bytes, and the date and time that the file was last modified. Type `DIR` and press **Enter**.

To list information about a particular file, type the name and extension after the command. For example, to display information about LETTER.DOC, type `DIR LETTER.DOC` and press **Enter**.

You can add two options (or switches) to the end of a DIR command to make it more convenient when listing a large number of files. To make DIR list files a screenful at a time, add `/P`. To make DIR list just the names and extensions, add `/W`.

Global Commands - Wild cards

Global commands are commands that are carried out on a group of files. Instead of typing the exact file name to copy, delete, rename, or whatever, you type a name which specifies a group of filenames, using

two special characters, query (?) and asterisk (*). These are called *wild cards* and can replace part or all of the file name or extension.

The ? Character

? specifies a single wild character. For example, DIR FILE.0? will list FILE.01, FILE.02, and FILE.03, etc, but not FILE.10.

The * Character

* specifies any characters from that position onwards within the name or extension. For example, DIR *.TXT would list all filenames with the extension TXT, such as ABC.TXT, SHARP.TXT, and SALES.TXT, while COPY *.* A: would copy all files in the current directory to drive A.

⚠ *Caution: Although global commands can save a lot of time and typing, use them very carefully, especially with the DEL command. For example, DEL*.* means delete all the files in the current directory!*

Displaying Contents of a File - TYPE

TYPE displays the contents of a text file. To stop the display scrolling, press **Ctrl-S**. To abort the process before the end of the file is reached, press **Ctrl-C**. (Don't use TYPE for files which are not simple text, as you won't be able to read the result.)

Copying a File - COPY

The COPY command copies files either individually or in groups, e.g. from one directory or disk to another.

Copying a File to Another Disk

To copy EXAMPLE.TXT from the current directory to drive A, type COPY EXAMPLE.TXT A: and press **Enter**. To copy NEW.TXT from drive A to the current directory, type COPY A:NEW.TXT and press **Enter**.

Copying a File to the Same Directory

To copy a file to the same directory you must give the copy a different name. For example, type COPY LETTER.TXT MEMO.TXT and press **Enter**.

Changing a File's Name - RENAME

To change a file's name or extension, use the RENAME (REN) command. Using the wild card characters, * and ?, you can even rename groups of files in a similar way.

For example, to rename LETTER.TXT to MEMO.TXT, type REN
LETTER.TXT MEMO.TXT and press **Enter**. (If you choose a name which
already exists on that disk, or if you mistype the name of the file you
want to rename, you will get an error message.)

You can use wild cards to rename groups of files. For instance, to change
the extension .TXT to .DOC, type REN *.TXT *.DOC and press **Enter**.

To rename a file on another drive, type the drive name before the file
name. For example, to rename TEST.01 on drive A to TEST-01.DOC, type
REN A:TEST.01 TEST-01.DOC and press **Enter**.

Deleting a File - DEL

At some point your disks may become cluttered with files that you no
longer need. Deleting unwanted files is an important part of good
housekeeping for your system. You can delete single files or groups of
files with the DEL command.

For example, to delete EXAMPLE.TXT type DEL EXAMPLE.TXT and
press **Enter**. To delete all files with the extension .BAK, type DEL *.BAK
and press **Enter**.

⚠ *Caution: Be careful when using DEL with wildcard characters. It is easy to
delete the wrong files by mistake!*

If you type DEL *.* (which would delete all the files in the directory),
you will be asked for confirmation: Are you sure (Y/N)? To delete the
files, type **Y** and press **Enter**. To abort the process, type **N** and press **Enter**.

Directories

To organize your files, you can divide them into named groups, using
directories.

Creating a Directory - MKDIR or MD

To create a directory called WP (for your word processing program and
files) on drive E, select drive E and type MD WP and press **Enter**. Use the
DIR command to list the current directory and you will see a new entry,
WP, with the label <DIR> in place of the normal file size.

Each disk starts off with a single directory called the root. When you
create directories, you either place them in the root, or in other directories
which you have created, producing a "tree" structure.

Pathnames

To refer to a file in another directory, you can use a *pathname*. This defines on which path in the tree the file lies. The \ (backslash) character is used to indicate the root directory and to separate names in a path.

For example, to copy LETTER.TXT from drive A to the WP directory on drive E, you could type `COPY A:LETTER.TXT E:\WP` and press **Enter**.

⚠️ *Caution: At the top of each directory listing are the entries . and .. which represent the directory and its parent directory. Do not delete these entries!*

Removing a Directory - RMDIR or RD

To delete a directory, first delete all files and directories from the directory with the DEL command, then in its parent directory, type `RD` followed by the directory name.

Changing the Working Directory - CHDIR or CD

MS-DOS always considers you to be 'in' a directory, your current directory. If you type a filename without a path, or omit the directory name from a command which expects one, MS-DOS will assume you mean your current directory. If you want to work with files in another directory, you can use pathnames, but you'll generally find it easier to move to the directory i.e. to make it your current directory.

To change your current directory, use the `CD` command. For example, to move to the `WP` directory on the current drive, type `CD \WP` and press **Enter**. To move to the root directory, type `CD \` and press **Enter**.

Configuration Files

MS-DOS uses two files when starting up: CONFIG.SYS and AUTOEXEC.BAT. These are set up automatically when you perform the initial installation process, and changed automatically if you use the INSTALL utility. You can also edit them manually, with the built-in Editor. For further details of these files see Appendix G.

⚠️ *Caution: Do not edit these files manually unless you know what you are doing. Certain mistakes are difficult to correct!*

The Standard MS-DOS Commands

The following standard MS-DOS 3.3 commands are provided:

APPEND, ASSIGN, CHKDSK, COMMAND, COMP, DEBUG, DISKCOMP, EDLIN, EXE2BIN, FASTOPEN, FIND, GRAFTABL, GRAPHICS, JOIN, KEYB, LABEL, MODE, MORE, NLSFUNC, PRINT, RECOVER, REPLACE, SELECT, SHARE, SORT, SUBST, SYS, TREE and XCOPY.

And the following drivers and system files:

ANSI.SYS, COUNTRY.SYS, KEYBOARD.SYS, EMM.SYS, PRINTER.SYS and RAMDRIVE.SYS.

For details see any MS-DOS 3.3 manual. (ANSI.SYS, EMM.SYS and RAMDRIVE.SYS are also described briefly in Appendix G.)

Enhanced versions are provided of ATTRIB and FORMAT, which are described in detail in subsequent sections.

The Extra Commands

The remainder of this chapter describes the extra (and modified) commands provided. These are multi-lingual, support use of extended filespecs, and display help information if you use the /? switch. For example, to display the help for OFF, type OFF /? and press **Enter**. If you are typing multiple switches, you only need type the first / character.

The command descriptions use the following special terms:

drive   A drive letter, such as A, B or C.

file   A filename which uniquely identifies a single file. It is the exact name of a file, including its extension. For example, MONTHLY.ACT.

path   A directory name which takes the form:
            [\]{dir\}dir. For example:
            DATA\JULY or \SYSTEM\BACKUP

            A path which starts with \ is rooted in the root directory and is termed an *absolute reference*. It can be used from any directory on the drive. A path which does not start with \ is rooted in the current directory and is termed a *relative reference*. It can only be used from this one directory.

switch	A / followed by one or more characters, which modifies how a command works.
xfilespec	An extended file specification, a non-standard filename, which may include the standard DOS wildcard characters * and ? to specify a group of files, but may also begin with a drive wildcard (? :) to specify all drives, end with an exclusion clause (, -filename) to exclude a group of files, or use $ to specify all directories on your DOS search path. For example:

C:*.*,-*.BAK - all files in the current directory on drive C, other than .BAK files.

?:NOV*.*,*.TXT,*.BAK - files that start with NOV or have the extension TXT or BAK, in the current directory on all drives.

$*.BAT - all batch files on your path

Note: You can only use xfilespecs with the modified and extra commands, not with the standard DOS commands.

ATTRIB (File attributes)

ATTRIB [xfilespec] [switches] - Display file attributes.

ATTRIB [xfilespec] +[R][A][S][H] [switches] - Set file attributes.

ATTRIB [xfilespec] -[R][A][S][H] [switches] - Reset file attributes.

xfilespec is an extended file specification for the files to process.

/N	display names only, not paths.
/P	pause after each screenful.
/S	operate on files in subdirectories too.

If neither + nor - is supplied, ATTRIB simply lists the files and their attributes. If an attribute is set, the letter appears in the attribute field. If an attribute is clear, a - sign is shown. For example:

-A-- AUTOEXEC.BAT

If + is supplied, ATTRIB will set attributes. If - is supplied, ATTRIB will reset (clear) attributes. The attributes are as follows:

R (read only) - this file cannot be changed, deleted or renamed.

A (archive) - this file has not been archived since being created or changed.

S (system) - this file is hidden from normal DOS file access (e.g. the DIR command) and cannot be deleted.

H (hidden) - this file is hidden from normal DOS file access (e.g. the DIR command) and cannot be deleted.

Note: You cannot change the attributes of the files stored on drive C, as they are actually stored in ROM.

DIAG (Diagnostics)

DIAG - runs the internal diagnostics program. See Appendix F for details.

FORMAT (Format IC memory card/diskette)

FORMAT drive [switches] - Format RAM IC memory card or diskette in drive.

drive is an IC memory card or diskette drive name, i.e. A:, B: or F:
/S   copy the operating system files to the disk.
/V   prompt for a volume label once formatted.
/T:tracks   the number of tracks on the disk
/N:sectors the number of sectors per track

You need to format a new IC memory card or diskette before you can use it to store information. To format the internal RAM disk, use INSTALL.

Caution: Formatting an IC memory card or diskette completely erases any information on it, so be sure that there is no information on it that you want to keep.

To format an IC memory card in drive A, type:

FORMAT A: **Enter**

To format a standard density (720 KB) diskette in the optional FDD unit, type:

FORMAT F: /T:80/N:9 **Enter**

To format a high density (1.44 MB) diskette in the optional FDD unit, type:

FORMAT F: /T:80/N:18 **Enter**

KSIM (Simulate keypresses)

KSIM file [/n] - Simulate keys specified by file.

file is a filename specifying the file containing the key codes. If it does not include an extension and there is no such file, an extension of .KCF is assumed.

/n   set delay time to n seconds (default 10, range 0 to 360).

KSIM provides the key presses specified by file to the operating system or applications. File must have been prepared using the KSIMCOMP or LEARN command. (It provides similar but much more flexible facilities to redirecting standard input from a file.)

KSIM will typically be used from a batch file, to automate processes that require keyboard input. It loads as a TSR, claiming enough memory for itself (about 17 KB) and a small disk buffer.

Each time the operating system or application requests a key, KSIM will read the next character from its internal file buffer and place it in the keyboard input buffer, exactly as if it had been typed. When KSIM has provided all the characters in the file, it de-installs itself, releasing all the memory it had claimed and returning to normal keyboard input.

If the user presses a key while KSIM is active, it will stop providing characters, to allow user input instead. Once user input has ceased, KSIM will wait approximately 10 seconds (or the delay time specified by /n) and then continue providing characters from where it stopped in the file.

If the KSIM file invokes a command (such as PAUSE) which clears the keyboard buffer before requesting a character, characters may be lost. KSIM will feed characters into such a command until one of the following events occurs:

• It reaches the end of the KSIM file

• It reads a 'delay' command from the file (such as {1}; see KSIMCOMP)

When KSIM terminates (for whatever reason), it de-installs itself and releases the memory it had claimed. However, if any other TSRs have been installed since KSIM, you will have to remove these first to use the memory that had been claimed by KSIM.

For example, to take keyboard input from the KSIM file TASK2.KCF, type:

KSIM TASK2 **Enter**

For example KSIM files, see KSIMCOMP.

KSIMCOMP (Compile file for KSIM)

`KSIMCOMP wildfile1 [wildfile2]` - Compile files for KSIM.

`wildfile1` is a file or directory name specifying the source file(s) to compile. If an extension is not specified, .KCS will be assumed.

`wildfile2` is a file or directory name specifying the object file(s) to create. If an extension is not specified, .KCF will be assumed. If wildfile2 is not specified, wildfile1 will be used but with the extension .KCF.

KSIMCOMP compiles ASCII text source files describing the key presses required, into object files which can be used by KSIM.

For example, to compile all KCS files in the subdirectory KSOURCE to KCS files with the same name, type:

`KSIMCOMP KSOURCE` **Enter**

Creating a Source File

A KSIM source file is an ordinary ASCII text file, used to specify the keypresses. Most alphanumeric characters and symbols stand for themselves, with the following exceptions:

- **Enter** and **Tab** are ignored, so you can use them to help lay out the source file to increase legibility.

- `;` is ignored, together with any characters after it, up to the next **Enter**, so you can use it to include comments in the source file.

Many of these reserved words produce extended ASCII codes, i.e. 00h followed by the appropriate ASCII code.

> *Note: You can simulate a wide range of key presses using KSIM, but not* **Ctrl-Alt-Del** *(use the REBOOT command),* **Caps Lock** *or* **Num Lock**.

Control keys

{CR}, {LF}, {CRLF}, {ESC}, {BS}, {TAB}, {BTAB}, {INS}, {DEL}

Note that you should use {CR} to represent the **Enter** key.

Function keys

{F1}, {F2}, {F3}, {F4}, {F5}, {F6}, {F7}, {F8}, {F9}, {F10}

Shift function keys

{SF1}, {SF2}, {SF3}, {SF4}, {SF5}, {SF6}, {SF7}, {SF8}, {SF9}, {SF10}

Control function keys

{CF1}, {CF2}, {CF3}, {CF4}, {CF5}, {CF6}, {CF7}, {CF8}, {CF9}, {CF10}

Cursor movement

{HOME}, {END}, {PGUP}, {PGDN}, {LFT}, {RGT}, {UP}, {DN}

Control cursor keys

{CHOME}, {CEND}, {CPGUP}, {CPGDN}, {CLFT}, {CRGT}

Internal applications

Use {PopUp} followed by the key you would press to select from the Pop Up Menu. For example, to select the File Manager, {PopUp}F.

You can use these sequences to hot-key into the built-in applications and accessories from DOS or DOS applications, but they may be ignored if you are already using an application.

Miscellaneous

{{}	The { character
{}}	The } character
{;}	The ; character

Comments

A comment in the source file is entered using a semi-colon ';'. All spaces and tabs before the semi-colon, the semi-colon itself and the characters after the semi-colon until the end of the line are ignored.

For example:

```
{F10} FRCONFIG.SYS{CR}  ; LOAD CONFIGURATION FILE
```

The tab characters after the {CR} form part of the comment and are ignored.

Control

{STOP}	Abort execution of the control file
{START}	Restart the control file from the beginning.
{n}	Delay execution for n seconds. n may be between 1 and 65535 (18 hours, 12 minutes, 15 seconds).

ASCII characters

{#n}   ASCII character n, where n is in the range 0 to 255. For
                    example: {#1} is ASCII 01, {#32} is a space.

{^C}   Control character C, where C is in the range A to Z. For
                    example: {^A} is **Ctrl-A** (identical to {#1}), {^Z} is **Ctrl-Z**.

LEARN (Record keystrokes for KSIM)

LEARN `file` - Record keystrokes for KSIM in `file`.

`file` is the name of the file to store keystrokes in. If an extension is not
supplied, .KCF is assumed.

This command installs LEARN as a TSR and records all subsequent
keystrokes in `file` until **SysRq** is pressed. At this point, LEARN will
de-install itself, freeing the memory it had claimed.

> *Note: If any other TSRs have been installed since LEARN, you will have to
> remove these first to gain access to the memory claimed by LEARN.*

LEARN produces a file that can be used directly by KSIM; you do not
need to compile it.

For example, to record keystrokes in EDIT.KCF:

LEARN EDIT.KCF **Enter**

OFF (Turn off)

OFF   - Turn the machine off.

OFF /C - Turn off and clear drive E.

> *Caution: Use the OFF/C command with care. It deletes all user data from
> drive E!*

The OFF command is equivalent to turning off normally by pressing **Off**.
It is designed to be used from within batch files, for example, to save
power once a long batch file has finished execution.

You would only use the /C switch if you wanted to erase all user files
from drive E, for example, if it has become corrupted. Since this is a fairly
drastic action, a confirmation prompt will be displayed before doing this.

(The operating system files and utilities will be unaffected since they are stored in ROM.)

PASSWORD (System password)

PASSWORD - prompt for system access password.

PASSWORD /C - change or set system access password.

PASSWORD /D - disable system access password.

PASSWORD /E - enable system access password.

If there is no password set, PASSWORD/C prompts for a password. Type a password of up to eight characters and press **Enter**, then type it again for confirmation and press **Enter**. This stores the password and enables it. If there is already a password set, you must type the current password before you can change it.

Once you have set a password, PASSWORD/D disables it, but you must type the current password first. To enable it, use PASSWORD/E.

If the password is enabled, a user will see this prompt when they turn on:

```
?8 ┌─┬─o: ────────
```
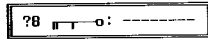
You must type the correct password and press **Enter** before you can use the computer.

REBOOT (Reboot system)

REBOOT /C - Reboot COLD.

REBOOT /W - Reboot WARM.

REBOOT /F - Reboot FULL.

⚠ *Caution: REBOOT/C destroys the contents of the RAM drive E. REBOOT/F is even more dangerous, as it also erases the system setup information and drive D. Use this command with caution!*

REBOOT /W is equivalent to pressing **Ctrl-Alt-Del**. This will typically be used after making changes to the system setup, such as altering CONFIG.SYS. REBOOT /C is equivalent to pressing the cold boot reset

switch. REBOOT /F makes the computer behave as if you have just turned it on for the very first time.

For example, the following batch file installs a different version of CONFIG.SYS and AUTOEXEC.BAT to suit an application, then reboots automatically to bring the changes into effect:

```
CD \
COPY ANSIBOOT.SYS CONFIG.SYS
COPY APPLIC.BAT AUTOEXEC.BAT
REBOOT /W
```

SETUP (Hardware setup)

SETUP switches - Configure settings.

SETUP /On - Read setting n into ERRORLEVEL.

/A toggle all sounds.   /A+ turn on.   /A- turn off.

/C toggle keyclick.   /C+ turn on.   /C- turn off.

/L toggle low power.   /L+ turn on.   /L- turn off.

/Mn set screen mode to n (0 to 7; see notes).

/On read current setting n (0 to 11; see notes) into ERRORLEVEL.

/Pn set power down time to n minutes (0, 1, 2 or 5).

/RBn set baud rate to speed n (0 to 7; see notes).

/RDn set data bits to n (7 or 8).

/RPO set Odd parity.   /RPE set Even parity.   /RPN set No parity.

/RSn set stop bits to n (1 or 2).

/Sn set processing speed to n MHz (5 or 10).

⚠ *Caution: When using multiple switches with this command, you should include the / at the start of each switch, to avoid confusion.*

SETUP allows you to configure system hardware settings from the command line or within a batch file. You can also perform the same operations (with the exception of changing screen mode) from the Pop Up Menu Setup the machine option (see Chapter 6).

The recommended screen modes are 1, 3 and 7. Mode 1 is 40 column mode, which uses larger characters to improve legibility in difficult viewing conditions. Mode 3 is 80 column mode, showing selected text in bold. Mode 7 is 80 column mode, showing selected text by reversing.

When you run a built-in application, the screen changes to mode 7. When you exit the application, the screen will change back to the previous mode automatically.

Note: If you experience problems with the display when running third party applications (such as screen flicker or parts of the screen remaining blank), try typing MODE 40 *or* MODE 80 *and pressing* **Enter***, at the DOS prompt. Alternatively, change screen mode by using the SETUP command.*

The speed numbers used to set the baud rate are as follows: 0 (110), 1 (150), 2 (300), 3 (600), 4 (1200), 5 (2400), 6 (4800) and 7 (9600).

When used to **change** settings, ERRORLEVEL will be set to 0 on return if the operation succeeds, or 1 if it fails (e.g. argument out of range).

SETUP also allows you to **check** the current settings from within a batch file, by using the /On switch. This reads current setting n into ERRORLEVEL as follows:

/On	ERRORLEVEL returned
/O0	Low power mode: 0=off, 1=on.
/O1	Power down time in minutes (0, 1, 2 or 5).
/O2	Keyclick: 0=off, 1=on.
/O3	All sounds: 0=off, 1=on.
/O4	Screen mode (0 to 7).
/O5	Cpu speed in MHz (5 or 10)
/O7	Character set: 0=Scandinavian, 1=default.
/O8	RS-232C baud rate setting (0 to 7; see above).
/O9	RS-232C data bits (7 or 8).
/O10	RS-232C stop bits (1 or 2).
/O11	RS-232C parity: 0=none, 1=odd, 3=even

For more background information, see the description of the Pop Up Menu Setup the machine option, in Chapter 6.

For example, to set the processing speed to 5MHz and the RS-232C port to 9600 Baud, 1 stop bit, 8 data bits, and no parity:

SETUP /S5/RB7/RD8/RS1/RPN **Enter**

8
Chapter

LapLink Utility

What is LapLink

LapLink is a *communications program*, a utility which lets you exchange files with another computer. Use it, for example, to transfer documents you've prepared at home to a desktop computer in your office.

Setting Up

Before you can begin transferring files to or from another computer, you must connect your computer (referred to as the **local computer** by LapLink) to the computer that will send or receive files (referred to as the **remote computer** by LapLink) using the optional Serial conversion cable (CE-302CB) and LapLink cable (CE-303CB), as described below. (For details on each cable, see Chapter 14.)

Prepare the two computers for LapLink communications as follows:

- Connect the 10-pin male connector end of the serial conversion cable to the serial port on the left panel of your computer.

- Connect the single 9-pin female connector end of the LapLink cable to the serial conversion cable.

- Connect either the 9-pin or 25-pin connector on the other end of the cable to the 9-pin or 25-pin serial port of the remote computer.

- Turn on both computers.

- To use LapLink on the remote computer for the first time, the MS-DOS MODE command must be available. To check, type MODE and press **Enter** at the MS-DOS prompt on the remote computer. If Bad command or file name is displayed, the MODE command is not available: find the MODE.COM file and either move to the directory that contains it, or move the file to a directory on the DOS search path. If you get any other message, the MODE command is available.

- At the MS-DOS prompt on your computer, type LAPLINK and press **Enter**. You will see the LapLink screen with the following message:

  ```
  Press [F10] to install LAPLINK on remote system.
  ```
  Press **F10**.

- The screen will change and prompt you to connect the computers with the supplied cable and enter the number of the serial port you are using on the remote computer. Since you have already connected the cable, simply enter the port number, 1.

- The screen then prompts you to enter two lines on the remote computer. If you have connected to serial port 1 on the remote computer, enter the following two lines at the remote computer, pressing **Enter** at the end of each line:

  ```
  MODE COM1:2400,N,8,1,P
  CTTY COM1
  ```

  If you have connected to port 2, substitute COM2: for COM1: in the above two lines.

  After you enter the second line, the remote computer will appear to lock up: this is normal.

- Back at your computer, press any key except **Esc**. LapLink will copy itself to the remote computer, and display its progress. When copying has finished, the LapLink main screen will appear on both the local and remote computers, indicating that both computers are ready for you to use LapLink.

The LapLink utility is bidirectional; you can use either computer to control the other. The controlling computer becomes the local computer and the controlled computer becomes the remote computer.

LapLink Screen

Once you have set and run LapLink, you will see the following screen on both computers:

```
LAP-LINK (RI-C2.04) Copyright 1986-89,    Traveling Software Inc.
== Local Drive (C:) 0 Free ===========  == Remote Drive (C:) 5785600 Free ===
.              <DIR>    25-03-91  12:31  | .            <DIR>   7-26-90  5:40p
..             <DIR>    25-03-91  12:31  | ..           <DIR>   7-26-90  5:40p
4201.CPI       17089    8-12-88   12:00  |
ANSI.SYS       1647     8-12-88   12:00  |
APPEND.EXE     5794     8-12-88   12:00  |
ASSIGN.COM     1530     8-12-88   12:00  |
CHKDSK.COM     9819     8-12-88   12:00  |
COMP.COM       4183     8-12-88   12:00  |
COUNTRY.SYS    11254    8-12-88   12:00  |
DEBUG.COM      15866    8-12-88   12:00  |
DISKCOMP.COM   5848     8-12-88   12:00  |
EDLIN.COM      7495     8-12-88   12:00  |
EMM.SYS        15292    8-12-88   12:00  |
EXE2BIN.EXE    3050     8-12-88   12:00  |
FASTOPEN.EXE   3888     8-12-88   12:00  |
FORMAT.COM     11681    8-12-88   12:00  |
GRAFTABL.COM   6136     8-12-88   12:00  |
GRAPHICS.COM   13943    8-12-88   12:00  |
JOIN.EXE       9612     8-12-88   12:00  |
KEYB.COM       10384    8-12-88   12:00  |
= C:\DOS ==============================  == D:\DOS\BACKUP ==================
                                            <04/01/91 SNOHT COM1: 115200
 COMMANDS: Log Tree Copy Wildcopy Group Options View Erase Rename Dos Quit
```

This screen is divided into four areas:

The Local Drive Window is on the left side of the screen and lists the files in the current drive and directory of the local computer. (The drive and directory are indicated at the bottom of the window.)

The Remote Drive Window is on the right side of the screen and lists the files in the current drive and directory of the remote computer. (The drive and directory are indicated at the bottom of the window.)

The Message Line is located just below the local drive and remote drive windows and split into two display areas. The left half of the line displays messages which may require you to take some action or may be merely advisory. The right half shows the currently selected serial port number and transmission rate. (You can change these using the **Options** command, described later in this chapter.)

The Command Line appears at the bottom of the screen, displaying the currently available LapLink commands.

Making Selections

To select a file for a LapLink command, move the cursor to it, using the following keys:

- To move between the local drive and remote drive windows, use the **Right Arrow** and **Left Arrow** keys.

- To move the cursor a line at a time, use **Up** or **Down Arrow**.

- To move to the last file displayed, press **End**. To move to the first file displayed, press **Home**.

- To scroll the current window, press **PgDn** or **PgUp**.

- To move to the first file in the directory, press **Ctrl-Home**. To move to the last file in the directory, press **Ctrl-End**.

Executing LapLink Commands

There are two ways to execute LapLink commands:

- Press the first (highlighted) letter of each command - **C** for Copy, **L** for Log, etc.

- Press **Space Bar** or **Backspace** to move the cursor to the command line, then move to the command and press **Enter**.

When you execute **Tree**, **Group** or **Options**, a list of secondary commands is displayed. You select these in the same way as the primary commands.

Once you execute a command on the local computer, the remote computer displays the following message on the message line:

        Remote system in control ...

The primary commands and their functions are described below:

Log logs a new disk, drive or directory.

Tree displays the directory structure in a graphical form and lets you log on to any level in the structure or modify the structure by creating and removing directories.

Copy copies single files or entire directories from one computer to the other.

Wildcopy copies multiple files using MS-DOS wild-card characters.

Group accesses secondary commands that let you tag files for group copying or erasing.

Options accesses various options. For example, to set the transmission rate, adjust the colors of your monitor, speed up copying, or change parameters for selecting files to be copied.

View displays the contents of a text file on the screen.

Erase erases (deletes) a file or an empty directory.

Rename renames a file.

Dos returns you temporarily to the operating system.

Quit quits LapLink.

Using LapLink

This section describes how to use some commonly-used commands.

Customizing LapLink

You can use the **Options** command to customize LapLink to suit your particular requirements. Select the `Options` command (e.g. press **O**) and the following screen will be displayed:

```
                        O P T I O N S    M E N U
                              LAP-LINK
============= Copy Options =========== ========= Communications Parameters ======

 Copy from Subdirectories:    No  Yes  Baud:    115200 57600 38400 19200 9600

 Copy Newer Files Only:       No  Yes  Communications Port:          1    2

 Confirm before Overwriting:  No  Yes  Turbo Copy Mode:             No   Yes

 Copy/Display Hidden Files:   No  Yes  ======= Monochrome and Color Display ======

 Copy Date Range:  = > < >= <= <>
                                       LoLight Color:    7 6 5 4 3 2 1 0
 Copy Date:              mm/dd/yy      (displays)        █ █ █ █ █ █ █ █

========== Directory Options ========  HiLight Color:    7 6 5 4 3 2 1 0
                                       (displays)        █ █ █ █ █ █ █ █
 Sort By:   Name .Ext Size Date None
                                       BackGnd Color:    0 1 2 3 4 5 6 7
 Right Window:        Remote  Local    (displays)        █ █ █ █ █ █ █ █

 OPTIONS:  Save Restore Quit
```

The Options menu is divided into four windows: Copy Options, Directory Options, Communications Parameters, and Monochrome and Color Display, each containing its own options. To change any setting move the cursor to the option using the **Up** or **Down Arrow** key, then

press the **Right** or **Left Arrow** keys to change the setting. The changes take effect when you leave the Options menu.

Note: When you change the settings of the following options on the local computer, the corresponding settings are automatically changed on the remote computer:

- *all six options in the Copy Options category.*

- *the Sort By option in the Directory Options category.*

- *the Baud and Turbo Copy Mode options in the Communications Parameter(s) category.*

When you change settings, they will be displayed on the message line of the LapLink main screen as shown below:

```
<04/01/91 SNOHT COM1: 115200
```
            └── Baud rate set to 115200
           └── Communications Port set to 1 (COM1)
          └── Turbo Copy Mode set to Yes
         └── Copy / Display Hidden Files set to Yes
        └── Confirm before Overwriting set to Yes
       └── Copy Newer Files Only set to Yes
      └── Copy from Subdirectories set to Yes
   └── Copy Date set to 04/01/91
  └── Copy Date Range set to < (before 04/01/91)

The currently selected port number and transmission rate are always displayed but the other settings are only displayed if you change them from the default settings.

Options Menu Commands

The command line at the bottom of the Options menu displays three commands: **Save**, **Restore**, and **Quit**.

Quit quits the **Options** command and returns to the LapLink screen. Any changes made in the settings take effect when the LapLink screen reappears and remain set until the power is turned off.

Restore restores all settings to their original default values. When you select this command, you are prompted with `Ok to restore default settings? (Y/N)`. Press **Y** to restore the original settings, or any other key to leave the settings as they are.

Save saves any changes made to the settings for use in future sessions. When you select this command, you are prompted with `Ok to save settings? (Y/N)`. Press **Y** to save the settings, or any other key to discard the settings.

Copy Options

Copy from Subdirectories When copying a directory, set this option to Yes to copy its subdirectory to corresponding subdirectories on the target disk. Otherwise, LapLink will not copy files from subdirectories.

Copy Newer Files Only When copying files, set this option to Yes to overwrite files on the target disk if a more recent version of the file is found on the source disk. Unchanged or older copies of a file will not be copied. Otherwise, all files with the same name will be overwritten on the target disk.

Confirm before Overwriting Set this option to Yes to make LapLink ask for confirmation before overwriting files of the same name on the target disk. Otherwise, files will be automatically overwritten.

Copy/Display Hidden Files Set this option to Yes to display DOS system files and other hidden files on the LapLink screen - allowing them to be copied to another disk. Otherwise, these files will not appear and cannot be copied.

Copy Date Range and **Copy Date** When copying, these options can be used together, to specify a range of creation dates for files. Files created or modified before or after the specified range will not be copied.

Directory Options

Sort By This option controls the order in which files and directories are displayed on the LapLink screen.

Right Window With this option you can display files on the local computer in both windows of the LapLink screen. This simplifies file copying from one directory to another and from one drive to another on the same computer.

Communications Parameters

Baud specifies the baud rate at which the two computers communicate.

Communications Port tells LapLink which serial port (COM1 or COM2) is being used on each computer.

Turbo Copy Mode if set to YES speeds up transfers by copying larger blocks of data at a time.

Monochrome and Color Display

LoLight Color affects non-highlighted text and file names.

HiLight Color affects the cursor, prompts, messages, and other highlighted text.

BackGnd Color affects the background color.

Changing Drive or Directory

To change the drive or directory on the local computer, move the cursor to the local drive window and select the **Log** command. To change the drive or directory on the remote computer, move the cursor to the remote drive window and select the **Log** command.

> *Note: You can also change the current drive or directory by using the* **Tree** *command.*

When you execute the **Log** command, the following prompt appears:

```
Log to:
```

If the cursor is positioned on a directory, that directory will appear after the prompt. If the cursor is positioned on a file, the current pathname will appear after the prompt. Simply press **Enter** to accept the displayed pathname, or type the desired drive name or pathname, and then press **Enter**.

Copying Files

Use the **Copy** or **Wildcopy** command to copy a file or files from one computer to the other. The **Copy** command copies the file(s) selected by the cursor, and the **Wildcopy** command copies file(s) that match a name typed on the message line. Unless otherwise specified, both commands copy files to the current directory on the target disk. If you set the Copy from Subdirectories option in the Options menu to Yes, files will be copied from each subdirectory on the source disk to the corresponding subdirectory on the target disk. If the subdirectory does not exist on the target disk, LapLink will create it.

Using the Copy Command

Copying a Single File

Move the cursor to the file to copy. Move the cursor to the other window and select the destination directory for the file to be copied. Press **C** to copy the file.

Note: You cannot copy any files to drive C as this is a ROM drive.

Copying a Directory

There are two ways to copy an entire directory:

• With the cursor in the target disk window, type **T** to select the **Tree** command and display the tree structure of the target disk with the current directory highlighted. Move the cursor to the directory under which you want to make the target. Press **M** to select the **Make-dir** command, and type the desired directory name in response to the prompt

```
Make new direcory:
```

Exit the **Tree** command by pressing **Q** (for **Quit**). Select the directory you have just made on the target disk, move the cursor to the window of the source computer and locate the desired source directory. Press **C** to select the **Copy** command and all the files in the source directory will be copied into the directory displayed for the target disk.

• Select the Options menu and set the Copy from Subdirectories option to Yes, then exit the Options menu. Move the cursor to the directory you want to copy and press **C** to select the **Copy** command. This will copy the directory to the same directory on the target disk, together with all the files under that directory.

Note: If the Copy from Subdirectories option in the Options menu is set to No, all the files in the specified subdirectory are copied into the directory displayed for the target disk.

Copying a Group of Files

To copy a group of files, first tag the files using the **Group** command. Then execute the secondary command **Copy** in the **Group** command, or quit the **Group** command and execute the primary **Copy** command. The **Group** command is described later in this section.

Using the Wildcopy Command

The following prompt appears when you execute the **Wildcopy** command:

```
Wildcopy:*.*
```

You can use MS-DOS wild-card characters * and ? (described in Chapter 7) in the **Wildcopy** command, or simply type in the desired file name.

Backing Up an Entire Disk

You can use the **Wildcopy** command to back up an internal disk onto IC memory cards, even if there are too many files to fit onto a single IC memory card. First enter the Options menu and set the `Copy from Subdirectories` option to Yes. Then log onto the root directory of the internal disk. Insert a formatted blank IC memory card in the target drive and press **W** to select the **Wildcopy** command. At the `Wildcopy:*.*` prompt, press **Enter**. LapLink will then copy as many files as possible onto the IC memory card. When it is full, you will see the following message:

```
Target disk full! Use Wildcopy to continue...
xxx file(s) copied 100% error free.
Copy aborted. Press any key to continue...
```

Press any key on the keyboard. Replace the IC memory card in the target drive with another blank, formatted IC memory card and press **W**. The following prompt appears:

```
Resume previous Wildcopy? (Y/N)Y
```

Press **Y** to resume copying or press **N** to discontinue the current Wildcopy operation.

If you want to temporarily abort the current Wildcopy operation, press **Esc**. In this case, you can restart the Wildcopy operation as long as the following message is still displayed on the message line:

```
Press [W] to resume Wildcopy...
```

To resume copying, press **W** then **Y**.

Tagging Files

The **Group** command is used to tag files into a group for copying or erasing. To use this command, first log onto the drive and directory which contains the files you want to copy or erase by tagging, then activate the **Group** command by pressing **G**. The following secondary commands will appear on the command line:

Copy copies the files you have tagged

Erase erases the files you have tagged

Tag/untag alternately tags or removes the tag from the file selected by the bar cursor

Wildtag tags files according to specified MS-DOS wild-card characters

Unwildtag removes tags from files according to the specified MS-DOS wild-card characters

Reverse removes tags from tagged files and places tags on untagged files

All tags all files

None removes all tags

Quit exits the **Group** command

To tag a file, move the cursor to it and press **T** to execute the **Tag/untag** command. An arrow marker appears beside the file name. If the file has already been tagged, the file is untagged and the arrow marker disappears.

*Note: The **Group** command tags files within a single directory at a time. You can only tag files, not directories.*

Exiting LapLink

There are two ways to exit LapLink.

You can use the **Dos** command to leave LapLink temporarily and return to MS-DOS. When you execute the **Dos** command, the following prompt appears:

```
Ok to exit to DOS? (Y/N)
```

Press **Y** to exit to MS-DOS, or any other key to remain in LapLink. Once in MS-DOS, you can run any MS-DOS command or run another program. When you are ready to resume the LapLink session, type EXIT and press **Enter** at the MS-DOS prompt. The LapLink screen will reappear.

*Caution: Be sure to return to LapLink every time you exit through the **Dos** command. If you do not to return to LapLink, a copy of the program will remain in RAM, occupying memory. The next time you start LapLink, another copy will be loaded into RAM, occupying even more space. To ensure that you have no extra copies resident in RAM, type EXIT and press Enter at the MS-DOS prompt. If the LapLink screen appears, use the **Quit** command to quit the program. Repeat this process until the LapLink screen no longer appears.*

Use the **Quit** command to quit LapLink and return to MS-DOS on your local computer. Whenever you execute the **Quit** command, the following prompt appears:

```
Ok to quit? (Y/N)N
```

Press **Y** to quit, or any other key to remain in LapLink. LapLink will return to the drive and directory used when the program was started.

LapLink Error Messages

Certain errors can make LapLink to pause and ask you to take some action. If you encounter one of these "critical errors", a message pops up in the middle of the screen, informing you of the problem and prompting for the next action to be taken with the following message:

```
Retry, Ignore?
```

Press **R** to retry the command or **I** to ignore the command and resume the program. (You may have to press **I** several times.)

The following are critical error messages and their possible causes:

```
Drive A: not ready
```

There is no IC memory card/diskette in the drive, the diskette is not formatted for that computer, or there is a bad sector on the diskette.

```
Drive A: write protected
```

You are trying to copy to a write-protected IC memory card/diskette.

```
General failure error
```

There are many possible reasons for this message, but the most common is a hardware failure, or a bad sector on the IC memory card, diskette or hard disk.

9

Chapter

The Address Book

Introduction

Using the built-in Address Book application you can store hundreds of names, phone numbers and addresses in an easily accessible form.

You can use as many address books as you like by storing each one in a separate address book file. (For example, one for personal and one for professional contacts). An address book consists of a number of entries or *cards*, sorted into alphabetical order. You can:

• Use any format you like for the cards e.g. include comments and alternate phone numbers.

• Include as many cards as you want per file, only subject to memory limits (typically up to about 3,000 entries).

• Insert, view, delete or edit cards at any time.

• Move quickly back and forth through the cards.

• Search for a card by typing any part of the information on the card, such as part of the contact name, number or address.

• Print address labels, phone lists, etc.

• Import text from other sources, such as the Editor or a database.

Note: Address Book is actually a simple database, so you could even use it to organize other types of information, such as details of your record collection.

Starting the Address Book

To use the Address Book:

• Select the `Address book` option from the Pop Up Menu.

• OR select an Address Book file from the File Manager and press **F7** (Load).

• OR type `ADDR` and press **Enter** at the DOS prompt, or `ADDR filename` to load that Address Book file. (You can also use the switch `/N` to prevent changes to the configuration.)

This will display the Address Book screen.

The Address Book Screen

The first time you use Address Book it will display a blank screen which looks like this:
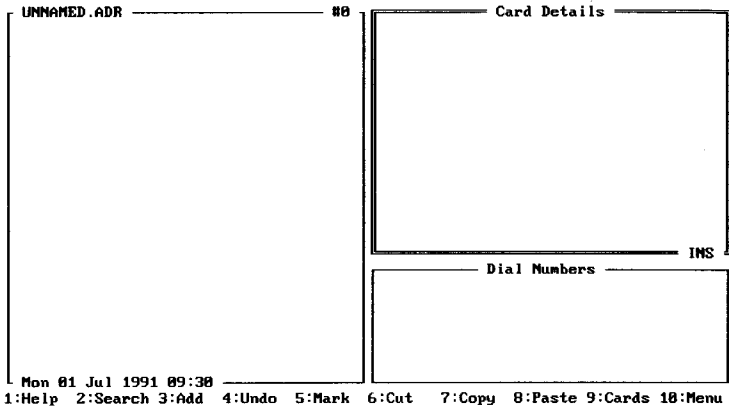
```
┌ UNNAMED.ADR ────────────── #0 ┐ ┌────── Card Details ═══════┐
│                                │ │                           │
│                                │ │                           │
│                                │ │                           │
│                                │ │                           │
│                                │ │                           │
│                                │ │                           │
│                                │ └──────────────────── INS ┘
│                                │ ┌────── Dial Numbers ──────┐
│                                │ │                           │
│                                │ │                           │
│                                │ │                           │
│ Mon 01 Jul 1991 09:30 ─────────┘ │                           │
└ 1:Help  2:Search 3:Add  4:Undo  5:Mark  6:Cut  7:Copy 8:Paste 9:Cards 10:Menu
```

Like the other built-in applications, the top line shows the name of the file you are editing (UNNAMED.ADR if none) and a change indicator (≈), while the bottom two lines show the date and time and function keys.

In addition, the top right corner of the lefthand window shows the number of cards in the file (#0 in the above, as there are no cards).

Each window gives a different view of the address book:

* The *line window* (on the left) lists the first line of each card in the file, in alphabetical order.

* The *card window* (top right) displays the name and address details from the current card.

* The *dial window* (bottom right) lists the phone numbers for the current card.

You use the line window to select cards and the card window to add, edit, or view cards.

To use the card window, select a card and press **Enter**. To return to the line window, press **Esc**. To move to the dial window, press **Ctrl-D**.

The Line Window

The line window displays the first line of each card (usually the contact name and phone number), in alphabetical order, like this:

As cards are sorted on their first
lines, this is usually used for the
contact name. If a line ends with →
like the entry for All American
Airlines, it extends beyond the
frame. Use **Right Arrow** to scroll it sideways.

```
┌ E:\ADDRESS\OFFICE1.ADR ━━━━━━ #32 ┐
│ ABC Furnishing (8999) 123 123 123       │
│ ABC Lets (8882) 456 456 456             │
│ All Amercian Airlines (415) 888 888 →  │
│ Betta Pizza (444) 123 123 345           │
│ Bright & Bright (Lighting)              │
│ Caterers (Pizza) (444) 123 123 345      │
```

The Card Window

The card window displays the
current card in its entirety, rather
than just its first line. To switch to
the card window from the line
window, just press **Enter**. To return
to the line window, press **Esc**.

```
┌━━━━━━━ Card Details ━━━━━━━┐
│ ABC Furnishing (8999) 123 123 123 │
│ 12 The Mall                        │
│ Dinsburgh                          │
│ Penn                               │
│                                    │
│ :Sale in January                  │
│ :Carpets rather poor               │
```

If there are more lines than shown,
an elevator will be displayed in the
right frame. If a line ends with → it

```
│                              INS ┘
```

extends beyond the frame: use **Right Arrow** to scroll it sideways.

The Dial Window

The dial window lists the phone
number(s) for the current card. To
move to the dial window, press
Ctrl-D.

```
┌━━━━━━━ Dial Numbers ━━━━━━━┐
│ (8999) 123 123 123 [sales]      │
│ 123 123 123 [sales]             │
│ (8999) 123 123 162 [accounts]   │
│ 123 123 162 [accounts]          │
```

If there are more than six phone
numbers, you can scroll the list e.g.
by using **Up** or **Down Arrow**. To return to the card window, press **Esc**.

To add, delete or change the numbers, edit the first line of the card, in the
card window.

Leaving the Address Book

To leave the Address Book, move to
the line window and press **Esc**. If
you have made any changes since
last saving the address book, you
will be asked whether to save it first:

```
┌ Save? ┐
│ Yes   │
│ No    │
```

Select Yes to save the changes (to the current filename), No to exit
without saving, or press **Esc** to continue using the Address Book.

To save the Address Book file and then exit, press **Alt-X**.

Adding Cards

To add a card (entry) to the address book:

- Press **F3** (Add). The cursor will move to the card window, which will be blank.

- On the top line, type the information to display in the line window (and use for sorting). Typically, this will be the contact name, but might for example be a description of the service a contact provides. Do not use numbers or # or *, as they will be taken as part of a phone number.

- If you want to display phone numbers in the dial window, type them on the same line, using the digits 0 to 9, spaces, # and *. If the contact has several phone numbers, type them separated by commas, all on the same line. See *Phone Number Format*, below, for full details.

- Press **Enter** to move to the next line and type any other information that you want to store on this card, such as an address or notes about previous conversations. Press **Enter** at the end of each line.

  You can type up to 250 characters per line and more than 30,000 characters per card, although you will usually use far fewer than this!

- When you have finished, press **F3** to add the card and start another, or **Esc** to add it and return to the line window.

Contact Details Format

While you can type contact details in virtually any format, you'll probably find it more useful if you keep to a similar format for all cards.

For example, if you want to print address labels from cards, make sure that you type the name and address first and type any other information on lines which are never used for addresses, so you can avoid printing this unwanted information on the address labels!

Similarly, if you want to be able to find, extract or list cards in groups, simply add the same identifying text to each card in the group. For example, to identify all members of your Bridge club, add `Bridge club` to each card. To identify members of your golf club, add `Golf club`, and so on. (See *Selecting Cards* for details of using groups.)

Finally, note that any line which starts with a semicolon (;) is a comment and will not be printed.

Phone Number Format

To make the best use of the dial window, follow these simple rules when typing phone numbers.

To separate different phone numbers, use commas.

To break a number into stages, use periods (.) minuses (-) or spaces.

Put area dialing codes in parentheses so the dial window will list the number both with and without the area code. For example, if you type a number as (415) 230 1212, it will be displayed as both (415) 230 1212 and 230 1212.

Type comments in square brackets. If you want the comment displayed in the dial window, put it after the phone number. If you do not want it displayed, put it before the number. For example, to display Neil's home and office numbers, with comments to explain the difference, you might type: Neil (415) 856 5555 [Work], (415) 558 2888 [Home]

To enter a sequence of similar numbers with different endings, use the / character. This can save space and typing errors! For example, to enter the numbers 222239, 222240 and 222241, you could type 222239/40/41.

Moving Around the Address Book

In the line window, you can use the following to select a card:

• To move a card at a time, use **Up** or **Down Arrow**.

• To move by about two thirds of a screenful at a time, use **PgUp** or **PgDn**.

• To move to the next card starting with a certain letter, type that letter.

• To move to the start of the file (first card), press **Ctrl-PgUp** or **Ctrl-A**.

• To move to the end of the file (last card), press **Ctrl-PgDn** or **Ctrl-Z**.

In the card window, you can use the following keys:

• To scroll the card up or down, press **Up** or **Down Arrow**.

• To move to the next card, press **PgDn**.

• To move to the previous card, press **PgUp**.

• To move to the start of the file (first card), press **Ctrl-PgUp** or **Ctrl-A**.

• To move to the end of the file (last card), press **Ctrl-PgDn** or **Ctrl-Z**.

Editing Cards

To edit a card, display it in the card window and edit the details by
using the normal line editing keys, including:

- **Left, Right, Up** or **Down Arrow**, to move the cursor a character or line
  at a time.

- **Backspace** to delete the character to the left of the cursor. (If the cursor
  is at the left margin and the previous line is blank, this will delete the
  previous line.)

- **Del** to delete the character at the cursor. (If the line is blank, this will
  delete the line.)

- **Ctrl-Backspace** or **Ctrl-Q** to delete to the previous word.

- **Ctrl-W** to delete to the next word.

- **Ctrl-B** or **Ctrl-Home** to delete to the beginning of the line.

- **Ctrl-E** or **Ctrl-End** to delete to the end of the line.

- **Ctrl-L** to delete the line.

- **Ins** to toggle between Insert and Overtype modes.

> *Note: Each line is stored separately, so you cannot join a line to the next by
> deleting the* **Enter** *character at the end of the line. Delete the line (e.g. using*
> **Ctrl-L***) and then insert it on the next line, by using the Undo key,* **F4***.*

To simplify adding similar cards, you can copy them using the Clipboard
facilities and then edit the copies using the editing facilities. For details of
using the Clipboard, see *Using the Clipboard* in Chapter 5.

Deleting Cards

To delete a card you can select it from the line window and press **Del**. If
you delete the wrong card, press **F4** (Undo) to undelete it.

You can also delete a card by deleting all its details from the card
window.

Filing

The main filing commands are all accessed via the Files menu:

- Press **F10** to display the main menu and select the `Files` option:

```
┌────── Files ──────┐
│ New               │
│ Retrieve...       │
│ Save as...        │
│ Merge...          │
│ Load backup       │
│ Write selected... │
└───────────────────┘
```

- To start a new address book, select the `New` option.
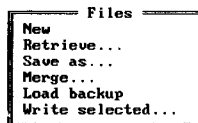
- To work with a different address book, select the `Retrieve` option.

- To save the file, select the `Save as` option.

- To use the backup version of the current file, select the `Load backup` option.

- To cancel all changes made since you last saved the file, load it again.

There are also two shortcuts, which you can use at any time:

- To save the file with its current name and carry on, press **Alt-S**.

- To save the file and exit, you can press **Alt-X**.

These standard filing commands are described in detail in Chapter 5 (see *Using Files*).

To add cards from another address book:

- Select `Merge` from the Files menu.

```
┌─────── Merge ───────┐
│ File:               │
└─────────────────────┘
```

- Type or select the file to merge.
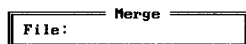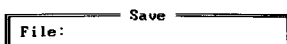
> *Note: If there are any cards in the merged file with the same names as the current file, they will simply be added to the current file. They will not replace the current cards.*

To add just a few cards from another address book, use the Clipboard as described in Chapter 5.

To save part of the address book:

- Select the `Cards select` option from the main menu, or press **F9**. (See *Selecting Cards* for details.)

- Type a search string to select the cards. For example, to select all cards for Maine, type `Maine` and press **Enter**.

- Display the Files menu (e.g. press **F10** and then **F**) and select the `Write selected` option.

```
┌─────────── Save ───────────┐
│ File:                      │
└────────────────────────────┘
```
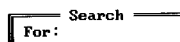
- Edit the name to specify the name for the new address book. (Choose a different name from the current file, or you will overwrite it.)

Searching

Use the Search command to find a card by typing any part of the information on it, such as part of the name, phone number, or address. Note that searching is from the current card, so you may need to jump to the start of the list first.

To search for a card:

- Press **F10** to display the main menu and select the `Search` option, or press **F2** (Search):

```
┌────────── Search ──────────┐
│ For:                       │
└────────────────────────────┘
```

- Type the text to search for. This can be any part of any information on the card (name, address, notes, phone numbers), but the longer the search string the better. Note that case is ignored.

  For example, if Scotty MacBain lives in Seattle, you could type `Scotty`, `SCOT`, `Seattle` or any other part of his name or address.

- To search in the same direction as last time, press **Enter.**
  To search forwards, press **Down Arrow.**
  To search backwards, press **Up Arrow.**

- The address book immediately jumps to the first card which contains this text, or displays `Text not found` if there is no such card.

To repeat the last search, press **Ctrl-S.**

To search for a different string, select the Search command again and type the new string.

Selecting Cards

To select a group of cards:

- Select the `Cards select` option from the main menu or press **F9** (Cards):

  ```
  ┌──── Select ────┐
  │ All:           │
  └────────────────┘
  ```
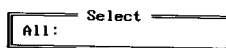
- Type a search string to select all cards which contain text that matches this string exactly, ignoring its case. For example, to select all cards for Maine, type `Maine` and press **Enter**.

- The line window will list just the selected cards and the card count will change to indicate how many are selected, for example: #12 of 25.

To store the selected cards in a separate address book, use the `Write selected` option in the Files menu.

To print the selected cards, print the address book in the usual way.

To return to using all the cards, simply press **Esc**.

Printing

To print part of the address book, select the cards first (see *Selecting Cards*) then proceed as for printing the whole address book.

To print the whole address book:

- Press **F10** to display the main menu and select `Print`:

  ```
  ┌────── Print ──────┐
  │ Advanced features...│
  │ Copies            1 │
  │ Line spacing  Single│
  │ Margins...         │
  │ Headers...       On │
  │ Footers...       On │
  │ Use printer... Default│
  │ Settings...        │
  │ Go?                │
  └───────────────────┘
  ```
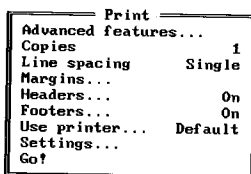
- Select `Advanced features` from the Print menu:

  ```
  ┌── Advanced Features ──┐
  │ Lines per card (0=all) 0│
  │ Gap between cards     1 │
  │ Strip dial numbers?  No │
  └───────────────────────┘
  ```
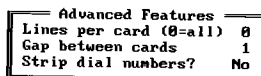
- Set the options as follows:

  `Lines per card`: 0 means print the whole card, 1-9 mean print this number of lines. (If a card has fewer lines, the missing lines will be printed as blanks.)

  `Gap between cards`: how many blank lines to leave between cards.

`Strip dial numbers?: Yes` means remove the phone number (and any subsequent text) from the first line of the card.

(See *Example Print Layouts,* below.)

- Press **Esc** to return to the Print menu and check the number of copies, margins, etc, and change them if necessary. (For full details of these other printer menu options, see *Using Printing* in Chapter 5.

- Make sure the printer is connected and ready, then select `Go!` to start printing and you should see the message `Printing....` (If you see any other messages, refer to Appendix E.)

You will not be able to use the computer for anything else while printing. To cancel printing, press **Esc**.

Note: Any line in the details that starts with a semicolon (;) is a comment and will not be printed.

Example Print Layouts

To print a simple phone list like this:

```
ABC Furnishing (0999) 123 123 123
ABC Lets (0002) 456 456 456
All Amercian Airlines (415) 000 000 1
. . .
```

Set `Lines per card` to 1, `Gap between cards` to 0 and `Strip dial numbers?` to No.

To print address labels which are 6 lines deep with a single space between, like this:

```
ABC Furnishing
12 The Mall
Dinsburgh
Penn
```

```
ABC Lets
Floor 12
Kingsbury Building
2240 West Central
Lower Malborough
Penn
```

Set `Lines per card` to 6, `Gap between cards` to 2 and `Strip dial numbers?` to Yes.

Address Book Options

To change the Address Book options:

- Press **F10** or display the main menu
  and Select Options:

```
╔══════ Options ══════╗
║ Extension      ADR  ║
║ Backup file    Off  ║
║ Autoload        On  ║
║ File lists...       ║
╚═════════════════════╝
```

To change the default filename extension, select Extension from the Options menu, type an extension (up to 3 characters), then press **Enter**.

The Address Book will use this extension whenever you type a filename, without an extension and the File Manager will also use the Address Book to load any file which you select that has this extension. Be consistent to avoid confusion in the future, and don't use extensions that have special meanings, such as TXT, COM, EXE, WKS, DRY, etc.

To control backups, select Backup file to toggle it between On and Off. If you set Backup file to On, the Address Book will rename the current version of the file to create a backup when you save a new version. The backup has the same name except the first character of the extension is set to $. (To use a backup, either rename it, or select Load backup from the Files menu.)

Backups provide a quick and easy protection against mistakes, but use additional disk space. If disk space is limited, turn backups off or use them just for important files.

To control autoloading, select Autoload to toggle it between On and Off. With Autoload on, the Address book will automatically load the same file the next time you use it, if the file is still available.

To change the order in which files are listed, select File lists. For details, see *The File Lists Option* in Chapter 5.

Recommendations: Leave Extension set to ADR unless this creates a problem with some other application that you are using. Leave Backup file set to On unless you are short of disk space. Leave Autoload set to On unless you use several different address books. Leave the file list options set to Name and Ascend to simplify finding names.

Summary

Keys

Function keys:

F1	Help
F2	Search
F3	Add card
F4	Undo
F5	Mark
F6	Cut to clipboard
Shift-F6	Cut and append to clipboard
F7	Copy to clipboard
Shift-F7	Copy and append to clipboard
F8	Paste from clipboard
F9	Select cards
F10	Main menu

Control keys:

Ctrl-A	Move to start of file (first card)
Ctrl-B	Delete to beginning of line (card window)
Ctrl-D	Move to dial window
Ctrl-E	Delete to end of line (card window)
Ctrl-L	Delete line (card window)
Ctrl-Q	Delete to previous word (card window)
Ctrl-S	Repeat search
Ctrl-U	Move to previous position
Ctrl-W	Delete to next word (card window)
Ctrl-Z	Move to end of file (last card)

Movement keys:

Left,Right	Move a character at a time (card window)
	Scroll sideways (line window)
Up,Down	Move a line at a time
Ctrl-Left	Move to previous word (card window)
Ctrl-Right	Move to next word (card window)
Home	Move to start of line (card window)
End	Move to end of line (card window)
Ctrl-Home	Delete to beginning of line (card window)
Ctrl-End	Delete to end of line (card window)
PgUp, PgDn	Move up/down two thirds of a screenful (line window)
	Move to previous/next card (card window)
Ctrl-PgUp	Move to start of file (first card)
Ctrl-PgDn	Move to end of file (last card)

Delete keys:
Backspace   Delete character to left of cursor (card window)
Ctrl-Backspace Delete to previous word (card window)
Del   Delete character at cursor (card window)
                 Delete card (line window)

Other keys:
Ins   Toggle insert/overtype
Enter   Go to card window/end line or menu selection
Esc   Go to previous window/exit

Menus

The Main menu:

```
╔═══ Address  Book ═══╗
║ Files...            ║
║ Search              ║
║ Cards select        ║
║ Print...            ║
║ Options...          ║
╚═════════════════════╝
```
Files menu
Search for card
Select cards for printing etc
Printing
Address book options

The Files menu:

```
╔══════ Files ══════╗
║ New               ║
║ Retrieve...       ║
║ Save as...        ║
║ Merge...          ║
║ Load backup       ║
║ Write selected... ║
╚═══════════════════╝
```
Start new address book
Load address book
Save address book
Insert another address book
Use previously saved version
Save selected cards

The Print menu:

```
╔════════ Print ════════════╗
║ Advanced features...      ║
║ Copies              1     ║
║ Line spacing    Single    ║
║ Margins...                ║
║ Headers...          On    ║
║ Footers...          On    ║
║ Use printer...  Default   ║
║ Settings...               ║
║ Go!                       ║
╚═══════════════════════════╝
```
Advanced features menu
Select copies to print
Set Line spacing
Set page margins
Define page header
Define page footer
Select printer setup
Change printer setup
Start printing

The Advanced features menu:

```
╔════ Advanced Features ════╗
║ Lines per card (0=all)  0 ║   Select lines to print
║ Gap between cards       1 ║   Set spacing between cards
║ Strip dial numbers?    No ║   Toggle print phone numbers
╚═══════════════════════════╝
```

The Options menu:

```
╔══════ Options ══════╗
║ Extension       ADR ║   Default extension
║ Backup file     Off ║   Toggle backups
║ Autoload         On ║   Toggle autoload
║ File lists...       ║   Control listing of filenames
╚═════════════════════╝
```

The File lists menu:

```
╔══════ File Lists ══════╗
║ Sort order...     Name ║   Aspect to sort on
║ Direction       Ascend ║   Sorting order
║ Include date/time  Off ║   Toggle file date and time
╚════════════════════════╝
```

Technical Notes

Limits:

- Cards per file: Limited only by memory. With typical memory allocation and address details, you can create an address book of over 3,000 cards!

- Characters per card: 32767.

- Characters per line: 250.

- Phone numbers per card: No limit.

Recognizing phone numbers: Any character in the first line of a card which would be valid in a phone number definition (see *Phone Number Format* in *Adding Cards*) is taken as the start of a phone number. The phone number is then considered to end when the first non-valid character is found.

File format: ASCII. Each line of the card ends with CR-LF, with blank lines stored as SPACE-CR-LF. Each card ends with a line consisting of just CR-LF.

10
Chapter

The Scheduler

Introduction

The Scheduler provides two related functions:

- **A Calendar**, which displays several months at a time, that you can also use to select pages from your diary. Unlike a conventional calendar, you can display information for any year from 1924 to 2051.

- **A Diary**, which you can use to enter and edit notes and appointments. Unlike a conventional diary, you can easily repeat appointments at regular intervals, and set alarms to remind you of important appointments (by sounding a buzzer).

Starting the Scheduler

To use the Scheduler:

- Select `Scheduler` from the Pop Up Menu.

- OR select a Scheduler file from the File Manager and press **F7** (Load).

- OR type `DIARY` and press **Enter** at the DOS prompt or `DIARY filename` to load a different file. (You can also use the switch `/N` to prevent changes to the configuration.)

This will display the Scheduler screen.

The Scheduler Screen

The Scheduler screen looks like this:

```
 D:\SYSTEM\DIARY.DRY ══════════════════════════════════════ 20
   Mon Tue Wed Thu Fri Sat Sun    Wk   ┌─────── Monday  1 July 1991 12:11p
   ─────── June 1991 ───────            │ ▶  6:00a
                        1    2   22     │    7:00a
     3    4    5    6    7    8    9   23     │    8:00a
    10   11   12   13   14   15   16   24     │    9:00a
    17   18   19   20   21   22   23   25     │   10:00a
    24   25   26   27   28   29   30   26     │   11:00a
   ─────── July 1991 ───────            │   12:00p
     1    2    3    4    5    6    7   27     │    1:00p
     8    9   10   11   12   13   14   28     │    2:00p
    15   16   17   18   19   20   21   29     │    3:00p
    22   23   24   25   26   27   28   30     │    4:00p
    29   30   31                        │    5:00p
                                        │    6:00p
   ─────── August 1991 ───────          │    7:00p
                    1    2    3    4   31     │    8:00p
     5    6    7    8    9   10   11   32     │
    12   13   14   15   16   17   18   33     │
    19   20   21   22   23   24   25   34     │
    26   27   28   29   30   31               │
 Mon 01 Jul 1991 12:11 ══════════════════════════════════  INS
 1:Help  2:Search 3:Zoom 4:Undo  5:Mark  6:Cut   7:Copy  8:Paste 9:Alarm 10:Menu
```

Like the other built-in applications, the top line shows the name of the file you are editing and a change indicator (≈), while the bottom two lines show the date, time, and function keys. In addition, the top right corner of the window you are using shows the number of appointments.

The rest of the screen displays the calendar and the diary:

- The lefthand window is the *Calendar window*, with today's date flashing, and week numbers at the end of each line. You use this to check dates and select a page from your diary.

- The righthand window is the *Diary window*, which lists the appointments, notes, and alarms that you have entered. You use this to view, insert and edit appointments, notes and alarms. The diary window operates in two modes: *summary mode* which lists just the appointments from the selected day onwards, and *day mode* which lists the appointments and time slots for just the selected day.

To use the Diary window, select a day in the calendar and press **Enter**. To return to the Calendar window, press **Esc**.

The Calendar Window

The Calendar window displays a calendar for a 3 month period, with today's date flashing, and the week number at the end of each line. If a date is highlighted, there is an appointment on it. (This will only show one-off appointments, not repeats: you have to consult the diary for those.)

```
┌─ D:\SYSTEM\DIARY.DRY ═══════════════════╗
║  Mon Tue Wed Thu Fri Sat Sun       Wk   ║
║ ──────────── June 1991 ────────         ║
║                        1   2       22   ║
║    3   4   5   6   7   8   9       23   ║
║   10  11  12  13  14  15  16       24   ║
║   17  18  19  20  21  22  23       25   ║
║   24  25  26  27  28  29  30       26   ║
║                                         ║
║ ──────────── July 1991 ────────         ║
║    1   2   3   4   5   6   7       27   ║
║    8   9  10  11  12  13  14       28   ║
║   15  16  17  18  19  20  21       29   ║
║   22  23  24  25  26  27  28       30   ║
║   29  30  31                            ║
║                                         ║
║ ──────────── August 1991 ───────        ║
║                1   2   3   4       31   ║
║    5   6   7   8   9  10  11       32   ║
║   12  13  14  15  16  17  18       33   ║
║   19  20  21  22  23  24  25       34   ║
║   26  27  28  29  30  31                ║
║ Mon 01 Jul 1991 12:11 ═══════════════   ║
└─────────────────────────────────────────┘
```

You can move around the calendar to select a day for the diary, or to check dates, using the following keys.

To move:

- A day at a time, use **Left** or **Right Arrow**

- A week at a time, use **Up** or **Down Arrow**

- A month at a time, use **PgDn** or **PgUp**

- A year at a time, use **Ctrl-PgUp** or **Ctrl-PgDn**

- To today's date, use **Home**

The calendar covers any period from 1924 to 2051.

To switch to the Diary window, select a day and press **Enter**.

The Diary Window

You use the Diary window to view, insert, delete and edit appointments and alarms. The top line is used to enter and edit entries. The next line, the *date bar*, displays the date and time of the currently selected entry (indicated by a triangle), while the remaining lines list your appointments.

This list takes two forms, depending on the diary mode: *day mode* or *summary mode*. When you select the Scheduler it starts in day mode; to switch between modes press **F3** (Zoom).

To return to the Calendar window, press **Esc**.

Day Mode

In day mode, the Diary window looks like this:

It shows details for a single day at a time (initially, the one you selected from the Calendar). It always lists each hour from 6am to 8pm, plus any *date headers* (notes) or *appointments*.

A date header will be listed before the times and will typically be used for notes which apply to the whole day rather than a particular time.

An appointment consists of the appointment time and optionally a finish time (to *book* that time), and a short note. The following symbols may also be displayed before the time:

```
                                    201 =

                  Tuesday  2 July 1991 10:30a
          Performance review
             6:00a
             7:00a
             8:00a
   ►         9:00a
            10:00a
   ♫       10:30a Meeting with AH and JS
            11:00a
           12:00p- 1:15p Progress review
            1:00p- 2:00p Lunch with Jane
            1:15p
            2:00p
            3:00p
   w        4:00p Give timesheets to DJ
            5:00p
            6:00p
            7:00p
            8:00p

                                    INS
```
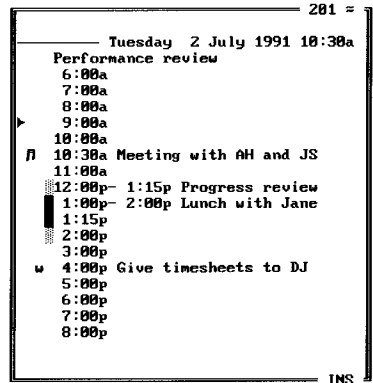
- A triangle symbol, which indicates the currently selected appointment.

- A note symbol, which indicates an alarm is set for this appointment.

- A light gray rectangle, to indicate booked time.

- A dark gray rectangle, to indicate double-booked time.

- One of the following letters, which indicate that the appointment is set to repeat at regular intervals:

y   Repeated yearly
m   Repeated monthly
w   Repeated weekly
n   Repeated on weekdays (Monday to Friday)
d   Repeated daily

Note: You do not have to use the hourly timeslots: you can make appointments for any time or period (e.g. 12:01-12:14) or even make them for the same time.

In day mode, a repeated appointment will be shown for each day on which the repeat falls, unlike in summary mode.

To move through the diary entries, use the following keys:

Left or **Right Arrow**   Scroll left/right to view long entries

Up or **Down Arrow**   Move a line at a time

PgUp or **PgDn**   Move to previous/next day

Ctrl-PgUp or **Ctrl-PgDn**   Move to first/last appointment

Summary Mode

In summary mode, the Diary window looks like this:

The first two lines are just like in day mode. The remaining lines list your appointments, in chronological (date and time) order starting from the selected day. Each line is either a *date header* or an *appointment*:

A date header consists of a date, indicating what date the following appointments are for, and may also include a note.

```
━━━━━━━━━━━━━━━━ 201 ≈ ▮
┌───── Tuesday 27 August 1991 12:00p
│ Tue 27 Aug
▶  12:00p- 1:30p Lunch with Anne
    2:30p New product launch
    5:50p Launch party
  Fri 30 Aug
    9:30a Order flowers
y Sun 01 Sep Anne's birthday
```
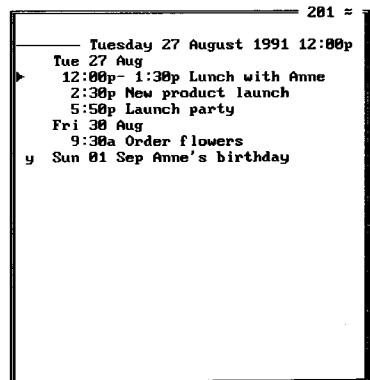
For example:

```
Tue 12 Feb Performance review
```

An appointment consists of the appointment time and a short note, and looks like this:

```
10:30a Meeting with accountant
```

Symbols may also be displayed before the time to indicate repeats and alarms, as described for the day mode window.

You can scroll the diary entries by using the following keys:

Left or **Right Arrow**   Scroll left/right to view long entries

Up or **Down Arrow**   Move a line at a time

PgUp or **PgDn**   Move up or down about two thirds of a
                                        screenful

Ctrl-PgUp or **Ctrl-PgDn**   Move to first/last appointment

*Note: In summary mode, the Diary does not contain a 'page' for each date,
only for dates where you have entered notes or appointments. If an
appointment repeats, you will only see the **next** repeat. Indicators are not
shown for booked time and double-booked time.*

Leaving the Scheduler

To leave the Scheduler and move to the
Calendar window, press **Esc**. If you have
made any changes since last saving the diary,
you will be asked whether to save it first:
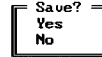
```
┌─ Save? ─┐
│  Yes    │
│  No     │
└─────────┘
```

Select Yes to save the changes (to the current filename),
No to exit without saving,
or press **Esc** to continue using the Scheduler.

To save the diary file and then exit, press **Alt-X**.

Adding Entries

If you want to add entries for a number of different days, you'll probably find summary mode easier. If you want to add a number of entries to the same day, you'll probably find day mode easier. To change modes, press F3 (Zoom).

Adding entries in summary mode:

• Optionally, select the date from the Calendar and press **Enter**.

• If you have not selected the correct date (check the date bar), select it now:

EITHER type the date and press **Enter**. For example, if you are using American format dates, you could type September 1st 1991 as 9/1/91 or 9-1-91. (You can also use shorthand - see *Date formats*.)

```
                                                        201 =
          ─── Tuesday 27 August 1991 12:00p
       Tue 27 Aug
  ▶     12:00p- 1:30p Lunch with Anne
        2:30p New product launch
        5:50p Launch party
       Fri 30 Aug
        9:30a Order flowers
  y    Sun 01 Sep Anne's birthday
```
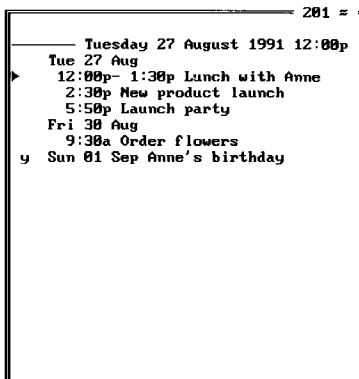
OR, if there is a date header for this date, you can select it by moving to it using **Up** or **Down Arrow**, **PgUp** or **PgDn**. Do not press **Enter**.

• To add a note to this date, simply type the note text and press **Enter**. This will be displayed against a date header.

• To add an appointment to this date, type the appointment time, a space, and the appointment details. Use . or : as separators in the time. For example, type 10 o'clock as 10:00. To book a period, type start and end times separated by a hyphen. (See *Time formats*, below.)

To add more notes or appointments to this date, simply type the text. Remember to type the time at the start of each appointment.

To add notes or appointments to another date, select it first as described above.

To repeat an appointment, see *Repeats*.

To set an Alarm, see *Alarms*.

Adding entries in day mode:

- Select the day from the Calendar and press **Enter**.

- If you have selected the wrong date (check the date bar), either press **Esc** to return to the Calendar and try again, or use **PgUp** or **PgDn** to move one day at a time through the diary.

- To add a note to the selected page, simply type the text and press **Enter**. This will be displayed as a date header.

- To add an appointment to this date:

```
──────────────────────── 201 ≈ ┐
──── Tuesday  2 July 1991 10:30a
 Performance review
  6:00a
  7:00a
  8:00a
▶ 9:00a
 10:00a
 10:30a  Meeting with AH and JS
 11:00a
 12:00p
  1:00p- 2:00p Lunch with Jane
  2:00p
  3:00p
w 4:00p  Give timesheets to DJ
  5:00p
  6:00p
  7:00p
  8:00p

──────────────────────────── INS
```
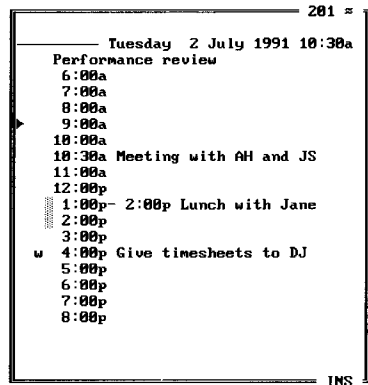
  - Use **Up** or **Down Arrow** to move to the start time and press **Enter**, then type the appointment text. To book a period, start by typing a hyphen and the end time.

    OR Type the appointment time, a space, and then the appointment text. Use . or : as separators in the time. For example, you could type 10 o'clock as 10:00. (See *Time Formats*, below.) To book a period, type a hyphen and the end time after the start time. For example, 13:00-14:00 Lunch.

To add notes or appointments to another date, select it first as described above.

To repeat an appointment, see *Repeats*.

To set an Alarm, see *Alarms*.

Date Formats

The Scheduler expects dates in the usual format for the country you selected during the installation process. For example, if you selected USA, type dates in month-day-year format. (We shall assume this format in this description.) You can use / or - as separators, so you could type Christmas day 1991 as 12/25/91 or 12-25-91.

If you type part of a date, the Scheduler will take the unspecified parts from the currently selected date, providing you include at least one separator. For example, if the current date were December 10th 1991 (12/10/91):

11/	means 11/10/91 (November 10th 1991)
/11	means 12/11/91 (December 11th 1991)
//92	means 12/10/92 (December 10th 1992)
5/1	means 5/1/91 (May 1st 1991)

Time Formats

The Scheduler expects times in the usual format (am/pm or 24-hour) for the country you selected during the installation process. You can use . or : as separators, but times are always displayed using colons as separators.

In 24-hour format, times range from 0:00 (midnight) to 23:59 (one minute before midnight). For example: 13:00 means one o'clock in the afternoon and 9:25 means 25 minutes past nine in the morning.

In am/pm format, times range from 0:00a (midnight) to 11:59p (one minute before midnight). For example: 1:00p means one o'clock in the afternoon and 9:25a means 25 minutes past nine in the morning.

Note: If you are using am/pm format, you must type the a or p indicator immediately after the time, with no spaces.

If you type part of a time, the Scheduler will take the unspecified parts from the currently selected time. For example, if the current time were 3:32pm, 11: means 11:32pm and :40 means 3:40pm.

Editing Entries

You'll probably find editing easier in summary mode.

To change the text of a header or appointment:

• Move to it and press **Enter**. The text will be displayed on the top line.

• Use the normal text editing keys to edit the text.

• When you have finished, press **Enter**, or **Esc** to cancel the changes.

To change the date or time use the Move option, explained below.

Deleting Entries

To delete an appointment, move to it and press **Del**. (You'll probably find deleting entries easier in summary mode.)

Repeating Entries

You can repeat any appointment or date header at regular intervals by pressing just a few keys, which can save a lot of typing! If you repeat an appointment with an alarm, the alarm will repeat too.

In day mode, a repeated entry will appear for each day on which it repeats. In summary mode, a repeated entry only appears once in the diary, at the next time it occurs. For example, if you add a daily repeating entry on the 1st, when you examine the diary on the 2nd, the entry will have moved from the 1st to the 2nd.

To repeat an entry:

• Move to the entry, press **F10** to display the main menu and select the `Repeat` option:

```
┌── Repeat ──┐
│ Daily      │
│ Weekly     │
│ Non-weekend│
│ Monthly    │
│ Yearly     │
│ Clear      │
└────────────┘
```

• Select the repeat option you require:
   `Daily` - every day
   `Weekly` - the same day of every week
   `Non-weekend` - every weekday (Monday to Friday)
   `Monthly` - the same date every month
   `Yearly` - the same date every year
   `Clear` - to cancel any repeat for the entry

The first letter of the selected repeat option is displayed next to the diary entry, as an indicator. You can only define a single repeat for each entry.

To cancel a repeating entry: move to it, press **F10** and then **R** to display the Repeats menu and select `Clear`.

☑ *Note: If you set a monthly repeat for 31st January, when you load the Scheduler after January 31st, it will attempt to move the entry to February 31st which doesn't exist, so it will move it to the nearest date, February 28th (or 29th), and display a warning. Note that the entry will repeat from this new date (e.g. the 28th or 29th).*

Alarms

You can set an alarm for any appointment in your diary, even repeating entries, but only alarms in your main diary, D:\SYSTEM\DIARY.DRY, will sound the buzzer. If you set alarms in any other diary, you will see the warning `Alarms can only be set in D:\SYSTEM\DIARY.DRY` when you exit or save the file. You cannot set an alarm for a date header, as these don't specify a time.

To set an alarm:

- Make sure the main diary file (D:\SYSTEM\DIARY.DRY) is loaded.

- Move to the appointment and press **F9** (Alarm), or press **F10** and select `Alarm`. This sets the alarm and displays a music symbol against the entry.

- To set the alarms, save the diary.

When an alarm goes off: the computer will turn on (if currently off), sound the buzzer, and display the alarm message like this:
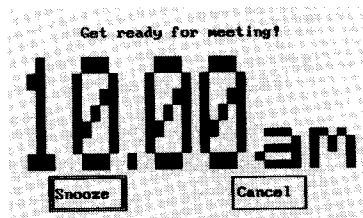
- To stop the alarm sounding, press **C** or **Esc**. To return to what you were doing, press **Esc** again.

- OR, to suspend the alarm for 5 minutes, press **S** (snooze).

For more details, see the description of the Desk Clock in Chapter 6.

To clear (reset) an alarm: move to the appointment and press **F9** (Alarm) or press **F10** to display the main menu and select `Alarm`. This will remove the music symbol from the entry. Save the diary to use the changed alarms.

Filing

The filing commands are all accessed via the Files menu. Press **F10** to display the main menu and select `Files`:

```
┌──── Files ────┐
│ New           │
│ Retrieve...   │
│ Save as...    │
│ Merge...      │
│ Load backup   │
└───────────────┘
```
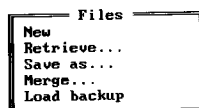
- To start a new diary, select the `New` option.

- To work with a different diary, select the `Retrieve` option.

- To save the diary, select the `Save as` option.

- To use the backup version of the diary, select the `Load backup` option.

There are also two shortcuts, which you can use at any time:

- To save the diary and exit, press **Alt-X**.

- To save the diary with its current name and carry on, press **Alt-S**.
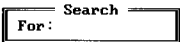
These standard filing commands are described in Chapter 5 (see *Using Files*).

To add all the entries from another diary: select Merge from the Files menu and select the file to merge from. If there are any appointments in the merged file with the same dates and times, they will be added to the current diary, they will not replace the current entries. To add just a few entries from another diary, use the Clipboard (see Chapter 5).

To cancel all changes made since you last saved the file: load it again.

Searching

To search for an entry:
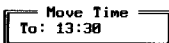
- Press **F10** to display the main menu and select Search or press **F2** (Search).

```
 ─── Search ───
| For:          |
```

- Type the text to search for, e.g. Pamela or birthday. The text must match exactly, although case is ignored.

- To search in the same direction as the last search, press **Enter**. To search backwards press **Up Arrow**. To search forwards press **Down Arrow**.

- If there is a matching entry, the cursor will move to it. If there isn't, Text not found will be displayed. Press any key to continue.
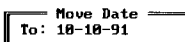
To repeat a previous search, press **Ctrl-S**.

To return to the previous position in the diary, press **Ctrl-U**.

Moving Entries

To move an appointment (or booked time) to a different time or date:

- Move to the appointment, press **F10** and select Move. This will display the appointment time:

```
 ─── Move Time ───
| To: 13:30       |
```

- Either press **Enter** to keep the same time, or edit it and press **Enter**. This will display the appointment date:

```
 ─── Move Date ───
| To: 10-10-91     |
```

- Press **Enter** to keep the same date, or edit it and press **Enter**.

To move an appointment to the same time on another day, you can also:

- Move to the appointment and press **Del** to delete it.

- Move to beneath the new day's date header and press **F4** (Undo).

To move a date header: move to it, press **F10** and select Move from the menu. Edit the displayed date and press **Enter**.

Printing

To print entries from your diary, first decide what you want to print. To print a summary of your appointments, select summary mode. To print a full list of timeslots for each day, including all repeats, select day mode.

- Press **F10** to display the main menu and select Print:

```
========= Print =========
Advanced features...
Copies                      1
Line spacing        Single
Margins...
Headers...              On
Footers...              On
Use printer...     Default
Settings...
Go!
```

- Select Advanced features to select the pages to print and the layout to use:

```
==== Advanced Features ====
Date range...           All
New page each day        No
Line between days        No
Include free days        No
```

- To change the dates, select Date range:

```
===== Date Range =====
From date         Start
To date             End
```

- The Scheduler will print all entries which are on or between these two dates. Select From date or To date and edit the displayed date; to insert today's date, press **Home**. To reset the range to all, select From date and press **Del**, then select To date and press **Del**.

- To start each day on a new page, set New page each day to Yes.

- To print hyphens after each day, set Line between days to Yes.

- If you are printing in day mode, to print pages even if they have no appointments, set Include free days to Yes.

If your selections will print more than 15 pages, you'll see the warning: xxx days will be printed. Press **Enter** to continue or **Esc** to cancel printing.

- Press **Esc** to return to the Print menu and check the number of copies, margins, etc. and change them if necessary. (For full details of these other printer menu options, see *Using Printing* in Chapter 5.)

- Make sure the printer is connected and ready, then select Go! to start printing and you should see the message Printing... (if you see any other messages, refer to Appendix E).

In the printout, repeats are indicated by the usual symbols. Alarms are shown by @. Booked time is shown by > symbols. Double-booked time is shown by * symbols.

⚠ *Caution: It is quite easy to print a lot of pages by mistake! To save wasting paper, set the date range carefully and set* Include free days *to* No.

To interrupt printing, press **Esc**.

You will not be able to use the computer for anything else while printing.

Scheduler Options

To change the Scheduler options, press **F10** to display the main menu and Select Options:

Options	
Extension	DRY
Backup file	Off
Autoload	On
File lists...	
Week start	Mon

To change the filename extension: select Extension from the Options menu, type the extension (up to 3 characters) and press **Enter**. Be consistent to avoid confusion and don't use extensions that have special meanings, such as TXT, COM, EXE, WKS, ADR, etc. File Manager will use the Scheduler to load any file which you select that has this extension.

To control backups select Backup file to toggle between On and Off. If you set this to On, the Scheduler will create a backup when you save a new version of a file, by changing the first character of its extension to $. (To use a backup, select Load backup from the Files menu.) If disk space is limited, turn backups off or use them just for your main diary.

To load the same file next time (if it is still available), set Autoload to On. This is very convenient if you usually use the same diary.

To change the order in which files are listed, select File lists. (For details, see Chapter 5.)

To change the week start in the Calendar, select Week Start to toggle between Monday and Sunday.

Summary

Keys

Function keys:

F1	Help
F2	Search
F3	Zoom (toggle between summary and day mode)
F4	Undo
F5	Mark
F6	Cut to clipboard
Shift-F6	Cut and append to clipboard
F7	Copy
Shift-F7	Copy and append to clipboard
F8	Paste
F9	Alarm
F10	Main menu

Control keys:

Ctrl-A	Move to start of file (first appointment)
Ctrl-B	Delete to beginning of line
Ctrl-E	Delete to end of line
Ctrl-L	Delete line
Ctrl-Q	Delete to previous word
Ctrl-S	Repeat search
Ctrl-U	Move to previous position
Ctrl-W	Delete to next word
Ctrl-Z	Move to end of file (last appointment)

Movement keys:

Left,Right	Calendar: Move a day
	Diary: Scroll window
	Diary input: Move a character at a time
Up,Down	Calendar: Move a week
	Diary: Move a line at a time
Ctrl-Left	Diary input: Move to previous word
Ctrl-Right	Diary input: Move to next word
Home	Calendar: Move to today
	Diary input: Move to start of line
End	Diary input: Move to end of line
Ctrl-Home	Diary input: Delete to beginning of line
Ctrl-End	Diary input: Delete to end of line
PgUp, PgDn	Calendar: Move a month
	Diary: Move a day (day mode)
	Diary: Move about two thirds of a screenful (summary mode)

Ctrl-PgUp	Calendar: Move back a year
	Diary: Move to first appointment
Ctrl-PgDn	Calendar: Move forward a year
	Diary: Move to last appointment

Delete keys:

Backspace	Diary input: Delete character to left of cursor
Ctrl-Backspace	Diary input: Delete to previous word
Del	Diary: Delete entry
	Diary input: Delete character at cursor

Other keys:

Ins	Toggle between Insert and Overtype modes
Enter	Select diary window/select option/end line
Esc	Select calendar window/Exit menu/Exit Scheduler

Menus

The Main menu:

┌══ Scheduler ══┐	
Files...	File menu
Search	Search for entry
Move	Move entry (change time/date)
Repeat...	Repeat entry
Alarm	Set/reset alarm
Print...	Print diary
Options...	Diary options menu

The Files menu:

┌══ Files ══┐	
New	Start new diary
Retrieve...	Load diary
Save as...	Save current diary
Merge...	Insert another diary
Load backup	Use previously saved version

The Repeat menu:

```
┌──── Repeat ────┐
│  Daily          │   Every day
│  Weekly         │   Same day every week
│  Non-weekend    │   Every weekday
│  Monthly        │   Same date every month
│  Yearly         │   Same date every year
│  Clear          │   Cancel repeats
└─────────────────┘
```

The Print menu:

```
┌═══════ Print ═══════┐
│  Advanced features...    │   Select days and layout
│  Copies              1   │   Select copies to print
│  Line spacing    Single  │   Set line spacing
│  Margins...              │   Set page margins
│  Headers...          On  │   Define page header
│  Footers...          On  │   Define page footer
│  Use printer...  Default │   Select printer setup
│  Settings...             │   Change printer setup
│  Go!                     │   Start printing
└──────────────────────────┘
```

The Options menu:

```
┌═══════ Options ═══════┐
│  Extension       DRY   │   Default extension
│  Backup file     Off   │   Toggle backups
│  Autoload        On    │   Toggle autoload
│  File lists...         │   Change sorting of file lists
│  Week start      Mon   │   Change first day of week
└────────────────────────┘
```

The Advanced features menu:

```
┌═══ Advanced Features ═══┐
│  Date range...      All  │   Select days to print
│  New page each day  No   │   Print each on a new page
│  Line between days  No   │   Print a line after each
│  Include free days  No   │   Print days without appointments
└──────────────────────────┘
```

Technical Notes

Limits:

- Maximum number of days: approximately 5,000.

- Maximum number of appointments: limited only by memory.

- Maximum number of appointments per day: approximately 5,000.

- Maximum number of alarms: approximately 50, depending on the length of the alarm text (4 KB total).

File format: ASCII. Each line of the file is a date header or appointment. All lines end with CR-LF. A date header consists of three spaces, the date in the format dd/mm/yyyy (regardless of country), a space, and the header text (up to 220 characters). Appointments without a repeat or alarm consist of four spaces, the time in 12 hour format (i.e. hh:mma or hh:mmp), a space and the appointment text (up to 220 characters). If the appointment repeats, the repeat indicator (y, m, w, n or d) replaces the second space. If the appointment has an alarm set, a @ character replaces the third space.

11
Chapter

The Editor

To delete text, use:

Press:	To delete:
Backspace	character to left of cursor
Del	character at cursor, or block
Ctrl-Backspace or Ctrl-Q	to previous word
Ctrl-W	to next word
Ctrl-Home or Ctrl-B	to beginning of line
Ctrl-End or Ctrl-E	to end of line
Ctrl-L	the line

When you delete text, it is stored temporarily so you can *undelete* it: simply position the cursor where you want to the text to go and press **F4** (Undo). If you press **F4** again, you will restore the previously deleted text, and so on. (The undelete buffer is used by all the built-in applications and can store about 2,000 characters.)

To delete, copy or move a *block* of text, use the Clipboard (see Chapter 5).
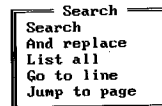
Searching

You can use the Search, List, Go to and Jump commands to move quickly to any piece of text, line or page within the document. With the Replace command you can also replace any piece of text with another.
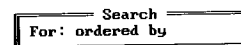
> *Note: The Search and Replace commands always search from the current position to the end of the document, but List searches the whole document.*

These facilities are accessed from the Search menu. Press **F10** to display the main menu and select Search, Go to:

```
╔══ Search ══╗
║ Search     ║
║ And replace║
║ List all   ║
║ Go to line ║
║ Jump to page║
╚════════════╝
```

To search for text:

• Select the Search option from the Search menu or press **F2** (Search) and the previous search text will be displayed:

```
╔════════ Search ════════╗
║ For: ordered by        ║
╚════════════════════════╝
```
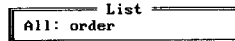
• Edit or type the text to search for, up to 16 characters. Search ignores the case of the text, but otherwise it must match exactly. (Search will still match text if it is split across the end of a line by wordwrap, but not if you split it yourself by pressing **Enter**.)

Like the other built-in applications, the top line of the frame shows the name of the file you are editing (UNNAMED.TXT if you haven't given it a name) and a change indicator (≈) if you've made changes since saving. The bottom line of the frame shows the current date and time and typing mode (insert or overtype), while the last line shows the function keys.

The Editor also displays the following information at the end of the top line of the frame:

- The cursor's line number (e.g. L:1): each line in the document is numbered consecutively, starting from 1.

- The cursor's column number (e.g. C:1), the horizontal position. (The lefthand column is 1.)

- The right margin setting (e.g. M:64), the column number at which the Editor will *wordwrap* (see *Formatting*).

- The page number (e.g. P:1) that you are on.

If the Editor is set to *autoload* (see *Editor Options*), it will automatically load and display the file that you edited last. If there is more than a screenful of text in the current file, an *elevator* is displayed down the right side of the screen:

```
 E:\AGENDA2.TXT ═══════════════════════════ L:11 C:1 M:64 P:1 ≈ ▜
◄                                                               ↑
At:     Brook St Office◄
Date:   July 2nd◄
Time:   10:30 to 11:30◄
◄
Anne Harvey 666222 [local] 444333 [main]◄
Planning Department◄
AAA Inc◄
2222 Prospect Place◄
Baltimore◄
◄
John Smith 123456◄
Marketing Department◄
AAA Inc◄
345 West St◄
Baltimore◄
◄
1       Discuss projections based on previous years.◄
◄
2       Discuss market trends to put projections into context.◄
◄
3       Review marketing analysis per product, select product         ↓
 Mon 01 Jul 1991  9:30 ═══════════════════════════════════ INS ◢
 1:Help  2:Search 3:Zoom 4:Undo  5:Mark  6:Cut   7:Copy 8:Paste  9:List 10:Menu
```

The height of the elevator (■ characters) shows what proportion of the document is being displayed, while its position in the shaft shows your position in the document. If there is more text before what is on the screen, an arrow is shown at the top of the elevator. If there is more text after what is on the screen, an arrow is shown at the bottom of the elevator.

Leaving the Editor

To leave the Editor, press **Esc**. If you have made
any changes since last saving the text, you will be
asked whether to save it first:

```
┌─ Save? ─┐
│ Yes     │
│ No      │
└─────────┘
```

Select `Yes` to save the changes (to the current filename), `No` to exit
without saving, or press **Esc** to stay in the Editor.

To save the text and then exit, press **Alt-X**.

Typing

Once in the Editor, you can start typing your letter, memo, report, etc.
using any of the normal typing keys. The only key that behaves
differently in the Editor is ^, which is used to put Control Codes in the
text to control printing (see *Printer Commands*). For now, if you want to
type a ^ character, simply press ^ twice.

You can type as much text as will fit into memory, as much as 200 pages
with typical memory usage, but for optimum performance and security,
keep files fairly small (e.g. less than 10,000 characters) and save them at
regular intervals (see *Filing*). You can correct any errors by erasing with
Backspace, or use the other editing facilities (see *Editing*).

The *wordwrap* facility controls how your typing is formatted:

- If wordwrap is on, the Editor formats the text you type to suit the right
  margin, making sure that words are not split across the ends of lines.
  Don't press **Enter** at the end of each line like you would on a
  typewriter; only use it when you insist that the line end here, e.g. at the
  end of a paragraph or for each line of a table.

- If wordwrap is off, you must press **Enter** at the end of each line, just
  like on a typewriter.

For more information on wordwrap and the right margin see *Formatting*.

If you want to use more of the screen for typing, or simply find the frame
distracting, press **F3** (Zoom) to turn it off. To turn it on, press **F3** again.

Typing Special Characters

To type a character that isn't on the keyboard, hold down **Alt-Fn** and
type the character's ASCII code on the numeric keypad, then release
Alt-Fn. (For a list of ASCII codes, see Appendix A.)

For example, to type a 1/2 character, (ASCII code 171):

- Hold down **Alt-Fn**

- Type 171 on the numeric keypad

- Release **Alt-Fn**

Note: To print these special characters, your printer must use the extended IBM PC character set and be switched to the correct national character set.

Moving Around the Text

To move the cursor around the text, use the following keys:

Press:	To move:
Left, Right, Up, Down	a character or line at a time
Ctrl-Left, Ctrl-Right	to the previous or next word
Tab	to the next tab stop, in overtype mode. (Inserts a TAB character in insert mode)
Home, End	to the beginning or end of line
PgUp, PgDn	about two thirds of a screenful at a time
Ctrl-PgUp or **Ctrl-A**	to the start of the file
Ctrl-PgDn or **Ctrl-Z**	to the end of the file
Ctrl-U	to the previous position (e.g. after using Search)

You can also jump to a particular line, page, word or phrase. See *Searching* for details.

Editing

You can correct or alter the text you've typed by moving the cursor to it (as described previously) and deleting or inserting text. To switch between inserting text at the cursor and overtyping text which is already there, press **Ins**.

To delete text, use:

Press:	To delete:
Backspace	character to left of cursor
Del	character at cursor, or block
Ctrl-Backspace or Ctrl-Q	to previous word
Ctrl-W	to next word
Ctrl-Home or Ctrl-B	to beginning of line
Ctrl-End or Ctrl-E	to end of line
Ctrl-L	the line

When you delete text, it is stored temporarily so you can *undelete* it: simply position the cursor where you want to the text to go and press **F4** (Undo). If you press **F4** again, you will restore the previously deleted text, and so on. (The undelete buffer is used by all the built-in applications and can store about 2,000 characters.)

To delete, copy or move a *block* of text, use the Clipboard (see Chapter 5).

Searching

You can use the Search, List, Go to and Jump commands to move quickly to any piece of text, line or page within the document. With the Replace command you can also replace any piece of text with another.

Note: The Search and Replace commands always search from the current position to the end of the document, but List searches the whole document.

These facilities are accessed from the Search menu. Press **F10** to display the main menu and select `Search, Go to`:

```
═══ Search ═══
Search
And replace
List all
Go to line
Jump to page
```

To search for text:

• Select the `Search` option from the Search menu or press **F2** (Search) and the previous search text will be displayed:

```
═══ Search ═══
For: ordered by
```

• Edit or type the text to search for, up to 16 characters. Search ignores the case of the text, but otherwise it must match exactly. (Search will still match text if it is split across the end of a line by wordwrap, but not if you split it yourself by pressing **Enter**.)

- To search in the same direction as last time, press **Enter**.
  To search forwards, press **Down Arrow**.
  To search backwards, press **Up Arrow**.

- The Editor moves to the next occurrence of the text, or displays `Text not found` if there is none in that direction.

To repeat the previous search press **Ctrl-S**.
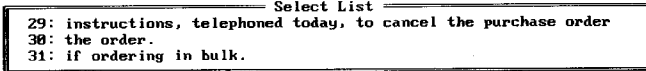
To list all occurrences of specified text:

- Press **F9** (List) or select the `List all` option from the Search menu.

- This will display the previous List search text. Edit the search text as described for Search, then press **Enter**.

```
========== List =======
| All: order            |
```

- The Editor will list the matching lines with their line numbers, like this:

```
========= Select List =========
| 29: instructions, telephoned today, to cancel the purchase order |
| 30: the order.                                                    |
| 31: if ordering in bulk.                                          |
```
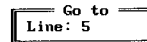
- To move to one of these lines, use the **Up** or **Down Arrow** key to select it from the list and press **Enter**, or press **Esc** to return to editing.

If there is no matching text the Editor displays `Text not found`; press any key to continue.

To repeat the previous List command, press **Alt-R**.

To go to a line:

- Select the `Go to line` option from the Search menu:
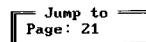
```
===== Go to =====
| Line: 5         |
```

- To jump to line number *nnn*, type *nnn* **Enter**.
  To jump forward *nnn* lines, type +*nnn* **Enter**.
  To jump back *nnn* lines, type -*nnn* **Enter**.

To repeat the previous Go to command, press **Ctrl-G**.

To jump to a page:

- Select the `Jump to page` option from the Search menu:

```
==== Jump to ====
| Page: 21        |
```

- To jump to page number *nnn*, type *nnn* **Enter**.
  To jump forward *nnn* pages, type +*nnn* **Enter**.
  To jump back *nnn* pages, type –*nnn* **Enter**.

To repeat the previous Jump command, press **Ctrl-J**.

To search for and replace text:

- Select the `And replace` option from the Search menu, which will display the previous search text:

```
┌──── Search ────┐
│ For: ordered by │
└─────────────────┘
```

- Edit the search text and press **Enter**. Note that searching ignores the case of the text, but otherwise it must match exactly.

- The previous replace text will be displayed. Edit it to specify the text to replace with and press **Enter**.

```
┌─ Replace "ordered by" ─┐
│ With: ordered with      │
└─────────────────────────┘
```

- When the Editor finds matching text, it displays this menu:

```
┌─── Replace ───┐
│ This occurrence │
│ Skip to next    │
│ Rest of file    │
└─────────────────┘
```

- To replace this match and search again, select `This occurrence`.

- To leave this match unchanged and search again, select `Skip to next`.

- To replace this match and all subsequent matches without any further prompts, select `Rest of file`.

- To cancel the replace command, press **Esc**.

If the search fails, the Editor displays `Text not found`; press any key to continue.

To repeat the previous search and replace press **Ctrl-R**.

Formatting

While the Editor is not a full word-processor, it provides a number of formatting facilities which you can use to help lay out documents. These are most useful when you are preparing documents for printing.

Margins

The Editor can display up to 78 characters per line in 80-column mode, but you can type up to 250 per line.

If *wordwrap* is on, it formats text to fit the *right margin*, by moving any word which would extend beyond the margin onto the next line. This makes typing paragraphs easy, since you only need to press **Enter** at the end of each paragraph, rather than each line. To distinguish between lines ended with **Enter** characters and lines which have been wordwrapped, in wordwrap mode **Enter** characters are displayed as triangle symbols.

If wordwrap is off, you can type or move beyond the right margin. The screen scrolls sideways to keep the cursor visible.

To turn wordwrap on or off, press **F10** to display the main menu and select the `Wordwrap` option:

• To turn it on for this and subsequent uses of the Editor, select `Permanently on`.

• To turn it on for this session only, select `This session`. (It will remain on until you load or merge another file.)

• To turn it off for this and subsequent uses of the Editor, select `Off`.

If you turn wordwrap off, the Editor does not reformat the text format, it simply stops wordwrapping. If you turn wordwrap on, the Editor reformats the whole file to the current right margin.

Note: When you load or merge a file, the Editor turns wordwrap off (unless permanently on) to preserve the file's current format. If you want to turn wordwrap on again, check the right margin first.

The right margin controls where wordwrapping takes place. It is ignored if wordwrap is off.

To change the right margin: press **F10** to display the main menu and select `Right margin`, type the new setting (between 10 and 250) and press **Enter**.

If you are going to print the document, turn wordwrap on and set the right margin to suit the paper width. If you are just going to view the document, turn wordwrap on and set the right margin to a few characters less than the screen width. If you are editing a batch file like AUTOEXEC.BAT or system file like CONFIG.SYS, turn wordwrap off.

Note: The current right margin setting will be used each time you use the Editor. It is not stored per file.

Tables and Tabs

Tabs provide a quick and easy way of aligning or spacing text, e.g. when creating tables. In insert mode, **Tab** inserts a TAB character at the cursor, which moves the subsequent text to the next tab stop to the right. In overtype mode, **Tab moves** the cursor to the next tab stop to the right. Tab stops are initially set every 8 columns (9, 17, 25, etc.).

To change the Tab spacing:

- Press **F10** to display the main menu and select Options:

- Select the TAB spacings option and type the new spacing (between 1 and 9)

```
┌──── Options ────┐
│ Extension    TXT │
│ Backup file  Off │
│ Autoload      On │
│ File lists...    │
│ TAB spacings   8 │
│ Count words      │
└──────────────────┘
```

The new setting affects the whole file, so any text that was formatted using TABs will be reformatted for the new spacing.

Indented Paragraphs

To produce an indented paragraph, make sure that wordwrap and autoindent are turned on, then start the paragraph with the number of TABs that you want to indent. You can also add text to the indent margin, by typing it before the TABs, providing the text is no longer than the current TAB spacing. For example, to produce this:

```
(1)     Note that on this occasion the cost of the
        changes must be borne by the supplier, but may
        in future be borne by the subcontractors.
```

Type this, with the right margin set to 55:

(1) **Tab** Note that on this occasion the cost of the changes must be borne by the supplier, but may in future be borne by the subcontractors. **Enter**

You can also use multiple tabs to indent further. For example, to produce:

```
Notes: 1.    On this occasion the cost of the
             changes must be borne by the supplier.

       2.    These costs may in future be borne by
             the subcontractors.
```

Type this:

```
Notes: Tab 1. Tab On this occasion the cost of the
changes must be borne by the supplier.Enter
Enter
Tab 2. Tab These costs may in future be borne by the
subcontractors. Enter
```

Page Layout

When you print a document, the Editor formats it to the page layout that
you have selected. For details of page margins, headers and footers, see
Using Printing, in Chapter 5.

Printer Commands

You can add Control Codes to a document to select printer effects such as
underline, bold or a different typeface. To type a *Control Code*, type ^
followed by the Control Code character. For example, to type Control-L,
type ^L. (Remember, to type a ^ character, simply press ^ twice.)

The effects produced depend on your printer, so see your printer manual
for details. However, the following are recognized by most printers:

^L   Page break (eject page or feed to top of next page)

^[Escape character (use to start an escape sequence)

The only Control codes that you cannot enter in this way are ^I, which is
interpreted as **Tab** and ^M, which is interpreted as **Enter**.

The Editor counts each Control code as an ordinary printable character,
so Control codes which change the printed position or the size of
characters may alter page formatting.

> *Note: If you use ^L to force a page break, the displayed page numbers will
> be inaccurate, but page numbers will print correctly.*

Filing

The main filing facilities are all accessed via the
Files menu. Press **F10** to display the main menu
and select the Files option:

```
┌──── Files ────┐
│ New           │
│ Retrieve...   │
│ Save as...    │
│ Merge...      │
│ Load backup   │
└───────────────┘
```
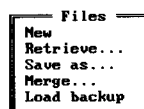
• To start a new file select the New option

• To edit a different file, select the Retrieve option. (This turns
  wordwrap off (unless permanently on) to stop it from reformatting to
  the current right margin.)

- To save the file, select the `Save as` option.

- To use the backup version of the file, select the `Load backup` option.

- To cancel all changes made since you last saved the file, load it again.

There are also two shortcuts, which you can use without selecting the Files menu:

- To save the file with the current name, press **Alt-S**.

- To save the file with the current name and exit, press **Alt-X**.

These standard commands are described in *Using Files* in Chapter 5.

To insert the text from another file:

- Position the cursor where you want to insert the text.

- Select `Merge` from the Files menu and type or select the file to merge.

```
┌──────── Merge ────────┐
│ │File: │ │
└───────────────────────┘
```

This turns wordwrap off (unless permanently on) so the merged information won't reformat to the current right margin. It does not affect the file you are merging from in any way.

✓ *Note: Only merge text files, such as TXT files created with the Editor. (The Address Book, Scheduler and To Do List files are also text files, but not the Worksheet. To copy information from the Worksheet, use the Clipboard.)*

Printing

To print the current file press **F10** to display the main menu and select `Print`:

```
┌──────── Print ────────┐
│ Pages...      1 -> end │
│ Copies             1   │
│ Line spacing    Single │
│ Margins...             │
│ Headers...          On │
│ Footers...          On │
│ Use printer... Default │
│ Settings...            │
│ Go!                    │
└────────────────────────┘
```

- To print the whole file, leave `Pages` set to `1->end`.

- To print a range of pages, select `Pages` and:

```
┌──── Pages ────┐
│ From        1 │
│ To        End │
└───────────────┘
```

  - To change the first page, select `From` and type the page number followed by **Enter**.

  - To change the last page, select `To` and type the page number followed by **Enter**. To specify the end of the file, type 0.

The pages will be printed with the same page numbers as if you had printed the whole file.

- Check the number of copies, line spacing, margins, etc., and change them if necessary. (For full details, see *Using Printing* in Chapter 5.)

- Make sure the printer is connected and ready, then select Go! to start printing and you should see the message Printing... (If you see any other messages, refer to Appendix E.)

You will not be able to use the computer for anything else while printing. To cancel printing, press **Esc**.

Editor Options

To change the Editor options: press **F10** to display the main menu and select Options:

```
┌──── Options ────┐
│ Extension    TXT │
│ Backup file  Off │
│ Autoload      On │
│ File lists... │
│ TAB spacings   8 │
│ Count words │
└─────────────────┘
```

To change the default filename extension: select Extension from the Options menu, type the extension (up to 3 characters) and press **Enter**. Be consistent in your choice of extensions, to avoid confusion in the future, and don't use extensions that have special meanings, such as COM, EXE, ADR, DRY, etc. File Manager will also use the Editor to load any file which you select that has this extension.

To create backups, set Backup file to Yes. The Editor will create a backup whenever you save a new version of a file, by changing the first character of its extension to $. (To use a backup, select Load backup from the Files menu.) Backups provide a quick and easy protection against mistakes, but use more disk space. If disk space is limited, turn backups off or use them just for important files.

To load the same file next time (if it is still available), set Autoload to On. This is very convenient if you often work on the same file.

To change the space between TAB stops, select TAB spacings, type the spacing (between 1 and 9) and press **Enter**. This will change the formatting of any text that uses TABs, so use it with caution.

To count the number of words in the file, select Count words and the result will be displayed like this. Press any key to continue.

```
┌──── Word Count ────┐
│ 1234 │
└────────────────────┘
```

To change the order in which files are listed, select File lists. (For details, see Chapter 5.)

Summary

Keys

Function keys:

F1	Help
F2	Search
F3	Zoom
F4	Undo
F5	Mark
F6	Cut
Shift-F6	Cut and append
F7	Copy
Shift-F7	Copy and append
F8	Paste
F9	List
F10	Main menu

Control keys:

Ctrl-A	Move to start of file
Ctrl-B	Delete to beginning of line
Ctrl-E	Delete to end of line
Ctrl-G	Repeat go to command
Ctrl-J	Repeat jump command
Ctrl-L	Delete line
Ctrl-Q	Delete to previous word
Ctrl-R	Repeat replace
Ctrl-S	Repeat search
Ctrl-U	Move to previous position
Ctrl-W	Delete to next word
Ctrl-Z	Move to end of file

Alt keys:

Alt-R	Repeat list
Alt-S	Save
Alt-X	Save and exit

Movement keys:

Left,Right	Move a character at a time
Up,Down	Move a line at a time
Ctrl-Left	Move to previous word
Ctrl-Right	Move to next word
Home, End	Move to beginning or end of line
Ctrl-Home	Delete to beginning of line
Ctrl-End	Delete to end of line
PgUp, PgDn	Move about two thirds of a screenful at a time
Ctrl-PgUp	Move to start of file
Ctrl-PgDn	Move to end of file

Delete keys:

Backspace	Delete character to left of cursor
Ctrl-Backspace	Delete to previous word
Del	Delete character at cursor, or block

Other keys:

Ins	Toggle between Insert and Overtype modes
^C	Insert Control character C (A..Z)
^^	The character ^
Alt-nnn	ASCII character nnn (0..255)
Enter	End line/menu selection
Esc	Exit menu/Editor
Tab	Insert TAB/move to Tab stop

Menus

The Main menu:

```
╔═════ Editor ═════╗
║ Files...         ║   Filing
║ Search, go to... ║   Search/replace/go to
║ Right margin  64 ║   Line length
║ Wordwrap...   On ║   Paragraph formatting
║ Auto-indent   On ║   Indented paragraphs
║ Print...         ║   Printing/print setup
║ Options...       ║   Editor options
╚══════════════════╝
```

The Files menu:

```
╔══ Files ══════╗
║ New           ║    Erase all text
║ Retrieve...   ║    Load file from disk
║ Save as...    ║    Save all text to disk
║ Merge...      ║    Insert text from disk
║ Load backup   ║    Use backup version
╚═══════════════╝
```

The Search menu:

```
╔══ Search ═════╗
║ Search        ║    Search for text
║ And replace   ║    and replace it
║ List all      ║    List occurrences
║ Go to line    ║    Jump to line number
║ Jump to page  ║    Jump to page number
╚═══════════════╝
```

The Print menu:

```
╔═════════ Print ═══════════╗
║ Pages...       1 -> end   ║    Select pages to print
║ Copies              1     ║    Set copies to print
║ Line spacing    Single    ║    Set line spacing
║ Margins...                ║    Set page margins
║ Headers...          On    ║    Define page header
║ Footers...          On    ║    Define page footer
║ Use printer... Default    ║    Select printer setup
║ Settings...               ║    Change printer setup
║ Go!                       ║    Start printing
╚═══════════════════════════╝
```

The Options menu:

```
╔══ Options ═══════╗
║ Extension   TXT  ║    Change default extension
║ Backup file Off  ║    Toggle backups
║ Autoload     On  ║    Toggle autoload
║ File lists...    ║    Alter sorting of file lists
║ TAB spacings  8  ║    Space between tab stops
║ Count words      ║    Count words in file
╚══════════════════╝
```

Summary **11-15**

Technical Notes

The Editor can handle files up to the free memory size. Lines may be up to 250 characters long.

If exchanging files with other editors, you may find some of the following information about the file format helpful:

*   **Enter** is stored as CR-LF. CR-LF and LF-CR are both taken as **Enter**.

*   When a line is wordwrapped, this is stored as a SPACE-CR-LF. SPACE-CR-LF is interpreted as a soft carriage return i.e. wordwrap and may therefore be changed to SPACE by the formatting process.

*   **Tab** is interpreted as a TAB command, which is stored as **Ctrl-I** and output as a number of spaces (to advance to the next tab stop). **Ctrl-I** characters will therefore be preserved in the file.

*   All ASCII codes other than 0 (1..255) are stored as received and are not subject to any special interpretation. In particular, there is no end-of-file character.

12
Chapter

The File Manager

Introduction

You can use File Manager to run applications and examine, use and manage your files, by simply selecting options from menus. You need never see the DOS prompt, or struggle to remember DOS command syntax again!

For example, to work on a spreadsheet, you can simply pick its name from a list and press a key. To delete a file, you can simply pick it from a list and press two keys!

Starting File Manager

To use the File Manager:

• Select the `File manager` option from the Pop Up Menu.

• OR Type `FILEM` and press **Enter** at the DOS prompt, or `FILEM` and a file specification to select the files to manage (e.g. `FILEM E:\*.TXT`). (You can also use the switch `/N` to prevent changes to the configuration.)

This will display the File Manager screen.

The File Manager Screen

The File Manager screen looks like this:

```
┌──────── Disk Drives ──────────┐  ┌ D:\MEMOS\*.* ═══════════════════ 27 ┐
│ A: Memory card             x  │  │ ..              <DIR>  21-07-92 12:06p│
│                               │  │ BACKUP          <DIR>  21-07-92 12:12p│
│                               │  │ REPLIES         <DIR>  21-07-92 12:12p│
│ B: Memory card             x  │  │ MEM01.TXT        2250  21-06-92  5:18p│
│                               │  │ MEM010.TXT       2270  11-07-92  5:18p│
│                               │  │ MEM011.TXT        299  16-07-92  2:34p│
│ C:\DOS          ROM DISK √    │  │ MEM012.TXT      14350  18-07-92  5:03p│
│   XXXKB ROM disk  XXKB free   │  │ MEM013.TXT       2052  18-07-92  4:52p│
│                               │  │ MEM014.TXT       2055  18-07-92  4:56p│
│ D:\             unlabeled √   │  │ MEM015.TXT       6150  18-07-92  4:59p│
│   XXKB RAM disk   XXKB free   │  │ MEM01A.TXT       2251  21-06-92  5:10p│
│                               │  │ MEM02.TXT        2450  21-06-92  5:18p│
│ E:\             unlabeled √   │  │ MEM02A.TXT       2252  21-06-92  5:29p│
│   XXXKB RAM disk  XXXKB free  │  │ MEM03.TXT        2456  21-06-92  5:44p│
│                               │  │ MEM03A.TXT       2256  21-06-92  5:50p│
│                               │  │ MEM04.TXT        2450  22-06-92  9:10a│
│                               │  │ MEM04A.TXT       2650  22-06-92  9:20a│
│                               │  │ MEM05.TXT        2456  22-06-92  9:33a│
│                               │  │ MEM05A.TXT       2650  22-06-92  9:49a│
│                               │  │ MEM06.TXT        2450  22-06-92  9:55a│
│                               │  │ MEM06A.TXT       2260  22-06-92 10:20a│
│                               │  │ MEM07.TXT        2450  22-06-92 11:10a↓│
└───────────────────────────────┘  └──────────────────────────────────────┘
 1:Help  2:Tag   3:Tags  4:Untag 5:View  6:Exec  7:Load  8:Filter  9:*.* 10:Menu
```

It consists of two windows:

- The lefthand window is **the drive list**, which displays information about the drives and disks. You use it to select the drive to manage.

- The righthand window is **the file list**, which lists each directory and file in the current directory. You use it to manage files.

You can switch windows using the **Tab, Right Arrow** or **Left Arrow** keys.

Using File Manager is very simple. For example, to use a file or directory usually requires just two simple steps:

- Move the cursor to the directory or file.

- Press a key to select a function (such as **Del** to delete, or **Alt-C** to copy).

This makes operation very quick and easy, since you don't need to type commands or file names, or remember command syntax. (If a function requires more information you'll be asked for it.)

The File List

At the top of the file list is the name of the current drive and directory i.e. the directory you are 'in' (e.g. C:\DOS\), followed by the selection filespec (usually *.*) and a count of the number of files matching that filespec. The current directory is important because you usually have to be in a directory to use its files. The selection filespec indicates which files are selected for listing (*.* means all files).

The first few names in the file list are directories, indicated by <DIR> to the right of the name. ".." is the parent of the current directory i.e. the one that contains the current directory (you won't see this if you are in the root directory, \, since it has no parent). If the current directory contains any subdirectories, they will be listed next.

After the directories are the files in the current directory. For each file, the file name, size, and date and time last modified are listed:

```
‖ MEMO1.TXT        2250 21-06-92  5:10p█
```

```
        name        size   date      time
```

Directory and file names are normally sorted into alphabetical order but you can select other methods (see *File Manager Options*).

Using the File List

Use **Up** or **Down Arrow** to move the cursor through the list a line at a time, or **PgDn** and **PgUp** to move quicker. If there are too many files to display at once, an elevator is displayed in the righthand side of the border and the list will scroll when you move the cursor.

To move direct to a file or directory name, you can type the first letter of its name. If there is more than one with this first letter, keep pressing the same key to move through the list.

To select a different directory, move to it and press **Enter**. You can recognize a directory easily by the <DIR> which is displayed to the right of its name. To select the directory that contains the current directory, select the . . entry from the start of the list, or press ".".

The simplest way to use a file is to move to it and press **Enter**. File Manager offers a menu of the most useful functions:

```
┌─ File DIARY.DRY ─┐
│ Copy             │
│ Delete           │
│ Move             │
│ Print            │
│ Load/Exec        │
└──────────────────┘
```
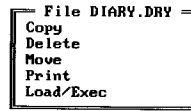
These options are largely self-explanatory, but Move also renames and Load/Exec loads a data file into one of the built-in applications or another program.

To perform other operations with files, or work with groups of files, you use other keys, as described in subsequent sections.

The Drive List

The drive list shows information about each drive on your system. If there is no disk in the drive, it simply displays the drive type and indicates that the drive is not ready by a cross:

```
║ A: Memory card                    x ║
   │      │                         │
 drive   drive                  drive not
 letter  type                    ready
```
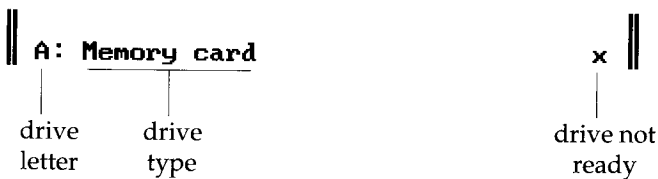
If there is a disk in the drive, it shows extra information about the disk:

```
      current                      disk
      directory                    label
         |                           |
  ||  E:\                     unlabeled ⌐  ||
      xxxKB RAM disk          xxxKB free|  ||
         |                        |        |
       disk                  free space  drive is
       capacity                          ready
```

Using the Drive List

You use the drive list to change the current drive:

- Move the highlight to the drive to select by using **Up** or **Down Arrow**, or type the drive letter.

- Press **Enter**. File Manager will list the current directory on the new drive and move you to the file list window.

Leaving File Manager

To leave File Manager, press **Esc** and select Yes from the menu. This will return you to the Pop Up Menu (or DOS command line).

Using Applications and Commands

This section describes how to use:

- Data files from the built-in applications and other programs

- Program files

- DOS commands and other programs

Using Data Files

To load a data file into a built-in application:

- Move to the filename and press **F7** (Load), OR press **Alt-L** OR press **Enter** and select the Load/Exec option from the menu.

- If the file has the correct extension for one of the built-in applications (see note below), it will load into that application.

- If File Manager does not recognize the file extension, it will ask which application to use:

```
┌─ Retrieve NAMES.DOC into ─┐
│ Address book              │
│ Scheduler                 │
│ Editor                    │
│ Worksheet                 │
│ Other program             │
└───────────────────────────┘
```

- To load the file into a built-in application, select it from the menu.

- To load the file into a third party application, select `Other program` and type the command required to run the application. (The program files must be installed correctly on your DOS search path, or File Manager will not be able to find them.)

- When you quit the application, `Press ↵ to continue` will be displayed. Press **Enter** to return to the File Manager.

> *Note: The applications normally use these extensions: .ADR (Address Book), .DRY (Scheduler), .TXT (Editor), .WKS (Worksheet). If you change these (using an application's Options menu), File Manager will automatically recognize the new extension. If you change a file's extension without changing an application's options, or use other programs which create files with these extensions, you may experience problems.*

To load a data file into a third party program:

- Move to the filename and press **Alt-O**:

```
┌══ Retrieve MAIN.WP into ══┐
│ Program:                  │
└───────────────────────────┘
```

- Type the program name and press **Enter**. (The program files must be installed correctly on your DOS search path, or File Manager will not be able to find them.)

- When you quit the application, `Press ↵ to continue` will be displayed. Press **Enter** to return to the File Manager.

Using Program Files

Program files have the extension .BAT, .COM or .EXE. To use one:

- Move to the program file name.

- Press **F6** (Exec) OR press **F10** and select the `Command line` option from the main menu.

```
┌═════ Command ═════┐
│ Execute: PROG2     │
└────────────────────┘
```

- If the program requires any arguments, press **End** to move to the end of the line and type them.

- Press **Enter** to run the program and it will execute just as if you had typed the command at the DOS prompt.

- When the command finishes executing, Press ┘ to continue will be displayed. Press **Enter** to return to the File Manager.

✓ *Note: If there is not enough free memory to run a program, return to the DOS command line by exiting File Manager and try again. To return to File Manager, type* FILEM *and press* **Enter**.

Using Commands and Programs

To use a DOS command or a program which is not listed in the current directory, you must type its name as follows. This will work for any program which is stored on your DOS search path. To use a program which is not on your search path, either move to its directory first, or type its pathname.

- Press **F6** (Exec) OR press **F10** and select the Command line option and a window will be displayed like this:

```
┌─────────── Command ───────────┐
│ Execute: PROG2                 │
└───────────────────────────────┘
```

- Type the command and press **Enter**. This will delete the offered command and execute the one you typed.

- When the command finishes, Press ┘ to continue will be displayed. Press **Enter** to return to File Manager.

For details of the DOS commands and utilities, see Chapter 7.

✓ *Note: If there is not enough free memory to run the command, return to the DOS command line by exiting File Manager and try again. To return to File Manager, type* FILEM *and press* **Enter**.

Managing Files

To manage a single file, you typically:

- Move the cursor to the file name.

- Press **Enter** and select the function from the displayed menu:

```
┌─ File DIARY.DRY ─┐
│ Copy             │
│ Delete           │
│ Move             │
│ Print            │
│ Load/Exec        │
└──────────────────┘
```

- OR use of the following shortcut keys: to copy, press **Alt-C**

to delete, press **Del**
to move/rename, press **Alt-M**
to view, press **F5**

To manage a group of files, you typically:

- Select the files to work with, by using one of the tagging functions.

- Press **F10** to display the Main menu, select the `Files` option and select the function you require from the menu:

- OR use one of the shortcut keys listed above.

```
┌──── Files ────┐
│ Copy          │
│ Delete        │
│ Inverse tags  │
│ Move          │
│ View          │
│ Tag           │
│ Untag         │
│ Print         │
└───────────────┘
```

The Copy, Delete, Move, View and Print options are largely self-explanatory, although note that you also use Move to rename files. The Inverse tags, Tag and Untag options are used to select groups of files.

File management is affected by a number of File Manager options. See *File Manager Options* for details.

Selecting Files

The first stage in any file management operation is to select the files or directories to manage:

To select a single file, simply move the cursor to it.

To select all the files in a directory, move the cursor to the directory name. (This may also select all subdirectories contained in that directory; see *File Manager Options*.)

To select a group of files, you can 'tag' each one in turn by moving to it and pressing **F2** (Tag). When you tag a file, a diamond symbol is displayed next to its name. (You can also tag directories this way.)

To select a group of files, you can also tag by name, using a *filespec*:

- Press **F3** (Tags). This will prompt you for the name, like this:

```
┌═══════ Tag Files ═══════┐
│ Filespec: *.*           │
└─────────────────────────┘
```
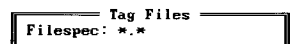
- Edit the displayed name to specify the group of files to select, then press **Enter**. For example, to select all Worksheet data files, type `*.WKS` and press **Enter**.

To untag a single file, simply move to it and press **F2** again.

To untag a group of files, you can also untag by name:

- Press **F4** (Untag). This will prompt
  you for the name, like this:

```
┌──────── Untag Files ────────┐
│ Filespec: *.*               │
└─────────────────────────────┘
```

- Edit the displayed name to specify the
  group of files to untag, then press **Enter**. For example, to untag all
  filenames that start "JAN", type JAN*.* and press **Enter**.

To reverse the current tags i.e. tag just those files which are not tagged at
present, press **F10** and select the Files option, then select the Inverse
tags option.

You can use any combination of the tagging techniques to select just
those files that you want. Tagging remains active until you carry out a
function on the files or change drive or directory, so you can only tag files
and directories from a single directory. The tag files, untag files, and
inverse tags options do not affect directory tagging.

You can also restrict the file list to the types of files you are interested in,
by using the Select function (see *Other Functions*).

*Note: For information on using the * and ? wildcard characters in filespecs,
see Using Wildcards, in the next section.*

Copying Files

To copy a single file:

- Move to the file name and press **Alt-C**,
  or press **Enter** and select Copy from
  the menu.

```
┌──── Copy HOURS.TXT to ────┐
│ Destination:              │
└───────────────────────────┘
```
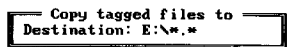
- Type the name for the copy. To put it in the same directory, type a new
  name (which must be different to the current name). To copy to
  another directory or drive, type a path, or to give the copy a different
  name, type a pathname. (See *Using paths*, below)

- When you press **Enter** copying will begin.

- If the Confirmation option is set to
  YES and copying would overwrite a
  file on the destination, you will be
  asked whether to overwrite it:

```
┌─ Overwrite A:\ACCOUNTS.$XT ─┐
│ Yes                         │
│ No                          │
└─────────────────────────────┘
```

If the Newer files only option is set to YES, a file will not be copied if
it would overwrite a file which is the same age or younger than it. If you
need to change disks, File Manager will prompt you.

To copy multiple files:

- Tag the files, and press **Alt-C** or select
  the Copy option from the Files menu:
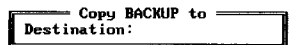
```
┌── Copy tagged files to ──┐
│ Destination: E:\*.*       │
│                          │
└──────────────────────────┘
```

- Type the destination name:

  - To copy to the same directory, give the copies different names by using wildcards in the filename (see *Using wildcards,* below).

  - To copy to another drive or directory with the same names, type the directory path (see *Using paths,* below).

  - To copy to another drive or directory with different names, type a pathname with wildcards (see *Using paths* and *Using wildcards*).

- Press **Enter** to begin copying, which proceeds as described above.

To copy a directory (and its files):

- Move to the directory name and press
  Alt-C or press **Enter** and select Copy
  from the menu.

```
┌──── Copy BACKUP to ────┐
│ Destination:            │
│                         │
└─────────────────────────┘
```

- Type the destination name:

  - To copy the files to the current directory, type a blank destination.

  - To copy the files to another directory or drive, type its path.

  - To rename the copies, use wildcards in the pathname.

- Press **Enter** to begin copying, which proceeds as described above, but also note that:

  - If a directory contains hidden or system files, they will only be copied if the Hidden/System files option is set to YES.

  - If the And subdirectories option is set to YES, any subdirectories within the selected directory will also be copied to the destination.

Using paths

To copy to another drive or directory, you must type a *path* or *pathname* as the destination. A path specifies a directory and consists of an optional drive letter (e.g. A:) and a sequence of directory names separated by \ characters. A pathname specifies a file and consists of a path followed by a filename.

For example, to copy to the TIMES directory on drive A, type `A:\TIMES`. The `A:` specifies the drive, while the `\` at the start of the path specifies that the TIMES directory is in the root directory of the drive.

To copy to the TIMES directory in the root of the current drive, simply omit the drive letter i.e. type `\TIMES`.

To copy to the TIMES directory which is in the current directory, simply omit the `\` from the start of the path i.e. type `TIMES`.

Using wildcards

To give copies different names based on the original names, use the DOS wildcards (`*` and `?`) in the destination name.

`?` means copy one character from this position in the original file name. For example, if you tag JUNE1NEW.WKS and JUNE4.WKS, to create copies called BACK1.KEP and BACK4.KEP, you could type `BACK?.KEP`. This uses `?` to copy just the fifth character from the name.

`*` means copy the rest of this part of the name from this position in the original file name. For example, if you tag HOURS.TXT and MEMO.TXT, to create copies named HOURS.BAK and MEMO.BAK, you could type `*.BAK`. This uses `*` to copy the whole of the first part of the name.

Deleting Files

⚠️ *Caution: Once you have deleted a file it is permanent, so only delete a file when you are **sure** that you no longer need it. If you are at all unsure about this, make sure that the Confirmation option is set to YES (see File Manager Options) or delete files one at a time.*

To delete a single file:

- Move the cursor to it and press **Del**, or press **Enter** and select `Delete` from the menu. A confirmation prompt will be displayed like this:

```
Delete E:\TEMP\HOURS.TXT
Yes
No
```

- Press **Y** to delete the file, or **N** to leave it alone.

If you cannot delete a file, it has probably been protected by using the *read-only attribute* or is on a write-protected disk. In this case, you probably shouldn't delete it! If you are sure that you should, use the DOS ATTRIB command to remove the attribute (see Chapter 7), or turn the write protect switch off. (You cannot delete files from drive C.)

To delete multiple files:

- Tag the files, and press **Del** or select the `Delete` option from the Files menu. A confirmation prompt will be displayed like this:

```
┌ Delete tagged files ┐
│ Yes                  │
│ No                   │
└                      ┘
```

- Type **Y** to delete the files, or **N** to cancel the entire delete operation.

- If the `Confirmation` option is set to YES, you will be asked to confirm deletion of each file in turn, as described for deleting a single file.

To delete a directory and all the files it contains:

- Move to the directory name, and press **Del** or select the `Delete` option from the Files menu. A confirmation prompt will be displayed like this:

```
┌ Delete E:\TEMP1\*.* ┐
│ Yes                  │
│ No                   │
└                      ┘
```

- Press **Y** to delete the directory or **N** to cancel the delete operation.

- If the `And subdirectories` option is set to YES, this will also delete all the subdirectories within this directory (and their subdirectories), so you will see another warning:

```
┌ This Includes Subdirectories? ┐
│ Continue                       │
│ Abandon                        │
└                                ┘
```

Press **C** to delete the directory and all files and directories it contains, or **A** to leave them unchanged.

- If the `Confirmation` option is set to YES, you will be asked to confirm deletion of each file in turn. Press **Y** or **N** as appropriate for each file.

If you cannot delete a directory, it may contain subdirectories. If not, it may contain hidden or system files: set the `Hidden/System files` option to YES (see *File Manager Options*) and check the directory again.

Renaming and Moving Files

⚠ *Caution: Many applications use a file's extension to indicate what the file contains, so changing this may prevent you using it normally. For example, if you change a Worksheet file's extension from .WKS to .SPD, File Manager will no longer load it automatically into the Worksheet for you.*

Managing Files **12-11**

To rename or move a single file:

- Move to the file name and press **Alt-M**, or press **Enter** and select the `Move` option from the menu:

```
┌─── Move HOURS.TXT to ───┐
│ Destination:            │
└─────────────────────────┘
```

- To rename the file, simply type the new name.

- To move the file to another directory or drive, type its pathname.

- If the `Confirmation` option is set to YES and the move would overwrite a file on the destination, you will be asked to confirm the move.

If the `Newer files only` option is set to YES, a file will not be moved if it would overwrite a file on the destination which is the same age as or newer than it. If you need to change disks, File Manager will prompt you.

If a move fails for any reason (e.g. lack of space on the destination disk), the original file will be unchanged.

To rename or move multiple files:

- Tag the files and press **Alt-M**, or select the `Move` option from the Files menu:

```
┌── Move tagged files to ──┐
│ Destination:             │
└──────────────────────────┘
```

- To rename the files, type a name with wildcards.

- To move the files to another directory or drive, type its path.

- To move and rename the files, type a pathname using wildcards.

To rename or move all the files in a directory:

- Move to the directory name and press **Alt-M** or select the `Move` option from the Files menu.

```
┌─── Move BACKUP to ───┐
│ Destination:         │
└──────────────────────┘
```

- Type the destination name as described for moving multiple files.

If the `And subdirectories` option is set to YES, any directories within the selected directories will also be moved. For information on using wildcards and paths, see the description of Copy.

Note: You cannot move or rename a directory.

Viewing Files

Viewing a file simply displays its contents and has no other effect on it. You should only view text files, such as files with the extension .TXT (produced by the Editor and To Do List), .BAT (batch files) and CONFIG.SYS. If you view other files, such as program or Worksheet files, you will not be able to understand the result. (If you try to view a COM or EXE file, File Manager will ask you to confirm your choice.)

To display text files:

- Select the file or files to view and press **F5** (View), or select the View option from the Files menu.

- If you select a file with the extension .COM or .EXE, you will be warned with a message like this, as these files probably won't display correctly:

    ```
    ┌─ View APPEND.EXE ─┐
    │ Yes               │
    │ No                │
    └───────────────────┘
    ```

    Select Yes if you want to view the file.

- This will display the contents of the first file. If there is more text than will fit on the screen, Press ↵ to continue will be displayed at the end of each screenful. Press **Enter** to see the next screenful, or **Esc** to stop viewing the file(s) and return to File Manager.

    To display a data file (e.g. an Address Book or Scheduler file) use **F7** (Load) to load it into the application that created it.
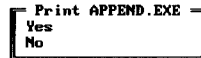
Printing Files

Printing a file simply copies it to the printer port defined in your setup (see Chapter 6). You should only print text files, such as files with the extension .TXT (produced by the Editor and To Do List), .BAT (batch files) and CONFIG.SYS. Other files may not print correctly.

To print a text file: move to it, press **Enter** and select the Print option.

To print multiple text files tag the files and select the Print option from the Files menu.

If you select a file with the extension .COM or .EXE, you will be warned with a message like this, as these files probably won't print correctly. Select Yes if you want to print the file.

```
┌─ Print APPEND.EXE ─┐
│ Yes                │
│ No                 │
└────────────────────┘
```

To print a data file, load it into the application that created it.

Other Functions

The other File Manager functions are all accessed from the Main menu. To use them, press **F10** and select the option you require from the menu:

```
┌─ File Manager ─┐
│ Files...        │
│ Command line    │
│ Make directory  │
│ Relog drives    │
│ Select files    │
│ Time and date   │
│ Options...      │
└─────────────────┘
```

Creating a Directory

To create a directory:

- Select the `Make directory` option from the Main menu:

```
┌──── Make Directory ────┐
│ Name:                  │
└────────────────────────┘
```
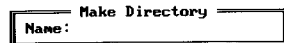
- To create a directory in the current directory, type its name.

- To create a directory in another directory or on another drive, either move to it first, or type its path. For example, to create the directory DATA in the AUGUST directory on drive A:

    - Select drive A as current drive, select AUGUST as current directory, use `Make directory` and type the name as DATA.

    - OR Use `Make directory` and type the name as `A:\AUGUST\DATA`.

Updating the File and Drive Lists
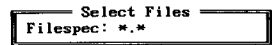
File Manager updates the file and drive lists each time you use the management facilities, change directory or drive. If you change disks, or have some other reason to think that the lists might be out of date, you can update them manually: press **Alt-R** (Relog) or select the `Relog drives` option from the Main menu.

Selecting Files to List

File Manager will normally list all the files in the current directory, but you can restrict the list to certain types of file. For example, if you want to check on your backup files, you could list just the `.$*` (backup) files.

To select files for listing:

- Press **F8** (Filter) or select the `Select files` option from the Main menu. This will prompt you for a filespec:

```
╔════════ Select Files ════════╗
║ Filespec: *.*                ║
╚══════════════════════════════╝
```

- Type a wildcard file specification of the files you want listed. For example, to list just batch files, type `*.BAT` and press **Enter**.
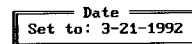
✅ *Note: Restricting the file list also affects file management. For example, if you copy a directory with `*.WKS` selected, you will only copy the .WKS files.*

To list all files: press **F9** (*.*) or type a selection filespec of `*.*`.

Changing the Time or Date
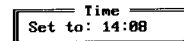
The built-in clock should keep good time, but you may want to reset it if you change time zones or the local time changes:

- Select the `Time and date` option from the Main menu. This will display the current date like this:

```
╔══════════ Date ══════════╗
║ Set to: 3-21-1992        ║
╚══════════════════════════╝
```

- To accept the displayed date, press **Enter**. To change the date, edit it, separating the day, month and year with forward slashes (/) or hyphens (-), and press **Enter**.

- This will display the current time like this:

```
╔══════════ Time ══════════╗
║ Set to: 14:08            ║
╚══════════════════════════╝
```

- To accept the displayed time, press **Enter**. To change the time, edit it, using the 24-hour clock (format `hh:mm:ss`) and press **Enter**.

✅ *Note: The date format depends on the country selected in the Pop Up Menu options. For example, if you are using the American setup it is mm-dd-yy.*

File Manager Options

To change File Manager options, press **F10** to display the main menu and select Options:

To change an option, move to it and press **Enter**. This will toggle options with just two settings and allow you to select or type the setting for the others:

```
================ File Options ================
And subdirectories                          No
Newer files only                           Yes
Confirmation                               Yes
Hidden/System files                         No
Sort order...                             Name
Direction of sort                       Ascend
Ignore files before                      Start
Ignore files after                         End
```

- And subdirectories: set to YES to copy, move or delete all subdirectories within the selected directory.

- Newer files only: set to YES to overwrite (during copy or move) a file on the destination only if it is older than the source file.

- Confirmation: set to YES to confirm deletion or overwriting (during copy or move) for each file. (If set to NO, you are asked to confirm the entire operation.)

- Hidden/System files: set to YES to list (and manage) files with hidden or system attributes.

- Sort order: select Name, Date, Size, or Extn (extension) from the menu to decide how names will be sorted in file lists within File Manager.

- Direction of sort: select Ascend or Descend to decide how names will be sorted in the file list, within File Manager.

- Ignore files before: type a date, or press **Home** to type today's date, or **Del** to set it to Start (list all files no matter how old). File Manager will not list or manage files last amended before this date.

- Ignore files after: type a date, or press **Home** to type today's date, or **Del** to set it to End (list all files, no matter how new.) File Manager will not list or manage files last amended after this date.

- To save the changes and return to the Main menu, press **Esc**.

Summary

Keys

Function keys:

F1	Help
F2	Tag/untag file at cursor
F3	Tag by name
F4	Untag by name
F5	View file
F6	Execute command
F7	Load file into application
F8	Select files to list
F9	Deselect (list all files)
F10	Main menu

Movement keys:

Left,Right,Tab	Move between file list and drive list
Up,Down	Move the cursor through a list or menu
PgUp,PgDn	Scroll the file list by about two thirds of a screenful

Control keys: not used.

Alt keys:

Alt-C	Copy file(s)
Alt-L	Load file into application
Alt-M	Move/rename file(s)
Alt-O	Load file into other program
Alt-R	Relog drives

Delete keys:

Del	Delete file(s)

Other keys:

Esc	Exit menu/File Manager
A - Z	**In the file list,** move to next name with this first letter
	In the drive list, select drive as current drive
	In a menu, select the option starting with this letter
Enter	**In the file list:**
	On a file name, display a menu of management options
	On a directory name, move to the directory
	In the drive list, select drive as current drive

Menus

The Main menu:

```
╔═══ File Manager ═══╗
║ Files...           ║   File menu
║ Command line       ║   DOS commands
║ Make directory     ║   Create directory
║ Relog drives       ║   Update file and drive lists
║ Select files       ║   Limit file operations
║ Time and date      ║   Set time and date
║ Options...         ║   File Manager options menu
╚════════════════════╝
```

The Files menu:

```
╔═══ Files ═══╗
║ Copy         ║   Copy files and directories
║ Delete       ║   Erase files and directories
║ Inverse tags ║   Tag untagged files
║ Move         ║   Move or rename files
║ View         ║   Display text file contents
║ Tag          ║   Tag files by name
║ Untag        ║   Untag files by name
║ Print        ║   Print text files
╚══════════════╝
```

The Options menu:

```
╔═══════════ File Options ═══════════╗
║ And subdirectories        No  ║   Subdirectories too
║ Newer files only          Yes ║   Only overwrite if older
║ Confirmation              Yes ║   Confirm before overwrite
║ Hidden/System files       No  ║   Hidden and system files
║ Sort order...             Name║   Sorting of file lists
║ Direction of sort       Ascend║   Sorting of file lists
║ Ignore files before     Start ║   Restrict files by age
║ Ignore files after        End ║   Restrict files by age
╚═══════════════════════════════════╝
```

13
Chapter

The Worksheet

Introduction

The Worksheet provides many of the features of the industry standard, Lotus 1-2-3, and can load and use .WKS and .WK1 files created by Lotus 1-2-3. This means you can create a spreadsheet in Lotus 1-2-3 on your desktop PC, transfer it to your Sharp computer and then take it with you wherever you go!

Starting the Worksheet

To use the Worksheet:

- Select the Worksheet option from the Pop Up Menu.

- OR Select a Worksheet file (e.g. a file with the extension .WKS) from the File Manager and press **Enter**.

- OR Type WSHEET and press **Enter** at the DOS prompt, or WSHEET filename **Enter** to load the spreadsheet named filename. (You can also use the switch /N to prevent changes to the configuration.)

This will display the Worksheet screen.

The Worksheet Screen

The Worksheet screen looks like this:

```
 UNNAMED.WKS                                              A1..A1
 A1:
        A   |   B   |   C   |   D   |   E   |   F   |   G   |   H   |
 1
 2
 3
 4
 5
 6
 7
 8
 9
 10
 11
 12
 13
 14
 15
 16
 17
 18
 19
 20
 Mon 01 Jul 1991 9:30                                            INS
 1:Help  2:Edit  3:Zoom  4:Undo  5:Mark  6:Cut  7:Copy  8:Paste  9:Recalc  10:Menu
```

Like the other built-in applications, the top line shows the name of the file you are editing (or UNNAMED.WKS if none) and a change indicator ($\approx$), while the bottom two lines show the date, time and function keys.

In addition:

- The top right corner shows the area of spreadsheet that has been defined (e.g. A1..A1). (These are *cell references* for the corners of the spreadsheet; see below.)

- The second line shows the cursor position (e.g. A1, another cell reference) and information stored at the current position. You also use this line to enter and edit information.

The rest of the screen provides a view of part of the spreadsheet, which consists of a grid of rectangular slots called *cells*. The spreadsheet is 127 columns wide and 255 rows deep, although you will rarely use all of it. You can store text, numbers, or formulae in each cell. You can also use the information from one cell in another, to create complex formulae from a number of simpler formulae, or summarize lists or tables information.

Each column has an alphabetic label (A, B, C, etc.), while each row has a numeric label (1, 2, 3, etc.). To refer to a cell, you type its column letter followed by its row number. For example, the *cell reference* for the top left cell is A1, while the cell beneath it is A2.

Leaving the Worksheet

To leave the Worksheet, press **Esc**. If you have made any changes since last saving the spreadsheet, you will be asked whether to save it first:
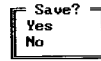
```
┌─ Save? ─┐
│ Yes     │
│ No      │
└─────────┘
```

Select Yes to save the changes (to the current filename), No to exit without saving or press **Esc** to continue using the Worksheet.

To save the spreadsheet and then exit, press **Alt-X**.

Moving around the Worksheet

When you first start the Worksheet, the cursor (a rectangular bar) is in the top left cell, A1. Use the following keys to move around the spreadsheet:

Use	To move:
Left, Right, Up, Down	a cell at a time
Tab or **Ctrl-Right**	right one screen width
Shift-Tab or **Ctrl-Left**	left one screen width
PgUp	up about two thirds of a screenful
PgDn	down about two thirds of a screenful
Ctrl-PgUp	to top of current column
Ctrl-PgDn	to last cell used in current column
Home	to A1
End Arrow key	if current cell is blank, move to the first non-blank cell in arrow direction. If current cell is non-blank, move to the cell before the first blank cell in arrow direction.
End Home	to last (bottom right) used cell

As you move, the cell reference on line 2 changes to show your position.

Once you start typing (or editing) text in a cell, you can use the usual keys to move the cursor within the text. For example:

Use	To move:
Left or **Right Arrow**	a character at a time
Ctrl-Left Arrow	to previous operator
Ctrl-Right Arrow	to next operator
Home	to the beginning of the line
End	to the end of the line

Typing Text

To put text in a cell, move the cursor to the cell, type the text and it will be displayed on the input line. Correct any typing errors by using **Backspace**. Press **Enter** (or **Up** or **Down Arrow**) to store the text.

You can type up to 240 characters in a cell. (If the text is wider than the cell, it will still be displayed, providing the cells to the right are empty.)

Text is displayed in the default text format, which is usually left-aligned (but see *Worksheet Options*). To change the way it is displayed, start the text with one of these characters:

'	to left align the text within a cell (the default)
^	to center align the text
"	to right align the text
\	to duplicate the text for the entire column width.

To force a page break when the spreadsheet is printed, type ^L in a text cell (typically in the first column of a blank row).

Typing Numbers

You can type numbers just like other text, but if you want to use them in calculations or formulas, they must start with a digit (0 to 9), +, -, (, # or the decimal point character (usually a period but see *Worksheet Options*).

To type very large or very small numbers, you can use scientific notation. For example, to type one thousand million, you could type 1E9; to type one millionth, you could type 1E-6. Numbers must be in the range approximately 2.23E-308 to 1.7E+308 (plus or minus).

Typing Formulas

You can type formulae just like other text, but just like numbers, you must start a formula with a digit (0 to 9), +, -, (, # or the decimal point character (usually a period). You can also start the formula with an @ character, to use one of the Worksheet's arithmetic functions (see below).

A formula can contain numbers, operators, functions and cell references and may be up to 240 characters long. The simplest formulae use numbers and the arithmetic operators: +, -, / (divide) and * (multiply). For example, to enter 1000 divided by 3, type 1000/3 and press **Enter**.

More versatile formulas are ones that use other cells. You can type a cell reference almost anywhere that you could type a number and the formula will use that cell's current value. For example, to calculate the sum of the figures you entered in B1, B2 and B3, in C2, type +B1+B2+B3 and press **Enter**.

You cannot type the formula as just B1+B2+B3, as the Worksheet would treat this as text, since it doesn't start with one of the correct characters!

Worksheet Operators

The arithmetic operators that you can use, in descending order of precedence, are:

^	power (e.g. 2^4 is the fourth power of 2)
+,-	unary plus and minus (e.g. -2)
*,/	multiply, divide
+-	add, subtract (e.g. 2-4)
>,<,=,<=,>=,<>	greater than, less than, equal, less than or equal, greater than or equal, not equal (relational operators)
#NOT#	logical NOT
#AND#,#OR#	logical AND, OR

Operators of the same precedence are evaluated from left to right within a formula. You can also use parentheses to force independent evaluation of parts of a formula.

The only string operator is &, which concatenates (joins) strings.

Worksheet Functions

The Worksheet provides a wide range of @*functions* to perform complex calculations and other operations for you.

The numeric functions produce numeric results, while the string functions produce string (text) results. You can use a numeric function almost anywhere that you could use a number, and a string function almost anywhere that you could use text.

For example, the function @SUM adds together all the values in a list. To use it to add B1, B2 and B3, type @SUM(B1,B2,B3). The functions are described in detail later in this chapter (see *The @Functions*).

Editing

To **edit the contents of a cell**, move to it and press **Enter** or **F2**. This displays the contents on the input line. Use the usual line editing keys to edit it, then press **Enter** to store the new contents in the cell.

To **delete the contents of a cell**, move to it and press **Del**.

To **delete the contents of a range of cells**, use the RANGE ERASE command, described later in this chapter.

To **delete the entire contents of the spreadsheet**, use the NEW command, described later in this chapter.

You can recover deleted cells (but not the entire spreadsheet) by using **F4** (Undo). See *Using Undelete* in Chapter 5 for more information.

Cell References

To refer to a single cell, you can type its cell reference, like A1 or C55. It may take one of three forms: relative, absolute and mixed.

A relative cell reference is stored as a distance from the cell in which it is typed. For example, if you type +D1 in cell B2, the reference is stored as "go up one row and right two columns". The Worksheet treats all cell references as relative unless you indicate otherwise.

If you copy (or move) a cell with a relative reference in it, the reference will reflect the new location. For example, if cell B2 contains +D1 and you copy it to B3, B3 will contain the reference +D2. Relative references make it easy to create a table by copying rows or columns.

An absolute cell reference is stored as the exact cell name typed. To enter an absolute cell reference, precede both the column letter and the row number with a $ sign. For example, type B2 to specify B2 as an absolute cell reference.

If you copy (or move) a cell containing an absolute reference, it will still refer to the same cell. You'll typically use an absolute reference to refer to a constant stored outside a table.

A mixed cell reference uses a relative reference for its column and an absolute reference for its row, or vice versa. For example, if you type $C4 in cell A1, it is stored as "go to column C then go down three rows from the current row". Similarly, if you type C$4 in cell A1, it is stored as "go to row 4 then go right 2 columns from the current cell".

You can also *paint* a cell reference instead of typing it, after typing one of these symbols: + − * / = < > , # ^ (

- Type the formula as usual, but when you are about to type the cell reference, press **Up Arrow**.

- A box will appear around the current cell. Use the arrow keys to move it to the cell that you want to use. Note that the cell reference appears on the input line.

- When you have selected the correct cell, type the rest of the formula, or press **Enter** to complete it.

Ranges

A *range* specifies a rectangular area of the spreadsheet. It can consist of a number of cells in a single column or row, or in several rows and columns. You can't use ranges on their own in cells or formulae, but may use them with functions (and certain commands) that support ranges. You can type a range, or *paint* it.

To type a range, type a cell reference for one corner of the range, two periods, and a cell reference for the opposite corner. For example, to specify cells B1, B2 and B3, type `B1..B3`, or to sum the values in the range from A1 to F21 using the @SUM function, type `@SUM(A1..F21)`.

To paint a range:

• Type the function that will use the range, but when you are about to specify the range, press **Up Arrow**.

• A box will appear around the current cell. Use the cursor keys to move it to one corner of the range and press "." (period) to *anchor* the range. (If you select the wrong cell, press **Esc** to try again.)

• Use the cursor keys to stretch the box to the opposite corner of the range. Press **Enter** to add the range to the input line.

• You may now carry on typing the function.

Circular References

A circular reference is when a formula in a cell refers to that same cell, either directly or indirectly. Such a cell will display a different value each time it is recalculated, which is usually not what you want!

For example, if cell B2 contains the formula (B2+1), each time it is recalculated, its value will increase by one. Circular references may be more complex. For example, cell B2 might contain the formula (C2+1) and C2 might contain the formula (B2+1).

If there are any circular references in your spreadsheet, you will see a small circle just below the current cell reference, like this:
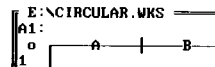
Filing

To use the Worksheet's filing facilities, press
F10 or **/** to display the main menu and select
`Files`:

```
┌── Files ──┐
│ New        │
│ Retrieve...│
│ Save as... │
│ Merge...   │
│ Load backup│
└───────────┘
```

- To start a new spreadsheet, select the `New` option.

- To work with a different spreadsheet, select the `Retrieve` option. (If you retrieve a file in .WK1 format, you may see the message `Some data cannot be loaded`. This means that the spreadsheet uses functions not supported by the Worksheet. A formula containing an unsupported function is converted to @ERR.)

- To save the spreadsheet, select the `Save as` option.

- To use the backup version of the current spreadsheet, select the `Load backup` option.

- To cancel all changes made since you last saved the file, load it again.

There are also two shortcuts, which you can use at any time:

- To save the spreadsheet with its current name and exit, press **Alt-X**.

- To save the spreadsheet with its current name and carry on, press **Alt-S**.

To add another spreadsheet to the current one:

- Position the cursor where you want to insert the spreadsheet. Note that the inserted sheet will overwrite cells from this point on, so you will usually want to create sufficient blank cells to accommodate it (see the WORKSHEET INSERT command).

- Select `Merge` from the Files menu and type or select the file to merge.

```
┌──────── Merge ────────┐
│ File:                  │
└───────────────────────┘
```

- If you have made any changes since you last saved the current spreadsheet, you will be asked if you want to save it first, since MERGE can overwrite cells.

Worksheet Commands

The Worksheet commands affect the entire spreadsheet. To use them, press **F10** or **/** to display the main menu and select `Worksheet`:

```
═══ Worksheet ═══
Recalc       On
Titles      Off
Insert...
Delete...
Window...
```
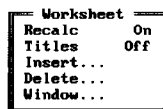
To turn recalculation on or off, select `Recalc` from the Worksheet menu. If set to `On` (the default), the spreadsheet is recalculated each time you insert, edit or delete a cell, or load the spreadsheet. This ensures that all results are up to date, but can cause significant delays on large or complex spreadsheets. If you are entering a large amount of data or formulae, turn recalculation off to reduce these delays. If you alter the spreadsheet a Σ character is displayed in the top left of the screen to warn you that the results may be incorrect.

To recalculate manually, press **F9**.

To define titles, move to the cell which is below and to the right of the title row(s) and column(s) and select `Titles` from the Worksheet menu to turn titles `On`. You can make the titles as wide as you like, but if the column width is too wide to display the titles and two more cells, the Worksheet will treat the titles like normal cells i.e. ignore the title setting.

To edit titles, use the Go To command to move to a cell in the titles area then you can move around and edit them normally.

To insert rows or columns:

• Move the cursor to where you want them to start (or end).

• Select `Insert` from the Worksheet menu.

• Select `Row` or `Column` and a box will be displayed around the cursor.

• Use the arrow keys to stretch the box to indicate the number of rows or columns to insert, then press **Enter**. Rows are inserted starting at the top row you select, while columns are inserted starting at the leftmost column that you select.

The Worksheet automatically adjusts all references to cells which have been moved by the insertion (even absolute references).

To delete a single cell: move to it and press **Del**.

To delete entire rows or columns:

• Move the cursor to the first column or column to delete.

- Select `Delete` from the Worksheet menu.

- Select `Row` or `Column` and a box will be displayed around the current cell.

- Use the arrow keys to stretch the box to surround the rows or columns to delete, then press **Enter**.

The Worksheet automatically adjusts all references to cells moved by the deletion (even absolute references). References to deleted cells will be converted to the error value @ERR, so that the cells are displayed as ERR.

To delete the entire spreadsheet, use the FILES NEW command. (See *Using Files* in Chapter 5.)

To mark a cell, so you can easily move back to it at any time, move the cursor to it, select `Window` from the Worksheet menu and select the `Mark` option.

To move to the marked cell, select `Flip` from the Window menu or press **Ctrl-F**. (If you have not set a mark, this will move you to A1.)

To return from the marked cell, select `Flip` again or press **Ctrl-U**.

Range Commands

The Range menu deals with ranges of cells.

To use it: move to one corner of the range to manipulate, press **F10** or **/** to display the main menu and select `Range`:

```
┌── Range ──┐
│ Copy      │
│ Erase     │
│ Width     │
│ Format... │
│ Align...  │
└───────────┘
```

Select the option and define the range, by using range painting.

To copy a range:

- Move the cursor to one corner of the range to copy (the anchor point).

- Select `Copy` from the Range menu and a box will be displayed around the current cell. (If you selected the wrong anchor point, press **Esc**, use the cursor keys to select the correct cell, and press "." to continue.)

- Use the cursor keys to stretch this box around the range, then press **Enter**. (This is called *painting a range*.)

- The cursor will move back to the anchor cell. Move to the top left corner of where you want the copy placed and press **Enter**.

Caution: *The copied information will overwrite any information in the destination area. (Use WORKSHEET INSERT to create a blank space.)*

Any relative cell references in the copied cells will be adjusted for their new location, as described previously (see *Cell References*).

To make multiple copies of a range:

• Paint the source range as described for a single copy, but select a single cell, row, or column.

• When you press **Enter**, move the cursor to one corner of the destination area and press ".".

• Stretch the box to cover the area to copy to and press **Enter**.

You can copy a single cell to any size range, a single row to a number of rows, and a single column to a number of columns.

To erase a range:

• Move the cursor to one corner of the range to erase (the anchor point).

• Select Erase from the Range menu and paint the cells to select as described for Copy, then press **Enter** to erase them.

If you change your mind, you can undelete the cells one by one (starting with the last) using the Undo key (**F4**). (See *Using Undelete* in Chapter 5.)

To change the width of selected columns:

• Move the cursor to one end of the range of columns to change.

• Select Width from the Range menu.

• Type the new width, which must be between 1 and 4 less than the screen width, and press **Enter**.

• Paint the columns (as described for Copy) and press **Enter**.

Changing column widths does not affect the information stored in the cells, but how it is displayed. If you make a numeric cell too narrow to display its value, it will display as asterisks. (To change the width of all columns, see *Worksheet Options*.)

To change the display format for a range:

• Move the cursor to one corner of the range.

• Select Format from the Range menu.

Select the required format from the
menu, or Reset to use the default
format:

```
┌── Format ──┐
│ General    │
│ Fixed      │
│ Scientific │
│ ,          │
│ Currency   │
│ Percent    │
│ Date...    │
│ Reset      │
└────────────┘
```
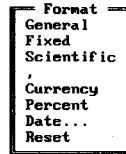
- If you select an option other than
  General, Date or Reset, you will be
  prompted for the number of decimal places. Type a number between 0
  and 12 and press **Enter**.

- If you select Date, you will be offered
  this menu:

  Select the required date or time format.

```
┌──── Date ─────┐
│ DD-MMM-YY     │
│ DD-MMM        │
│ MMM-YY        │
│ Long date     │
│ Short date    │
│ HH:MM:SS AM/PM│
│ HH:MM AM/PM   │
│ Long time     │
│ Short time    │
└───────────────┘
```
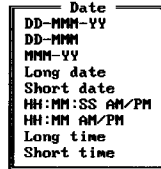
- Paint the cells (as described for Copy) and
  press **Enter**.

If you change a cell's format, a format indicator is displayed on the input
line when it is the current cell. The format indicators and example output
for the numeric formats, for a value of 3000 are as follows:

Display Type	Indicator	Example
Fixed	[F3]	3000.000 (at 3 dp)
Scientific	[S2]	3.00e+03 (at 2 dp)
Currency	[C2]	$3000.00 (at 2 dp)
,	[,3]	3,000.000 (triad separator and 3 dp)
General	[G]	3000
Percent	[P2]	300000.00% (fixed at 2 dp)

The Worksheet assumes that percentages are entered as decimals. For
example, 15% should be entered as 0.15. General format displays
numbers in decimal format, or scientific format if the cell is not wide
enough for all its significant digits. In comma format, negative numbers
are displayed in brackets e.g. -3000 will be shown as (3000).

To change the default format for the entire spreadsheet, or the characters
used for decimal points and currency, see *Worksheet Options*.

To change a range's alignment:

- Move the cursor to one corner of the range.

- Select `Align` from the Range menu and select the required alignment from the menu:

```
┌─ Text Align ─┐
│ Left         │
│ Center       │
│ Right        │
└──────────────┘
```
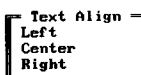
- Paint the cells (as described for Copy) and press **Enter**.

To change the default alignment for the entire spreadsheet, see *Worksheet Options*.

Go To Command

Use the Go To command to move directly to any cell in the spreadsheet, even cells within the titles area (defined using WORKSHEET TITLES).

To go to any cell in the spreadsheet:

- Press **F10** or **/** to display the main menu and select `Go to`.

```
┌──── Go To ────┐
│ Cell:         │
└───────────────┘
```
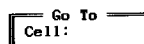
- Type the cell reference and press **Enter**.

You can jump back to the previous position by using **Ctrl-U**, or jump back and forth to a cell of interest by using the WINDOW MARK and WINDOW FLIP commands. (See *Worksheet Commands* in this chapter.)

Printing

To print the spreadsheet, press **F10** or **/** to display the main menu and select `Print`:

- To print the whole spreadsheet, leave `Range` set as displayed.

- To print a range, select `Range` and *paint* the range.
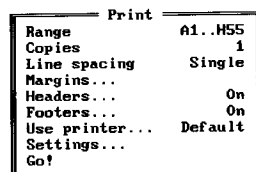
```
┌──────── Print ────────┐
│ Range         A1..H55 │
│ Copies              1 │
│ Line spacing   Single │
│ Margins...            │
│ Headers...         On │
│ Footers...         On │
│ Use printer...  Default│
│ Settings...           │
│ Go!                   │
└───────────────────────┘
```

- Check the number of copies, margins, etc. and change them if necessary. (For full details of these other print menu options, see *Using Printing* in Chapter 5.)

- Make sure the printer is connected and ready, then select `Go!` to start printing and you should see the message `Printing...` (If you see any other messages refer to Appendix E.)

If the spreadsheet is too wide to fit on one page, it will be printed in vertical slices, each slice fitting on the page widthways.

You will not be able to use the computer for anything else while printing. **To cancel printing**, press **Esc**.

Worksheet Options

To change the Worksheet options, press **F10** or **/** to display the main menu and select `Options`:

```
=== Options ===
Extension          WKS
Backup file        Off
Autoload            On
File lists...
Decimal point        .
Text align...     Left
Width of columns     9
Default format... G
Currency            $
```

To change the filename extension, that the Worksheet uses you if don't type one, select `Extension` from the Options menu and type the extension (up to 3 characters), then press **Enter**. Be consistent to avoid confusion in the future, and don't use extensions that have special meanings, such as TXT, COM, EXE, ADR, DRY, etc. For example, if you often use Lotus 1-2-3 release 2, you might use WK1.

To create backups, set `Backup file` to `Yes`. The Worksheet will create a backup of a file when you save a new version by changing the first character of its extension is set to $. (To use a backup, select `Load backup` from the Files menu.) Backups provide a quick and easy protection against mistakes, but use additional disk space. If disk space is limited, turn backups off or use them just for important files.

To load the same file next time (if still available), set `Autoload` to `On`. This is very convenient if you often work on the same file.

To change the order in which files are listed, use the `File lists` option; see *Using Files* in Chapter 5 for details.

To change the decimal point character, select `Decimal point`, which will toggle between a period (.) and a comma (,). When the decimal point character is set to comma (,), the separator is changed to semicolon (;) automatically.

To change the default text alignment used for all subsequent text input, select `Text align` and choose from `Center`, `Left` and `Right`.

To change the default column width used for all columns which have not been changed using the RANGE WIDTH command, select `Width of columns` and type a number between 1 and 72.

To change the default display format used for all cells which have not been changed using the RANGE FORMAT command, select `Default`

format and select the format from the menu, as described for the RANGE FORMAT command.

To change the symbol(s) used for currency, select Currency, edit the displayed text (up to three characters including spaces), then press **Enter**. Currency symbols are always placed before the amount.

To store the new options, press **Esc**.

The @Functions

The Worksheet provides a wide range of @functions, which you can use in formulae. When an @function is evaluated, it returns a numeric or text value to the position in the formula in which it appears.

Some functions, such as @PI and @TODAY just return a value which is then included as if it were entered as part of the formula. Other functions, such as @SIN(x) and @MOD(x,y), need *arguments*, which the function uses to generate a result. Arguments are enclosed in brackets. If a function requires more than one argument, they are separated by commas (or semicolons, if the decimal point character is a comma). Arguments may be literal values, expressions, cell or range references.

This section describes all the Worksheet @functions, in alphabetical order. You can type function names and cell ranges as upper or lower case letters - they are all converted to upper case on evaluation.

Note: If you are already familiar with the Lotus 1-2-3 @functions, you shouldn't need to read the remainder of this section. Simply note that the Worksheet does not support @CELL, @CELLPOINTER, @CLEAN, @DAVG, @DDB, @DCOUNT, @DMAX, @DMIN, @DSTD, @DSUM, @DVAR, @FIND, @ISAFF, @ISAPP, @REPLACE, @SLN, @SYD. If you load a spreadsheet containing any of these @functions, the Worksheet will display Some data cannot be loaded *and each such function will be converted to the function @ERR.*

Argument Descriptions

In the following function descriptions, the arguments either take the form of literal values or are described in the following form:

exp   A numeric expression or a reference to a cell which contains a numeric expression.

string   A string expression or a reference to a cell which contains a string expression.

cell	A single cell reference, such as B2.
int	An interest rate, as a decimal fraction per period. For example, enter 15% as 0.15.
range	A cell range such as A1..C3.
list	A list of items (exp and range), separated by commas if the decimal point is a period, or by periods if the decimal point is a comma.
day number	A numeric expression where the integer part is taken as the number of days since 30th December 1899. For example, day number 33604 is January 1st 1992.
time number	A numeric expression, where the fractional part is taken as a time (a fraction of a day). For example, 0.25 means 6:00am.

The @Functions

`@@(cell)` returns the contents of the cell pointed to by cell. For example, if the cell A2 contains "B3", @@(A2) returns the contents of B3.

`@ABS(exp)` returns the absolute value of exp. For example, the formula @ABS(-3.142) returns the value 3.142.

`@ACOS(exp)` returns the arc cosine of exp; the angle in radians whose cosine is exp.

`@ASIN(exp)` returns the arc sine of exp; the angle in radians whose sine is exp.

`@ATAN(exp)` returns the arc tangent of exp; the angle in radians whose tangent is exp.

`@ATAN2(exp1,exp2)` returns the arc tangent of exp1 divided by exp2; the angle in radians whose tangent is exp1 divided by exp2. The values of exp1 and exp2 are considered separately so that the returned value is in the correct quadrant.

`@AVG(list)` returns the arithmetic mean of the values in the list.

`@CHAR(code)` returns the character whose ASCII code is code. For example, @CHAR(65) returns "A". Returns ERR if code is not in the range 0..255. For a list of ASCII codes, see Appendix A.

`@CHOOSE(exp,list)` returns the item at position exp in list. The items in list are numbered 0 to n, so the first item is item 0. For example, @CHOOSE(A1,2,3,4) will return 3 if 1 is in cell A1.

@CODE(string) returns the ASCII code of the first character of the string, or ERR if char is null. For example, @CODE("ABC") returns 65. (For a list of ASCII codes, see Appendix A.)

@COLS(range) returns the number of columns in range.

@COS(exp) returns the cosine of the angle exp, which must be in radians.

@COUNT(list) returns the number of items in the list which evaluate to numeric values, formulae or literal values (text or numbers). Ranges may be included in list. The value 0 is regarded as non-blank.

@CTERM(int,fval,pval) returns the number of periods for an investment of pval to grow to fval, at a compound interest rate int.

@DATE(year,month,day) returns the number of days between 30 December 1899 and the given date i.e. the day number.

@DATEVALUE(string) returns the number of days between 30 December 1899 and the date given by string. For example, @DATEVALUE("1-1-93") returns 33970 (for countries where "1-1-93" is a valid date format, such as the USA).

@DAY(exp) returns the day of the month in which day number exp lies. For example, @DAY(32929) returns the value 25 because day number 32929 is 25th February 1990.

@ERR returns a value interpreted as ERROR. For example, using the @IF function, the formula @IF(B2=0,@ERR,F7) returns an error if the contents of cell B2 equals zero, and the contents of cell F7 otherwise. You may test for ERR by using the @ISERR function.

@EXACT(string1,string2) returns TRUE (1) if string1 is exactly the same as string2. Note that the case of the characters and leading and trailing spaces are all significant, aspects that are ignored if comparing strings using the = operator.

For example, @EXACT("Mr Jones","Mr Jones ") returns FALSE (0).

@EXP(exp) returns the value of the constant e raised to the power exp.

@FALSE returns the value 0 (false). For example, the formula @IF(B2>0,@TRUE,@FALSE) would return 1 if the contents of cell B2 is greater than zero and returns 0 otherwise.

@FV(pmnt,int,term) returns the future value of an annuity based on the interest rate (int) per period, the payment per period (pmnt) and the number of periods (term). The function is based on the formula:

```
@FV = payment * ((1+interest)^term)-1
                      interest
```

`@HLOOKUP(exp,range,idx)` performs a horizontal lookup on range. The first row of range must contain a number of comparison values, in increasing order with no duplicates. The function finds the last cell in this row whose value is less than or equal to exp, and returns the value of the cell which lies idx rows below it. Non-integral values of exp are truncated. If idx is zero the top value in the column, i.e. the index value, is returned. If exp is less than the first cell, or idx is negative or greater than or equal to the number of rows in range, ERR is returned.

`@HOUR(time)` returns the hours portion of the time (from the fractional part). For example, @HOUR(3000.2623) returns 6. @HOUR ignores the integer part (day number) of the time expression.

`@IF(exp,then,else)` returns the value of 'then' if the condition exp is 1 (TRUE), otherwise the value of 'else'. For example, the formula @IF(B2>0,@PI,0) would return the value of PI if the contents of cell B2 is greater than zero, zero if not.

`@INDEX(range,exp1,exp2)` returns the value of the cell in range which is exp1 across and exp2 down.

`@INT(exp)` returns the integral (whole number) part of exp. Numbers are truncated, so @INT(3.95) returns 3, while @INT(-3.95) returns -3.

`@IRR(exp,range)` returns an approximate Internal Rate of Return (IRR) from a sequence of cash flows. The IRR is the interest rate which would give a net present value (NPV) of zero on the given cash flows. The argument exp is your guess at the result; range is the cell range containing the positive (in) and negative (out) cash flows. Blank cells in range are taken as zero cash in or out.

`@ISERR(exp)` returns 1 (TRUE) if exp returns ERR, otherwise returns 0 (FALSE). For example, if cell F7 contains the formula @PI/0 (illegal division by zero) the formula @ISERR(F7) returns 1 (TRUE).

`@ISNA(cell)` returns 1 (TRUE) if cell returns @NA, otherwise 0 (FALSE). For example, if B2 contains the formula @NA, @ISNA(B2) will return 1.

`@ISNUMBER(cell)` returns 1 (TRUE) if cell is numeric (contains a numeric value or formula, or 0 (FALSE) if it is not (is blank or contains a string or label). For example, @ISNUMBER(A12) returns 1 if cell A12 contains a number.

`@ISSTRING(cell)` returns 1 (TRUE) if cell is string (contains a string constant, string expression or label), or 0 (FALSE) if it is not (is blank or contains a numeric value or formula). For example, @ISSTRING(A12) returns 1 if cell A12 contains a string.

@LEFT(string,exp) returns the first exp characters of string. If exp is larger than the string length, returns the whole string. If string is null or exp is less than 1, returns null. For example, @LEFT("Mr Jones",2) returns "Mr".

@LENGTH(string) returns the length of string, including any leading and trailing spaces or 0 if string is null. For example, @LENGTH("Mr Jones") returns 8.

@LN(exp) returns the base e logarithm of exp.

@LOG(exp) returns the base 10 logarithm of exp.

@LOWER(string) returns string converted to lowercase. This conversion only changes the capital letters A-Z to a-z; it does not affect accented characters. Returns null if string is null. For example, @LOWER("Mr Jones ") returns "mr jones ".

@MAX(list) returns the highest (most positive) value in list.

@MID(string,exp1,exp2) returns exp2 characters starting from character exp1 in string (the first character is character 0). If there are no exp2 characters to return, it returns the remaining characters without error. For example, @MID("Mr Jones",3,100) returns "Jones". Returns a null string if string is null or exp1 is beyond the end of string. If exp2 is less than 1 it is treated as 0.

@MIN(list) returns the lowest (most negative) value in list.

@MINUTE(time) returns the minutes portion of the time (from the fractional part). For example, @MINUTE(3000.2623) returns 17. Note that the integer portion of the time expression (the day number) is ignored.

@MOD(exp1,exp2) returns the remainder of exp1 divided by exp2.

@MONTH(exp) returns the month in which day number exp lies. For example, @MONTH(32929) returns 2 because day number 32929 is 25 February 1990.

@N(range) returns the numeric value of the top left cell of range, or 0 if the cell contents are not numeric.

@NA returns a value representing Not Available, which appears right aligned in the cell as NA. For example, @IF(B2>0,@NA,B7) returns NA if the contents of cell B2 is greater than zero and returns the contents of B7 otherwise.

@NOW returns a number giving the current date (integer portion) and time (fractional portion). This value is updated when the function is re-evaluated or the spreadsheet is loaded. For example, if the date is 1-1-91 and the time is 12:35, @NOW returns 33239.524305.

The @Functions **13-19**

`@NPV(int,range)` returns the Net Present Value (NPV) of a series of discounted cash flows stored in range, using the interest rate int (per period). Cash flows may be positive (incoming) or negative (outgoing). Blank cells in range are permissible and are interpreted as zero cash in and zero cash out.

`@PI` returns the constant PI to 11 decimal places, i.e. 3.14159265359.

`@PMT(prin,int,term)` returns the payment you must make per period to repay a principal (loan) of prin, with a periodic interest rate of int, within term periods. For example, to calculate the monthly payments required to pay off a loan of 45,000 in 25 years, at a monthly interest rate of 0.835%, type @PMT(45000,0.00835,25*12).

`@PROPER(string)` returns string with the first character of each word converted to capitals and the other characters converted to small characters. This only affects unaccented characters. (The start of a word is defined as the first letter after any number of spaces.) Returns a null string if string is null. For example, @PROPER("dept 2(B)") returns "Dept 2(B)".

`@PV(pmnt,int,term)` returns the present value of an annuity, consisting of a payment per period of pmnt over term periods, attracting a periodic interest rate of int.

`@RAND` returns a pseudo-random floating point number in the range 0.0 (inclusive) to 1.0 (exclusive). Note that a different value is returned each time the spreadsheet is recalculated.

`@RATE(fval,pval,term)` returns the compound interest rate required for the investment fval to grow to pval in term periods.

`@REPEAT(string,exp)` returns a string consisting of exp repeats of string. Returns a null string if string is null or exp is less than 1, or the first 240 characters if the result is more than 240 characters. For example @REPEAT("+——",5) returns "+——+——+——+——+——".

`@RIGHT(string,exp)` returns the last exp characters of string. If exp is larger than the string length, it returns the whole string. Returns a null string if exp is less than 1 or string is null. For example, @RIGHT("Account: 12341234",8) returns "12341234".

`@ROUND(exp1,exp2)` returns exp1 rounded to exp2 decimal places. If exp2 is negative, returns exp1 rounded at exp2 places to the left of the decimal point. For example:

Formula   **Returns**
@ROUND(12345.67899,-3)   12000
@ROUND(12345.67899,0)   12346
@ROUND(12345.67899,1)   12345.7
@ROUND(12345.67899,5)   12345.67899

@ROWS(range) returns the number of rows in range.

@S(range) returns the string value of the top left cell of range, or "" if it is not a text cell.

@SECOND(exp) returns the seconds portion of the time (from the fractional part), ignoring the integer (days) portion of exp. For example, @SECOND(3000.2623) returns 43.

@SIN(exp) returns the sine of the angle exp, which must be in radians.

@SQRT(exp) returns the square root of exp or ERR if exp is negative.

@STD(list) returns the standard deviation of the values in list. Blank cells in list are ignored. Returns ERR if all cells in list are blank.

@STRING(exp1,exp2) returns a string representation of exp1, rounded to exp2 decimal places, padding with trailing zeros if needed. For example, @STRING(123.48,1) returns "123.5". Returns ERR if exp2 is negative.

@SUM(list) returns the sum of the values in list.

@TAN(exp) returns the tangent of the angle exp, which must be in radians.

@TERM(pmnt,int,fval) returns the number of periods for regular payments of pmnt to grow to fval, at a compound interest rate int.

@TIME(hour,min,sec) returns the time number (decimal fraction) equivalent to the specified hours, minutes and seconds. For example, @TIME(10,20,2) returns 0.4305787. Returns ERR if hour is less than 0 or more than 23, min is less than 0 or more than 59, or sec is less than 0 or more than 59.

@TIMEVALUE(string) returns the time number (decimal fraction) equivalent to the time given by string. For example, @TIMEVALUE("10:20:02") returns 0.4305787.

@TODAY returns today's day number. For example, on 25th December 1991, @TODAY returns 33597.

@TRIM(string) returns string with any leading or trailing spaces removed. For example, @TRIM(" Results ") returns "Results".

@TRUE returns the value 1 (TRUE). Similarly, the function @FALSE returns the value 0. For example, the formula @IF(B2>0,@TRUE,@FALSE) returns 1 if the contents of cell B2 is greater than zero and 0 otherwise.

@UPPER(string) returns string with all lowercase (small) letters converted to uppercase (capitals). This only affects the capital letters A-Z, not accented characters. For example, @UPPER("dept 2(b)") returns "DEPT 2(B)". Returns null if string is null.

@VALUE(string) returns a numeric representation of string, which may contain only numeric characters, or 0 if string is null. Returns ERR if string contains any non-numeric characters or spaces. For example, @VALUE("123.48") returns 123.48.

@VAR(list) returns the statistical variance of the items in list. Returns ERR if all cells in list are blank.

@VLOOKUP(exp,range,idx) Performs a vertical lookup on the cells in range. The first column of range must contain a number of comparison values, in ascending order with no duplicates. The function truncates exp to integer and then finds the last cell in the first column of range whose value is less than or equal to exp. It then returns the value of the cell which lies idx rows to the right. Returns ERR if exp is less than the value in the first cell in range, or idx is less than 1 or outside the range.

@YEAR(exp) returns the year in which the day number exp lies. For example, @YEAR(32929) returns 90 because day number 32929 is 25th February 1990.

Summary

Keys

Function keys:

F1	Help
F2	Edit
F3	Zoom
F4	Undo
F5	Mark
F6	Cut
Shift-F6	Cut and append
F7	Copy
Shift-F7	Copy and append
F8	Paste
F9	Recalculate
F10	Main menu

Control keys:

Ctrl-A	Move to cell A1 (pointing)
Ctrl-B	Delete to beginning of line (input)
Ctrl-E	Delete to end of line (input)
Ctrl-F	Window flip (go to mark)
Ctrl-L	Delete line (input)
Ctrl-Q	Delete to previous operator (input)
Ctrl-U	Move to previous position
Ctrl-W	Delete to next operator (input)
Ctrl-Z	Move to end of spreadsheet (pointing)

Movement keys:

Left,Right	Move a character (input) or cell (pointing) at a time
Up,Down	Move a cell at a time
Ctrl-Left	Move to previous operator (input) or scroll left (pointing)
Ctrl-Right	Move to next operator (input) or scroll right (pointing)
Home	Move to beginning of line (input) or row (pointing)
End	Move to end of line (input)
End Arrow key	If current cell is blank, move to first non-blank cell in arrow direction (pointing)
	If current cell is non-blank, move to cell before first blank cell in arrow direction (pointing)
End Home	Move to last (bottom right) used cell
PgUp, PgDn	Move up/down about two thirds of a screenful at a time
Ctrl-PgUp	Move to start of column
Ctrl-PgUp	Move to end of column

Delete keys:

Backspace	Delete character to left of cursor (input)
Ctrl-Backspace	Delete to previous operator (input)
Del	Delete character at cursor (input) or cell (pointing)

Other keys:

Ins	Toggle between Insert and Overtype modes
Enter	End line/menu selection
Esc	Exit menu/Worksheet
Tab	Move right a screen at a time
Shift-Tab	Move left a screen at a time

Menus

The Main menu:

```
╔═══ Worksheet ═══╗
║ Files...        ║   Filing
║ Worksheet...    ║   Worksheet menu
║ Range...        ║   Range menu
║ Go to           ║   Go to cell
║ Print...        ║   Printing/print setup
║ Options...      ║   Worksheet options
╚═════════════════╝
```

The Files menu:

```
╔══════ Files ══════╗
║ New               ║   Start new spreadsheet
║ Retrieve...       ║   Load file from disk
║ Save as...        ║   Save spreadsheet to disk
║ Merge...          ║   Insert spreadsheet from disk
║ Load backup       ║   Use previously saved version
╚═══════════════════╝
```

The Worksheet menu:

```
╔═══ Worksheet ═══╗
║ Recalc      On  ║   Automatic recalculation
║ Titles      Off ║   Define title rows/columns
║ Insert...       ║   Insert rows or columns
║ Delete...       ║   Delete rows or columns
║ Window...       ║   Define second data window
╚═════════════════╝
```

The Range menu:

```
┌══ Range ══┐
│ Copy      │   Copy cells
│ Erase     │   Blank cells
│ Width     │   Change range cell width
│ Format... │   Change range cell format
│ Align...  │   Change range text alignment
└───────────┘
```

The Print menu:

```
┌════════ Print ════════┐
│ Range          A1..H11 │   Select area to print
│ Copies               1 │   Select copies to print
│ Line spacing    Single │   Set line spacing
│ Margins...             │   Set page margins
│ Headers...          On │   Define page header
│ Footers...          On │   Define page footer
│ Use printer... Default │   Select printer configuration
│ Settings...            │   Edit printer configuration
│ Go!                    │
└────────────────────────┘
```

The Options menu:

```
┌═════ Options ═════┐
│ Extension     WKS  │   Change default extension
│ Backup file   Off  │   Toggle backups
│ Autoload      On   │   Toggle autoload
│ File lists...      │   Alter sorting of file lists
│ Decimal point   .  │   Decimal point character
│ Text align... Left │   Global text alignment
│ Width of columns 9 │   Global column width
│ Default format... G │  Global cell format
│ Currency        $  │   Currency symbol(s)
└────────────────────┘
```

14
Chapter

Options

Introduction

The performance of your Sharp computer can be enhanced with the addition of hardware options available from your Sharp dealer. To use most options you simply turn on the computer. However, to use an option which requires a device driver, you must install the device driver in CONFIG.SYS (see Appendix G) and then reboot the computer.

⚠️ *Caution: Before connecting or disconnecting a hardware option or cable, turn the computer off, or you may damage both the computer and the option.*

✓ *Note: Some options may not be available in some countries or may be included as standard equipment. For details, contact your Sharp dealer.*

These special accessories must be used with this computer.

The AC Adaptor

The optional AC adaptor (part number CE-301V) allows you to operate the computer from an AC outlet, to save battery power.

⚠️ *Caution: Use only the correct AC adaptor for your computer. Use of another adaptor could damage it. Be sure to plug the AC adaptor into a grounded outlet or use a grounded plug adaptor.*

Follow these steps to connect the AC adaptor for running on AC power.

1. Plug the male end of the AC adaptor into a grounded outlet. Use a grounded plug adaptor if necessary.

2. Plug the cord from the AC adaptor into the jack on the rear panel of the computer.
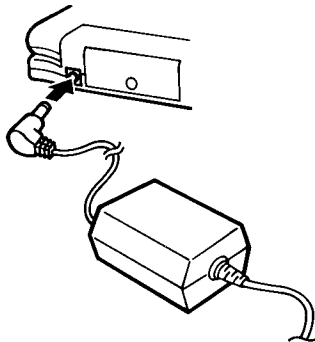
To check that the AC adaptor is working correctly, run the Desk Clock (see Chapter 6). If it displays seconds, the adaptor is providing power.

Note: To disconnect completely, the AC adaptor must be pulled from the power outlet. The wall outlet used for the AC adaptor must be near the equipment and easily accessible.

The Serial Conversion Cable

Connecting the CE-302CB serial conversion cable enables you to connect various I/O devices such as a serial printer, mouse, or external modem for data communications to the serial (RS-232C) port. The cable connected to this conversion cable must terminate in a 9-pin female connector. See Appendix C for connector pin assignments.

To connect the serial conversion cable:

1. Turn the computer off by pressing **Fn-Esc**.

2. Open the serial port cover (on the left side of the computer), by inserting a fingernail into the groove at its top and levering it downwards.
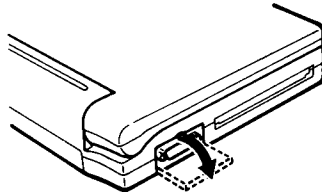
3. Squeeze the lock levers on each side of the 10-pin connector and press the connector into the serial socket, noting the correct orientation.
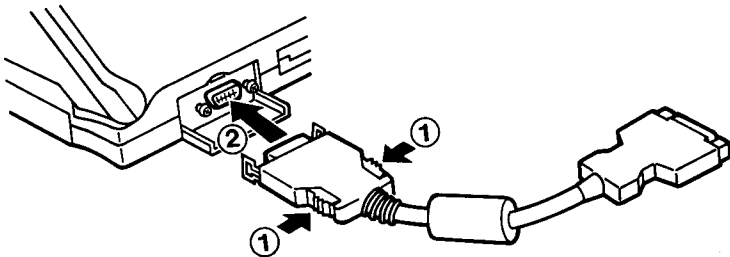
To disconnect the serial conversion cable:

1. Turn the computer off by pressing **Fn-Esc**.

2. Squeeze the locking levers on each side of the 10-pin connector and pull it from the socket.

3. Close the serial port cover.

The Parallel Conversion Cable

Connecting the CE-301CB parallel conversion cable enables you to connect a printer or other device which uses a standard Centronics parallel interface to the computer. The cable connected to this conversion cable must terminate in a 25-pin male connector. See Appendix C for connector pin assignments.

To connect the cable:

1. Turn the computer off by pressing **Fn-Esc**.

2. Open the parallel port cover (on the right side of the computer), by inserting a fingernail into the groove at its top and levering it downwards.
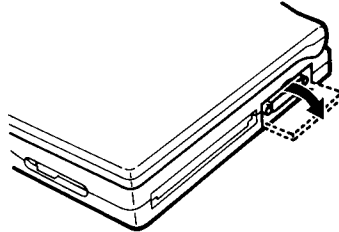
3. Squeeze the lock levers on each side of the 20-pin connector on the parallel conversion cable and insert it into the port, noting the correct orientation.
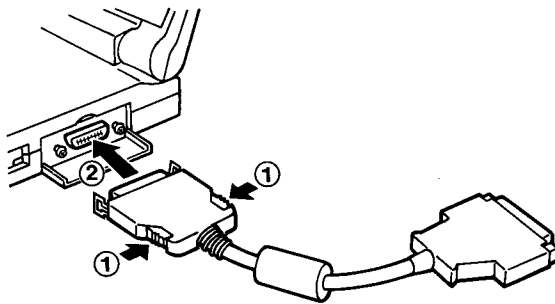
To disconnect the cable:

1. Turn the computer off by pressing **Fn-Esc**.

2. Squeeze the locking levers on each side of the 20-pin connector and pull it from the socket.

3. Close the parallel printer port cover.

The LapLink Cable

To use the LapLink program supplied in your computer, you will need the optional LapLink Cable CE-303CB to transfer files to another computer. You will also need the CE-302CB serial (RS-232C) conversion cable to connect the LapLink cable to your computer. For details on LapLink, see Chapter 8 (*LapLink Utility*).

To connect the LapLink cable:

1. Turn the computer off by pressing **Fn-Esc**.

2. Open the serial port cover (on the left side of the computer), by inserting a fingernail into the groove at its top and levering it downwards.

3. Connect the optional Serial conversion cable to your computer as described previously.

4. Connect the single 9-pin female connector end of the LapLink cable to the Serial conversion cable.
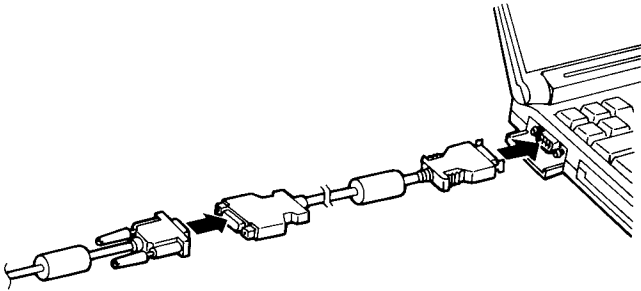
5. Connect either the 9-pin or the 25-pin connector on the other end of the LapLink cable to the 9-pin or 25-pin serial port of the remote computer.

The Floppy Disk Drive Unit

The CE-301F 3.5" floppy disk drive (FDD) unit can be connected to the expansion bus connector on the rear of the computer.

To connect the FDD Unit:

1. Install the batteries in the FDD unit by following the manual provided with the option.

2. Turn the computer off by pressing **Fn-Esc**.

3. Remove the cover from the expansion port (on the rear of the computer), by inserting a fingernail into the groove at its top and levering it downwards.
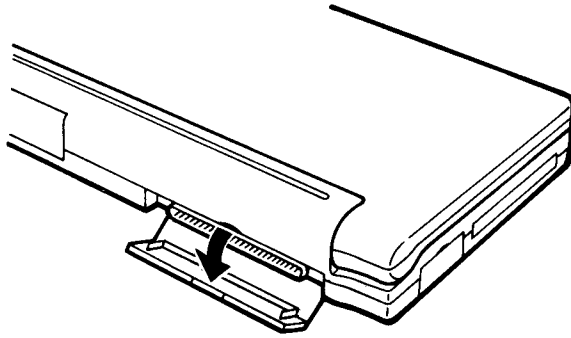
Note: While the expansion bus connector is in use, store the connector cover in a safe place.

4. Connect the 25-pin male connector of the cable provided with the FDD unit to the rear of the FDD unit, and the other end of the cable to the expansion bus connector of the computer.
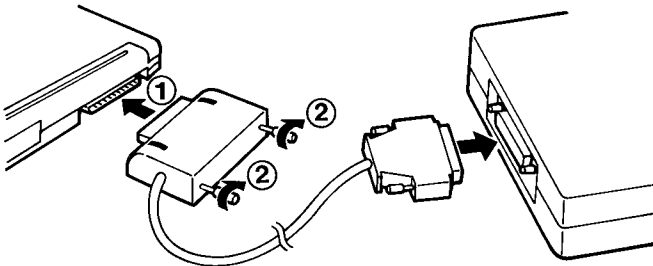
5. Fasten the screws on each side of the expansion bus connector.

6. Turn the computer on and reboot by pressing **Ctrl-Alt-Del**. The computer must reboot to recognize the FDD unit.

While connected, the optional FDD unit is assigned as drive F.

To disconnect the FDD Unit:

1. Turn the computer off.

2. Disconnect the FDD cable from the expansion port.

3. Replace the expansion port cover.

4. Turn the computer on and reboot by pressing **Ctrl-Alt-Del**. The computer must reboot to recognize that the FDD unit is disconnected.

Diskettes

A diskette is a magnetic device that stores information created on a computer. Once information is stored on a diskette, it can be re-used whenever necessary or replaced when no longer needed.

Diskette Format

In order for information to be stored on a diskette, the operating system must first prepare --format-- the diskette. This process enables the computer to locate stored information easily.

To format the diskette, use the FORMAT command at the MS-DOS prompt. For details, refer to the FORMAT command in Chapter 7.

During formatting, the diskette is divided into circular tracks, similar to those on a record.
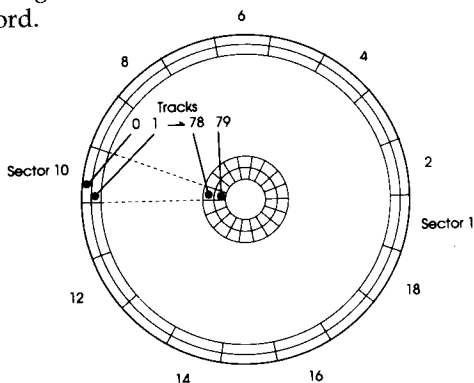
Each track is further divided into sectors that identify information stored within the track. The track number and sector number act like addresses

to the computer, making access to information an automatic and rapid process.

During operation, the diskette rotates inside its plastic casing. As it rotates, the read/write head of the drive moves from one track to another, locating information or finding space available for new information. You don't need to know where information is stored on a diskette. MS-DOS manages that function automatically.

Taking Care of Diskettes

To safeguard information stored on a diskette, it is important that you handle diskettes with care.
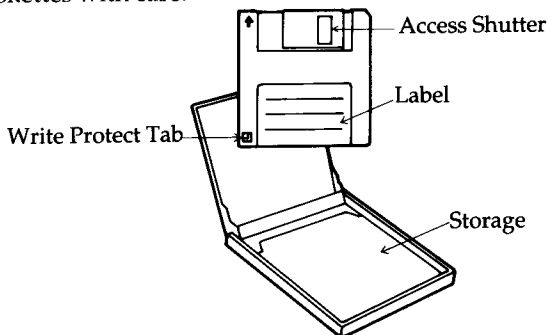
Storage Although 3.5" diskettes are housed in a durable plastic casing, it is a good idea to keep diskettes which you are not using in a disk box to protect them against damage or loss. A variety of plastic disk boxes are available at most computer stores.

Label When you purchase blank diskettes, labels are usually supplied with the diskettes. Get into the habit of always labeling your diskettes with the names of the files or programs and the date on which you made the copy. This is particularly important when making backup diskettes.

Access Shutter The access shutter allows the disk head to read from and write to the diskette. The shutter opens automatically when you insert the diskette in the drive. Do not open it at other times, as this will expose the diskette surface to dust.

Write Protect Tab The write protect tab is used to prevent inadvertant changes to important files. To write protect a diskette, slide the write protect tab to the open position; to allow the computer to write on the diskette, slide the tab to the closed position.

Follow these guidelines when handling diskettes:

- When inserting a diskette into the disk drive, be sure it clicks into place. Using the computer with an improperly inserted diskette may damage the drive and diskette.

- Never open the access shutter. This will expose the surface of the diskette to dust.

- Keep diskettes away from strong magnetic fields, such as those generated by audio speaker systems and telephone handsets.

- Never remove a diskette from the drive while the computer is reading from or writing to the diskette.

- Never expose diskettes to moisture, excessive heat or direct sunlight.

- If a diskette appears to be damaged, make a copy of it if you can, and discard the damaged diskette immediately.

Inserting a Diskette into the Drive

1. Insert the diskette into the drive shutter end first, with the label side facing up.

2. Gently push the diskette into the slot until it clicks into place.

To remove a diskette, push the eject button until the diskette pops out.

⚠️ *Caution: Never attempt to remove a diskette from the disk drive when the floppy disk drive indicator on the indicator panel is lit. This can damage both the contents of the diskette and the drive.*

IC Memory Cards

IC memory cards are available in a wide range of capacities. You can use many kinds of IC memory cards which are designed to conform with PCMCIA release 1.0.

⚠️ *Caution: Do not use IC memory cards which are more than 3.3mm thick, or which do not comply with PCMCIA release 1.0 specifications.*

It is recommended to install a protection card when an IC memory card is not installed. This will protect the IC card drive from dust.

Using IC Memory Cards

IC memory cards are used just like diskettes, but are more compact and robust. They have a write-protect switch, rather like diskettes. To prevent writing to a card, set the switch to the side marked "WP".

To use an IC memory card, insert it in one of the drives:

1. Set the appropriate drive access lock to REL.

2. Slide the eject slider and remove the protection card.

3. Insert the card into the drive slot, connector edge first, and press it in until it is flush with the casing:
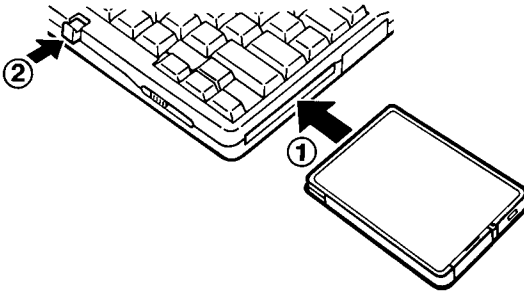
4. Set the drive access lock to LOCK.

You can now use it just like any other disk. During access the appropriate drive indicator will flash.

To remove a card:

1. Set the appropriate drive access lock to REL.

2. Slide the appropriate eject slider until the card protrudes from the drive.

3. Pull the card gently out of the drive.

4. Insert the protection card into the drive and set the appropriate access lock to LOCK.

⚠ *Caution: If you are storing important data on cards, make regular backups to a desktop computer or to floppy disks (using the optional FDD unit).*

Card Batteries

Each IC memory card has its own internal battery. To prevent the possibility of unexpected data loss, replace the battery within the battery life, following the instructions supplied with the card.

Always change the IC memory card battery while the card is installed in the computer. Otherwise, the contents of the card will be lost. Note that the computer must be switched on, and the drive access lock set to LOCK.

> *Note: Before changing the card battery, set the Auto Power Off option in the system setup to 0.*

Formatting IC Memory Cards

Before you can use a blank IC memory card, you must format it by using the FORMAT command (see Chapter 7).

Looking after IC Memory Cards

Keep the card drives and cards clean and dry. Keep cards away from magnetic fields and direct heat, and do not bend them. Do not touch the contacts as this can cause corrosion (if you do, clean them with a clean dry cloth). If you are not using a card, remove it from the drive. For added protection, keep cards in the supplied rigid cases.

Each IC memory card is supplied with its own operating instructions. Take care to read these and follow any additional handling instructions at all times to avoid damage.

Other Options

For full details of other options which may be available, check with your Sharp dealer.

Appendices

Appendix
A Character Sets

Default (USA) Character Set

This table lists the characters displayed for ASCII codes 0 to 255, with the default (USA) character set.

DECIMAL VALUE	→	0	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240
↓	HEXA DECIMAL VALUE	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	BLANK (SPACE)	►	BLANK (SPACE)	θ	@	P	'	p	Ç	É	á	▦	◰	⌐	α	≡
1	1	☺	◄	!	1	A	Q	a	q	ü	æ	í	▒	┬	β	±
2	2	☻	↕	"	2	B	R	b	r	é	Æ	ó	▓	┴	Γ	≥
3	3	♥	‼	#	3	C	S	c	s	â	ô	ú	│	├	┘	π	≤
4	4	♦	¶	$	4	D	T	d	t	ä	ö	ñ	┤	─	┘	Σ	∫
5	5	♣	§	%	5	E	U	e	u	à	ò	Ñ	╡	┼	┌	σ	
6	6	♠	▬	&	6	F	V	f	v	å	û	ª	╢	╞	┌	μ	÷
7	7	•	↨	'	7	G	W	g	w	ç	ù	º	╖	╟	┐	τ	≈
8	8	◘	↑	(	8	H	X	h	x	ê	ÿ	¿	╕	╚	┘	Φ	°
9	9	○	↓	)	9	I	Y	i	y	ë	Ö	⌐	╣	╔	┌	Θ	•
10	A	◙	→	*	:	J	Z	j	z	è	Ü	¬	║	╩	┌	Ω	·
11	B	♂	←	+	;	K	[	k	{	ï	¢	½	╗	╦	■	δ	√
12	C	♀	∟	,	<	L	\	l	¦	î	£	¼	╝	╠	■	∞	n
13	D	♪	↔	—	=	M	]	m	}	ì	¥	¡	╜	═	■	φ	²
14	E	♫	▲	.	>	N	^	n	~	Ä	₧	«	╛	╬	■	∈	∎
15	F	☼	▼	/	?	O	_	o	△	Å	ƒ	»	┐	╧	∩	BLANK (FF)

Scandinavian Character Set

This table lists the characters displayed for ASCII codes 0 to 255, with the Scandinavian character set. Note that only two characters (155 and 157) are different from the default character set.

DECIMAL VALUE	➡	0	16	32	48	64	80	96	112	128	144	160	176	192	208	224	240
HEXA DECIMAL VALUE		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	0	BLANK	►	BLANK	0	@	P	`	p	Ç	É	á	▦	└	⊥	α	≡
1	1	☺	◄	!	1	A	Q	a	q	ü	æ	í	▓	┬		β	±
2	2	●	↕	"	2	B	R	b	r	é	Æ	ó	▓		Γ	≥
3	3	♥	‼	#	3	C	S	c	s	â	ô	ú		└	π	≤
4	4	♦	¶	$	4	D	T	d	t	ä	ö	ñ		┘	Σ	∫
5	5	♣	§	%	5	E	U	e	u	à	ò	Ñ	┤	┬	┌	σ	
6	6	♠	▬	&	6	F	V	f	v	å	û	õ	┤	┴	┌	μ	÷
7	7	•	↨	'	7	G	W	g	w	ç	ù	Õ	┐	┴		τ	≈
8	8	◘	↑	(	8	H	X	h	x	ê	ÿ	¿	┐		Φ	°
9	9	○	↓	)	9	I	Y	i	y	ë	Ö	ã	┤	┌	Θ	•
10	A	◙	→	*	:	J	Z	j	z	è	Ü	Ã	┤	├	Ω	•
11	B	♂	←	+	;	K	[	k	{	ï	ø	ℓ		■	δ	√
12	C	♀	∟	,	<	L	\	l	¦	î	£	ʼn		∞	ⁿ
13	D	♪	↔	—	=	M	]	m	}	ì	Ø	ı	┘	┤	φ	²
14	E	♫	▲	.	>	N	^	n	~	Ä	Ŀ	³	┘	╫	∈	■
15	F	☼	▼	/	?	O	_	o	△	Å	Ŀ·	¤	┐		∩	BLANK

Appendix

B Keyboard Layouts

The following diagrams show the keyboard layouts for the **Fn** and **NumLk** keys. These combinations make all 101/102 keys on the IBM Enhanced Keyboard layout available.

U.S. English Keyboard, Standard
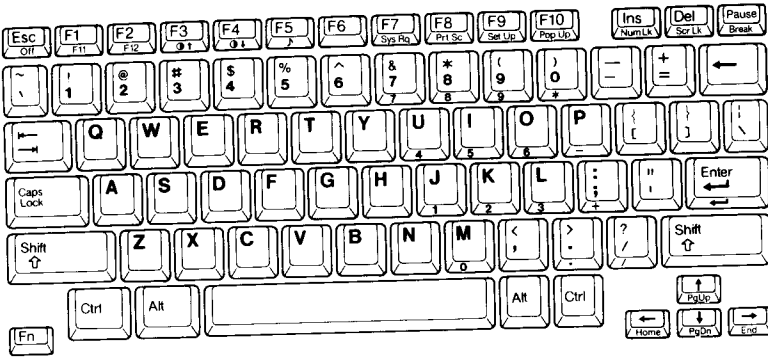
U.S. English Keyboard, Fn Key Held Down
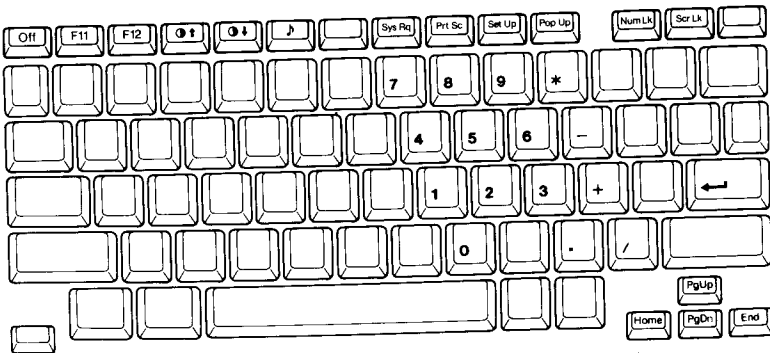
U.S. English Keyboard, NumLock Mode
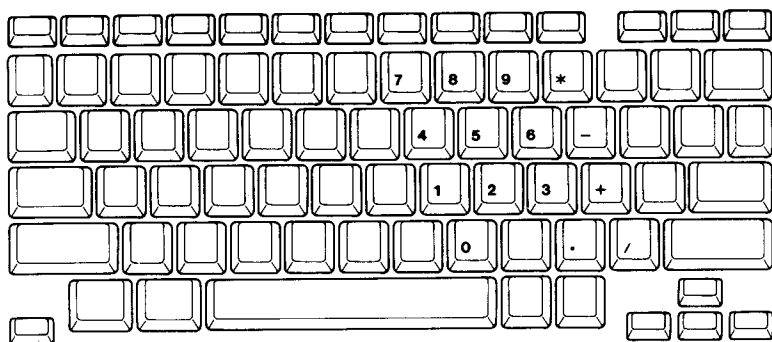
U.K. English Keyboard
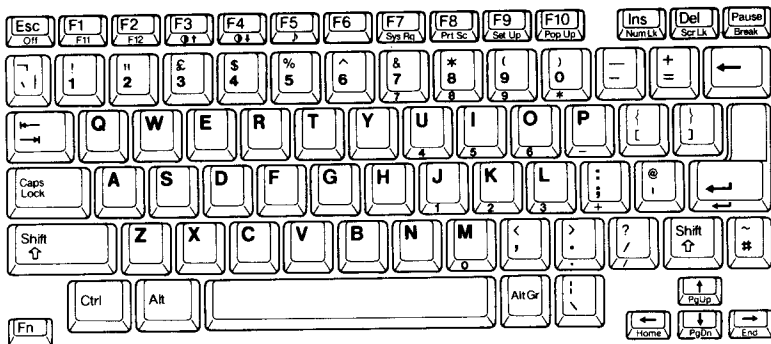
German Keyboard
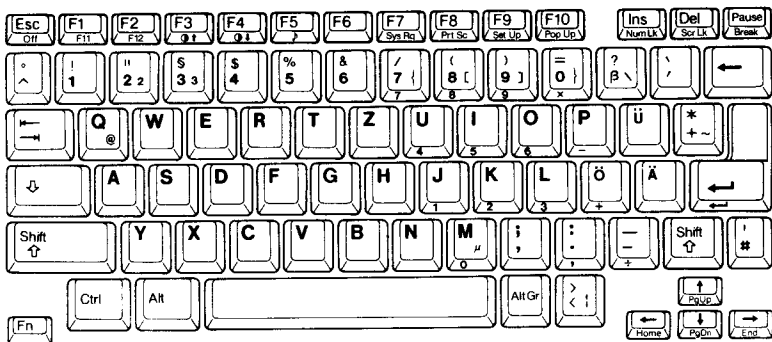
French Keyboard
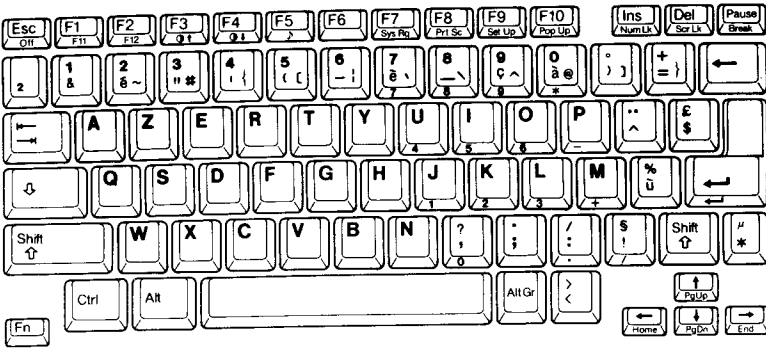
Italian Keyboard
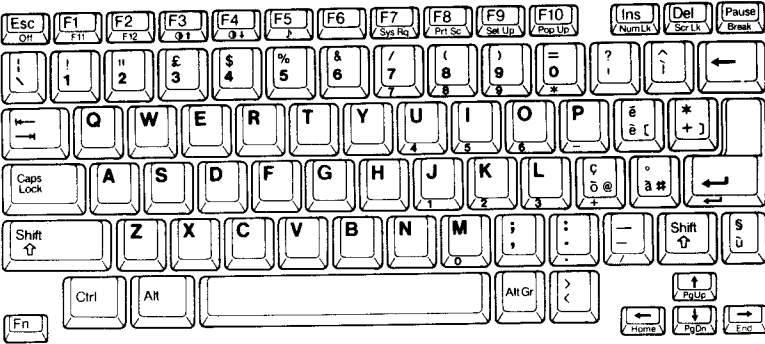
Swiss Keyboard
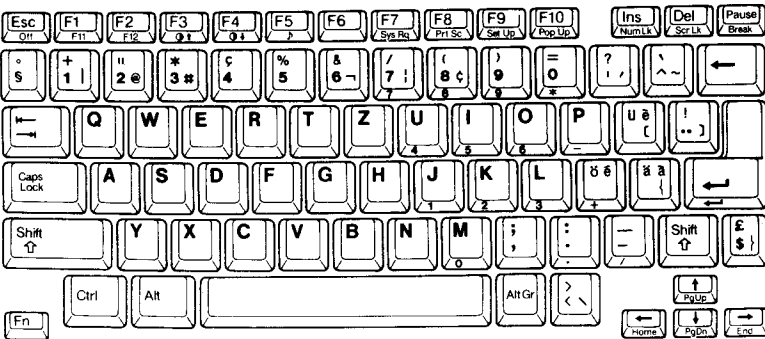
Swedish/Finnish Keyboard
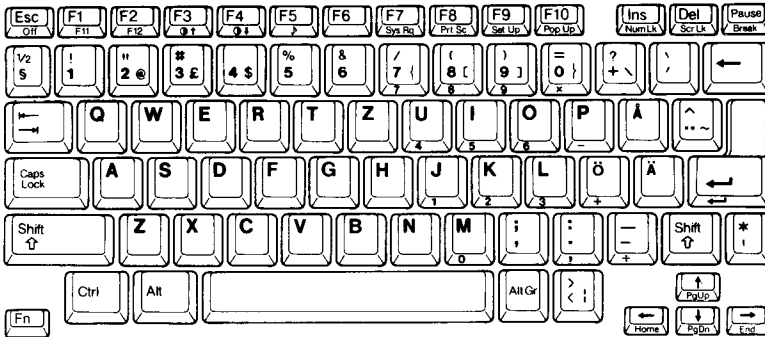
Norwegian Keyboard
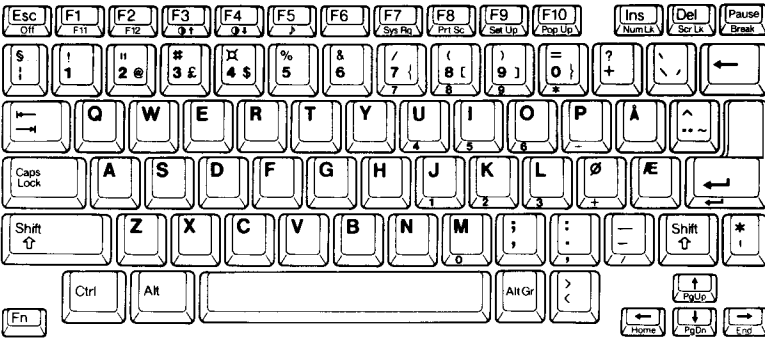
Spanish Keyboard
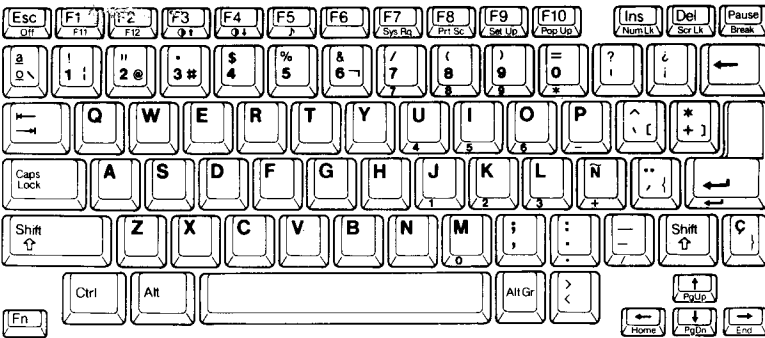
Portuguese Keyboard
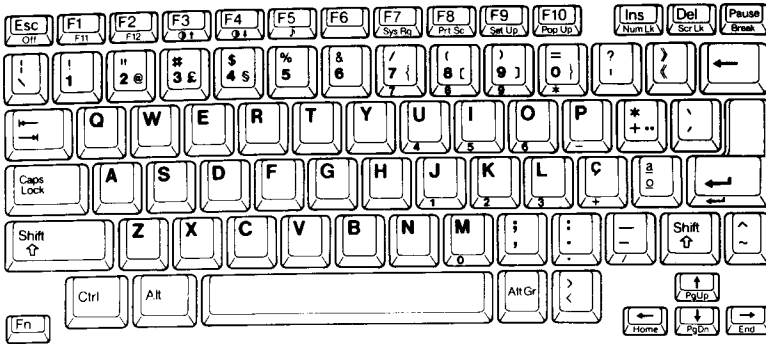
Danish Keyboard

IBM Enhanced Keyboard

12 Function Keys

Blank (5) Key

Typewriter Keys   Cursor Control   Numeric
                          and   Keypad
                      Editing Keypad
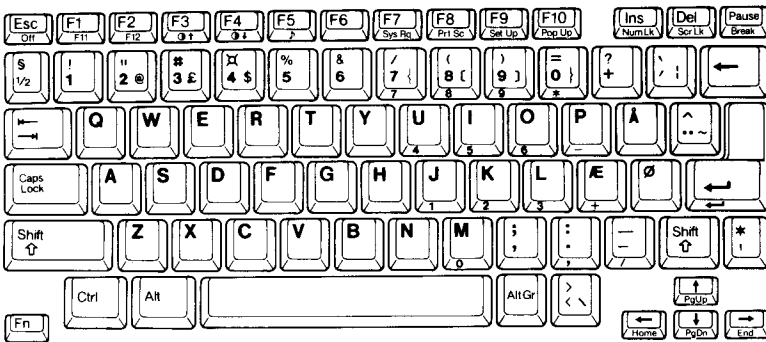
Keyboard Layouts **B-5**
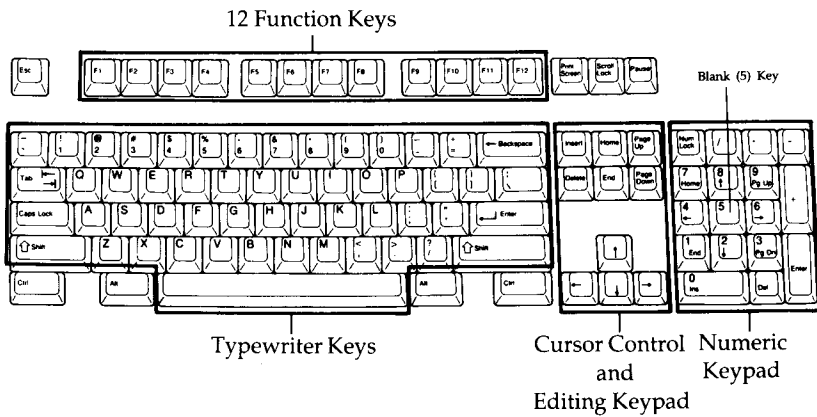
Using European Keyboard Layouts

Keys with 3 Characters

Position of character on keytop	Key combination to obtain that character
Bottom Left	Normal unshifted key
Top Left	Press **Shift** + desired key
Bottom Right	Press **Alt Gr** + desired key
Front Face	Press **Fn** + desired key

Swiss Keyboard

Some keys on the Swiss keyboard have characters at the top left and the top right of the keytop. These characters are accessed in different ways for the Swiss German and Swiss French keyboard setups.

When the Swiss German keyboard is selected during installation, press the key on its own to output the character at the top left of the keytop, and press the key together with **Shift** to output the character at the top right of the keytop.

When the Swiss French keyboard is selected, press the key on its own to output the character at the top right of the keytop, and press the key together with **Shift** to output the character at the top left of the keytop.

Changing Keyboards

You can change from the installed country keyboard to the US (default) keyboard at any time by holding down **Ctrl** + **Alt** and pressing **F1**. Change back to the installed keyboard by pressing **Ctrl** + **Alt** + **F2**.

Appendix
C Connector Pin
Assignments

RS-232C Connector

The Serial Port pinouts look like this:
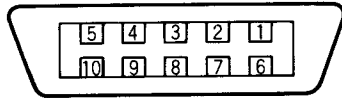
Or, with the optional Serial Conversion Cable connected:
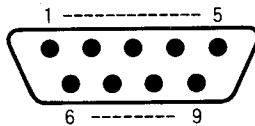
Pin	Signal	Direction
1	Carrier Detect (CD)	Input
2	Receive Data (RXD)	Input
3	Transmit Data (TXD)	Output
4	Data Terminal Ready (DTR)	Output
5	Signal Ground (SG)	
6	Data Set Ready (DSR)	Input
7	Request To Send (RTS)	Output
8	Clear To Send (CTS)	Input
9	Ringing Indicator (RI)	Input
10	Power Monitor (MONI)	Output

Note that pin 10 is not provided via the Serial Conversion Cable.

Parallel Connector

The Parallel Port pinouts look like this:
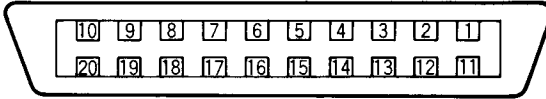
Or, with the optional Printer Conversion Cable connected:
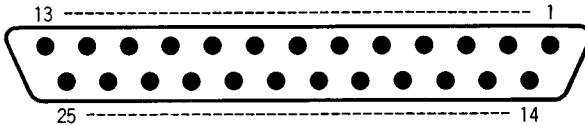
Pin	Signal	Direction
1	Strobe (STROBE)	Output
2	Data 0 (DATA0)	Output
3	Data 1 (DATA1)	Output
4	Data 2 (DATA2)	Output
5	Data 3 (DATA3)	Output
6	Data 4 (DATA4)	Output
7	Data 5 (DATA5)	Output
8	Data 6 (DATA6)	Output
9	Data 7 (DATA7)	Output
10	Acknowledge (ACK)	Input
11	Busy (BUSY)	Input
12	Paper Empty (PE)	Input
13	Select (SLCT)	Input
14	Auto Feed (AUTO FEED)	Output
15	Printer Error (PERROR)	Input
16	Initialize Printer (SLCT IN)	Output
17	Select Input (SLCT IN)	Output
18-20 (port)	Ground (SG)	
18-25 (cable)	Ground	

Appendix
D Specifications

Standard System

Main Unit

Size: 222 mm(w) x 112 mm(d) x 25.4 mm(h)
8.8"(w) x 4.4"(d) x 1.0"(h)
Weight: 480g (1.1 lbs)
Power Source: AA type alkaline battery x 3 / AC adaptor
Lithium battery (CR2016) x 1 (for memory backup)

Temperature
Operating: 10°C to 35°C (50°F to 95°F)
Storage/Transit: -20°C to 60°C (-4°F to 140°F)
Humidity
Operating: 20% to 80%
Storage/Transit: 10% to 90%

Processor

8-bit 80C88A running at 5 MHz/10 MHz

RAM

PS-RAM 1 MB or 2 MB powered by main batteries
S-RAM 128 KB powered by Lithium battery

ROM

128 KB OTP-ROM for IPL, BIOS and power-on check
One 1 MB Mask-ROM for MS-DOS 3.3, Application Software, LapLink,
diagnostics, and other utilities

Parallel Port

Centronics Interface
20-pin connector (use 25-pin conversion cable)

Serial Port

RS-232C Interface 10-pin connector (use 9-pin conversion cable)
Full duplex asynchronous transmission at up to 9600 baud

IC Memory Card Port

PCMCIA Release 1 68-pin connector 2 ports
S-RAM card Read and Write, other types (eg OTP-ROM, Flash-ROM, EEP-ROM) are read-only

Screen

Supertwist liquid crystal display
Viewing Area: 172.77 mm x 65.97 mm (6.8" x 2.6")
Text Display: 25 lines by 80 characters (in 80 column mode)
              25 lines by 40 characters (in 40 column mode)
Graphics: 640 by 200 pixels bit-mapped

Keyboard

Total 77 keys including:
10 function keys and Fn key

Options

AC Adaptor

CE-301V
Input: 120 V AC, 200 mA, 60 Hz
Input: 220 V - 230 V AC, 100 mA, 50 Hz
Input: 230 V - 240 V AC, 100 mA, 50 Hz
Output: 6.3 V DC, 1.0 A

3 1/2" FDD Unit

CE-301F
Unit: 3 1/2" 1.44 MB drive
Size: 222 mm(w) x 124 mm(d) x 31.5 mm(h) (8.75" x 4.9" x 1.25")
Cable: Converts 80-pin connector to 25-pin D-SUB connector
Weight: Approx. 1.0 kg (2.2 lbs)

Parallel Conversion Cable

CE-301CB
Converts 20-pin connector to 25-pin female connector

Serial Conversion Cable

CE-302CB
Converts 10-pin connector to 9-pin male connector

LapLink Cable

CE-303CB
Connects computer to another computer to use the LapLink Utility.

Appendix
E Error Messages

This appendix lists the main warning and error messages displayed by the built-in applications, accessories and utilities. For a list of MS-DOS error messages, see any standard MS-DOS manual.

Where a message is described as a warning, the previous operation has succeeded, but may not produce entirely correct results. The other messages listed here are error messages indicating that the previous operation has failed, for the reason stated in the message.

If a message is displayed in a window like this:
Press **Esc** to acknowledge it and continue.

```
Text not found
```

`Access denied`
You have tried to delete, or write to a file which is read-only. (See the ATTRIB command in Chapter 7.)

`Alarms can only be set in D:\SYSTEM\DIARY.DRY`
(Warning) You are saving a diary with alarms set in it to a file other than D:\SYSTEM\DIARY.DRY, these alarms won't ring.

`Bad command or file name`
You have mistyped a DOS command, utility or program name, or tried to use a program which is not on your search path. Check your typing and DOS path (using the PATH command).

`Bad disk in drive x`
The disk in drive x is not usable e.g. is not formatted.

`Block too big`
You have tried to manipulate a block in the Editor which is too large for the available memory. Split the process in two.

`Cannot delete this option`
You have tried to delete the Options option from the Pop Up Menu, that is not allowed.

`Cannot install`
You have tried to install the KSIM or LEARN utility but there is not enough memory to run it.

`Cannot operate on this directory`
In the File Manager, you have tried to move, copy, delete or view the parent of your current directory. Move to its parent and then select it.

`Clipboard full`
You have run out of disk space on drive D while copying or cutting to the clipboard. Select a smaller block, or make room on drive D.

`Corrupt file`
You have loaded an application for which the permanent data (current settings) has become corrupted. Or you have tried to load a spreadsheet file into the Worksheet which does not conform to the LOTUS 1-2-3 release 1a file format. If you saved the file from another program, save it once more and try to load it again. In all cases, as much information as possible will be loaded.

`Disk full`
You have tried to write to a disk which is full.

`Disk is write protected`
Either the disk is write-protected, or it is a ROM disk. If the disk is write-protected, remove the write protect switch and try again. You cannot write to a ROM disk.

`Divide by zero`
In the Calculator, you have entered a calculation which involves dividing a number by 0. Check the calculation.

`Divide error`
Turn off and contact your Sharp dealer.

`Expansion Unit batteries low`
(Warning) You should replace the expansion device batteries soon.

`File not found`
An application has tried to load a file which no longer exists. Check the filename carefully, and list the directory by typing * . * as the filename.

`Formula too long`
In the Worksheet, you have entered a formula which is too long for the Worksheet to handle. Simplify the formula. For example, split it into two parts, stored in separate cells.

`Illegal cell reference`
A cell reference was typed into the worksheet which is either badly formed or exceeds the spreadsheet area. (Refer to the cell reference description in the Worksheet chapter.)

`Incorrect password!`
You have typed a password which does not match the stored password.

`Invalid character`
You have typed a character in the Calculator which is not a number or operator. In any application, you have typed a character for the default extension which is not valid in a filename.

`Invalid date`
You have typed a date which is not in the correct format, or which cannot occur. For example, if you have installed for the USA, type December 25th as 12/25, not 25/12 or Dec 25.

`Invalid directory`
You have typed an invalid directory name, e.g. while creating a directory in the File Manager.

`Invalid filename`
You have typed a filename which is longer than the maximum length (8 characters plus "." and 3 more) or includes illegal characters (such as spaces), or used wildcards in a directory name.

`Invalid number`
You have typed characters which are not valid in a number when a number was expected, or typed a number which is too large or too small.

`Invalid option`
(Warning) You have typed an option which is not supported by the utility, so it has been ignored. Use the /? option to list the valid options.

`Invalid PCMCIA card x:`
You are trying to use an incompatible IC memory card in drive x.

`Invalid sequence`
You have tried to compile a file with KSIMCOMP which contains instructions that KSIMCOMP does not understand. Refer to Chapter 7.

`Invalid time`
You have typed an illegal time i.e. one which is not in the format for the country you selected.

`Library error`
You have installed a third party program which has claimed the interrupt used by the applications so that they cannot access the ROM software library. De-install the software (e.g. reboot). OR you have tried to run the applications on another computer, which is not possible.

`List full`
(Warning) In To Do, the to do list has reached the limit of 99 lines: delete some of the completed actions if you want to add more. In the Editor, the List function cannot list all the found lines.

Main batteries low

(Warning) The battery power has become too low to operate the computer reliably. Change the batteries or use the optional AC adaptor.

Margins too big

In any of the applications, you have set printer margins that overlap, leaving no room for the text!

Memory Full

You have tried to run a program, or load a large file into an application and run out of memory. If you have installed any memory resident programs (TSRs), remove them to free some memory. Otherwise, split your application data file into several smaller ones.

Mismatched brackets

In the Worksheet or Calculator, you have typed an expression with a different number of open brackets and close brackets.

Monthly repeat will now occur earlier

(Warning) You have set a monthly repeat in the Diary on a date which does not occur in this month. The repeated appointment has been moved to the nearest available day and will repeat from this day. For example, if you have a monthly repeat on January 30th, when you load the Diary in February it will move to the 28th or 29th.

No alarms were set

(Warning) In the Diary, all alarms are set in the past, so none will ring.

No disk in drive x

You have tried to access a drive which does not contain a disk. Insert a disk.

No files found

You have asked for a list of files (e.g. using Retrieve) but there are none to match the file specification.

No valid select list

You have tried to repeat a List command in the Editor by using **Alt-R**, but have not yet used the List command.

Out of range

You have typed a number which is outside the permitted range. For example, you have tried to set the column width in the Worksheet to 0.

Passwords do not match

You have tried to set or change the password but typed it differently the second time. The password has not been changed or set.

POST Failure - xxxx

Make a note of xxxx, turn off, and contact your Sharp dealer.

`Printer not ready`
The printer is not operating correctly. For example, it might be turned off, disconnected, or out of paper.

`PSRAM Test Failure xxxx:xxxx`
Make a note of xxxx:xxxx, turn off, and contact your Sharp dealer.

`Read error`
A disk read attempt has failed. Any data which has been read is unreliable.

`Replace Card battery x:`
Replace the battery in the IC memory card in drive x. Check the files stored on the card.

`Replace Expansion Unit batteries`
You must replace the Expansion Unit batteries now, to continue using it.

`Replace Lithium battery`
Replace the Lithium backup battery now, to protect against power loss.

`Replace main batteries`
You must replace the main batteries (or connect the optional AC adaptor) to continue using the computer.

`Some data cannot be loaded`
You have loaded a spreadsheet into the Worksheet which contains unsupported @functions, which will be displayed as @ERR.

`SRAM Test Failure: xxxx:xxxx`
Make a note of xxxx:xxxx, turn off, and contact your Sharp dealer.

`Syntax error`
You have supplied invalid arguments to a Worksheet @function.

`SYSTEM ERROR`
`The application has encountered`
`an internal error which it is`
`unable to resolve.`
`Save and exit with Alt-X`
Press **Alt-X** to save the file and exit, then reload the application and try again. If this fails, reboot e.g. press **Ctrl-Alt-Del**.

`Target is outside Worksheet limits`
You have tried to copy cells in the Worksheet beyond the right or bottom edge of the worksheet space, or the range of source cells overlaps the target cells when copying. Copy a smaller block, or copy to a different cell.

`Text not found`
(Warning) You have used a search function, but there is no text matching the search string in the specified search direction.

`Too many columns or rows`
You have tried to insert rows or columns in the Worksheet which would increase the size beyond the limit.

`Unable to create directory`
You have tried to create a directory but can't. For example, there might not be enough room on the disk, or there may be a directory or file with this name already.

`Unable to delete file`
You have tried to delete a file in File Manager but can't. For example, it may be set to read-only or may be stored on drive C (a ROM disk).

`Unable to read file`
The application cannot read data from the specified file. The file is probably corrupt (use a backup).

`Unable to run application`
You have tried to run another application from File Manager or the Pop Up Menu but cannot, due to memory limitations. Exit to DOS and try again.

`Unable to write to file xxxxxxxx.xxx`
The file is read-only, or the disk is full.

`Write error`
A write operation has failed, to a disk or other device.

Appendix
F Maintenance and
Troubleshooting

Taking Care of your Computer

Do's and Don'ts

Your computer is a precision instrument, so handle it with care. For example:

- Do not take it into harsh environments where it might be subjected to rapid changes in temperature, dampness, or excessive dust.

- Do not expose it to excessive vibration.

- Keep the air vents clear to avoid overheating.

- Do not try to force the LCD screen beyond its fully open position.

Cleaning

You should keep the computer free of dust, by using a clean, dry, lint-free cloth. Do not use alcohol, benzine or other organic solvents which might damage the case.

If the screen becomes blurred, you can clean it by using a small quantity of a neutral detergent, on a lint-free cloth.

Batteries

Remember to change the main batteries at regular intervals, or immediately if the low power warning is displayed. Remember to change the Lithium backup battery at yearly intervals in normal use.

See Chapter 2 for details.

Troubleshooting

This section describes how to handle some common problems with setting up and operating the computer. If you see an error message, or for information on handling problems in day-to-day use, see Appendix E.

If the computer won't turn on check that the batteries are fresh and inserted correctly; hold down **Fn**, press **Esc**, release both.

If the screen is unclear check the batteries, try the **Contrast**↑ key, adjust the viewing angle, vary the lighting conditions, clean the screen, or switch to using 40-character mode.

If the computer won't turn off press the reset switch (in the bottom panel) with a sharp object such as a ballpoint pen. Note that this erases all the information from drive E!

If you've selected the wrong language use INSTALL to change the language.

Diagnostics

The computer peforms diagnostic tests whenever you turn on or reboot, as described in Chapter 3.

If the power-on diagnostic routine doesn't display any messages, but you suspect that there is a problem, run the diagnostic program included on drive C. This checks:

- The CPU registers and flags
- The main ROM
- The BIOS ROM
- The screen
- The keyboard
- The serial port
- The parallel port
- The SRAM (screen and drive D)
- The PSRAM (main RAM, drive E and EMS)
- An IC memory card in drive A
- An IC memory card in drive B

To use the diagnostic utility, at the DOS command prompt, type DIAG and press **Enter**, then select the appropriate option from the menu. To leave the menu or cancel a test, press **Esc**.

Testing the CPU

This option checks that all the CPU registers (including flags) are operating. When the test has finished, press **Esc** to return to the menu.

Testing the main ROM

This option checks the main ROM chip by using simple checksums and a CRC. When the test has finished, press **Esc** to return to the menu.

Testing the BIOS ROM

This option checks the BIOS ROM chip by using simple checksums and a CRC. When the test has finished, press **Esc** to return to the menu.

Testing the Screen

This option displays a series of test patterns, one at a time, so you can check that each pixel is operating correctly. To proceed to the next pattern, press any key other than **Esc**. Press **Esc** to return to the menu.

Testing the Keyboard

This option first asks you to select a keyboard layout, then displays the keyboard on the screen. You can then press any keys you want to check and if they operate correctly, this will be shown on the screen. To return to the menu, press **Esc** twice.

Testing the Serial Port

This option first asks you to connect a device to the serial port. You can then send characters to it and the screen will display the serial port setup and status throughout the process. Press **Esc** to return to the menu.

Testing the Parallel Port

This option first asks you to connect a printer to the parallel port. You can then send characters to the printer and the screen will display the port status throughout the process. Press **Esc** to return to the menu.

Testing the SRAM

This option provides two tests: non-destructive and destructive.

The non-destructive option provides a quick check by reading from and writing to each byte of the SRAM in turn. When the test has finished, press **Esc** to return to the menu.

⚠️ *Caution: The destructive test removes all user information from the computer, including drive D and drive E!*

The destructive test checks the SRAM more thoroughly, but overwrites all information in the SRAM. When the test has finished, press **Esc** and the computer will perform a cold reboot. You must then perform the installation process again.

Testing the PSRAM

This option provides two tests: non-destructive and destructive.

The non-destructive option provides a quick check by reading from and writing to each byte of the PSRAM in turn. When the test has finished, press **Esc** to return to the menu.

⚠️ *Caution: The destructive test removes all user information from the computer, including drive D and drive E!*

The destructive test checks the PSRAM more thoroughly, but overwrites all information in the PSRAM. When the test has finished, press **Esc** and the computer will perform a cold reboot. You must then perform the installation process again.

Testing IC Memory Cards

These options provides two tests: non-destructive and destructive.

The non-destructive test checks an IC memory card by reading and then writing each byte on the card in turn. When the test has finished, press **Esc** to return to the menu. The IC memory card should not be changed by this test, but note that you must not reboot during the test or you may corrupt up to 512 bytes on the card.

⚠️ *Caution: The destructive test removes all user information from the tested IC memory card!*

The destructive test provides a more thorough check, but erases all information from the IC memory card. When the test has finished, press **Esc** to return to the menu. Before you can use the card again, you must format it by using the FORMAT command (see Chapter 7).

Appendix
G Configuring your System

The system configuration consists of two configuration files, CONFIG.SYS and AUTOEXEC.BAT, and configuration information stored in non-volatile RAM (NVR).

Non-Volatile RAM Settings

To change the NVR settings, you can use the SETUP, INSTALL, POPUP and REBOOT utilities, or the **Pop Up** and **Set Up** keys.

Use the SETUP utility to configure hardware settings by command line switches i.e. non-interactively. For details, see Chapter 7.

Use the POPUP utility (or **Pop Up** key, **Fn-F10**) to display the Pop Up Menu. Select the Options menu and then Setup the machine to configure hardware settings, or Programs options to configure the applications. Or press the **Set Up** key, **Fn-F9**, to go straight to the Setup the machine menu. For details, see Chapter 6.

Use the INSTALL utility to display the current configurable options, so you can examine or change the settings interactively. It also provides comprehensive help on each option. For details, see Chapter 3.

Finally, to reset the entire system (to make it act as if you had just unpacked it), use REBOOT/F.

⚠ *Caution: REBOOT/F erases all user information from the RAM disks!*

CONFIG.SYS

When the computer boots, it will be configured by the CONFIG.SYS file in the root directory of the boot disk. Normally, this will be drive D unless there is a system IC memory card in one of the drives (A or B). If there is no CONFIG.SYS on the boot disk, the default configuration stored in C:\CONFIG.SYS will be used.

CONFIG.SYS can include any of the following commands:

BUFFERS=n
Reserves n disk buffers to speed up disk access, where n is a number

between 2 and 255. Each buffer uses 512 bytes of DOS memory. The default depends on DOS memory. With 640K, it is 15.

`COUNTRY=xxx[,[yyy][,[pathname]]`
Sets the country code to `xxx`, code page to `yyy`, and loads country information from `pathname`. The default is USA.

`DEVICE=pathname`
Installs the device driver `pathname`.

`DRIVPARM=/D:n[/C][/F:factor][/H:heads][/N]`
`[/S:sectors][/T:tracks]`
Override parameters for physical drive number n (0 is A, 1 is B etc.).

⚠️ **Caution:** *Do not use DRIVPARM for the RAM drives or IC memory cards.*

`FCBS=x,y`
Set maximum number of FCBS to x (1..255), number protected from automatic closure to y (0..255). The default is FCBS=4,0.

`FILES=n`
Set maximum number of open files allowed to n (8..255). The default is 8.

`LASTDRIVE=drive`
Set the last drive letter usable to `drive` (E..Z). The default is Z.

`SHELL=pathname`
Set the command processor to `pathname` and set COMSPEC to the path. The default is COMMAND.COM on boot drive.

`STACKS=x,y`
Sets number of hardware interrupt stacks to x (0..64) and size of each to y (0..512) bytes. The default is 9,128.

Device drivers

The following device drivers can be installed in CONFIG.SYS. They are supplied in C:\DOS or C:\UTILS:

ANSI.SYS

Install ANSI.SYS to use the ANSI character set and escape sequences, using the line:

`DEVICE=C:\DOS\ANSI.SYS`

DD.BIN, DD.EXE, DDINSTAL.EXE

You can use these files and the optional LapLink cable to use a desktop computer's drives as virtual drives. For information, run DDINSTAL.

⚠️ *Caution: If you use DD.BIN, power consumption increases considerably, so you should use the optional AC adaptor.*

EMM.SYS

Install EMM.SYS to use all RAM which is not used as the TPA or drive E, as expanded memory (EMS):

```
DEVICE=C:\DOS\EMM.SYS
```

EMM.SYS will be installed automatically if you selected EMS memory during the initial installation process.

RAMDRIVE.SYS

You can install RAMDRIVE.SYS to create a conventional (temporary) RAM disk, using the following command line:

```
DEVICE=C:\DOS\RAMDRIVE.SYS [xxx [yyy [zzz]]] [/E][/A]
```

xxx sets the RAM disk size, in KB. The default is 64, the minimum is 16.
yyy sets the sector size, in bytes. The default is 128, with the other valid values being 256, 512 and 1024.
zzz sets the number of entries allowed in the root directory. The default is 64, with valid values ranging from 4 to 1024.
/E specifies that the RAM disk should use extended memory.
/A specifies that the RAM disk should use expanded memory (EMS).

If neither /E nor /A is used, the RAM disk will use main DOS memory.

AUTOEXEC.BAT

When the computer boots, it executes AUTOEXEC.BAT from the root directory of the boot disk. On your computer, this will usually be drive D unless a system IC memory card is inserted in drive A or B.

AUTOEXEC.BAT can contain any commands that can be placed in a batch file (see Chapter 7).

Index

C

D

O

P

R

spreadsheet
See Worksheet
system
    restarting 7-3, 7-16
    startup 3-1, 7-2

T

testing the computer F-2
time
    changing 12-15
    displaying 6-6
To do list application 6-7–6-9
troubleshooting F-1
turning off 7-15
turning on 2-4
tutorial
    built-in applications 4-1
    MS-DOS 7-1
TYPE command 7-6

U

undelete 5-20
UNDELETE.DTA file 5-20
Undo key 5-20

W

wildcards 7-5
Worksheet 13-1
    @functions 13-15
    cell references 13-6
    editing 13-5
    filing 13-8
    formulas 13-4
    go to command 13-13
    keys 13-23
    leaving 13-2
    menus 13-24
    operators 13-5
    options 13-14
    printing 13-13
    range commands 13-10
    ranges 13-7
    typing 13-3
    worksheet commands 13-9
WSHEET command 13-1

SHARP®

SHARP ELECTRONICS CORPORATION

Sharp Plaza, Mahwah, New Jersey 07430-2135.

SHARP CORPORATION