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September 1988
A/E Liability Management and Recognition System



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Managing With A/E EASE

by
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The Executive Action Support Environment (EASE) is an automated management tool for U.S. Army Corps of Engineers (USACE) executives at the Headquarters, Major Command, Division, and District levels. The system is designed to allow fast access to information entered into a mainframe by offices and field operating agencies (FOAs).

This report provides instructions for using Architect/Engineer (A/E) EASE, a software package within the EASE family of application programs. A/E EASE supports management and analysis of the A/E Liability Program at USACE Headquarters. However, it can easily be customized for USACE Divisions that have similar data requirements.

Guidance in this report includes a general orientation to the system; recommended hardware and software; installation procedures; basic use; advanced use; and documentation. Typical file and report contents are illustrated through examples. The program described is A/E EASE Version 1.1.

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<p>The Executive Action Support Environment (EASE) is an automated management tool for U.S. Army Corps of Engineers (USACE) executives at the Headquarters, Major Command, Division, and District levels. The system is designed to allow fast access to information entered into a mainframe by offices and field operating agencies (FOAs). Executives responsible for ensuring the success of programs at these offices and FOAs can use EASE to generate reports quickly and use this information to organize their work.</p> <p>This report provides instructions for using Architect/Engineer (A/E) EASE, a software package within the EASE family of application programs. A/E EASE supports management and analysis of the A/E Liability Program at USACE Headquarters. However, it can easily be customized for USACE Divisions that have similar data requirements.</p>			
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FOREWORD

This manual was prepared for the Directorate of Engineering and Construction, Headquarters, U.S. Army Corps of Engineers (HQUSACE), under Project 4A162731AT41, "Military Facilities Engineering Technology"; Work Unit BO-051, "A/E Liability Management and Recognition System." C. Hudson, CEEC-EB, was the HQUSACE Technical Monitor.

The project was conducted by the Facility Systems Division (FS), U.S. Army Construction Engineering Research Laboratory (USA-CERL). Dr. Michael O'Connor is Chief of FS. The technical editor was Dana Finney, USA-CERL Information Management Office.

In addition to the authors, the following individuals have been directly involved with developing the Executive Action Support Environment (EASE) family of programs and deserve acknowledgment. Many other individuals not listed below have also contributed important comments, suggestions, and other help.

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COL Carl O. Magnell is Commander and Director of USA-CERL, and Dr. L. R. Shaffer is Technical Director.

A MESSAGE FROM THE AUTHORS

We hope that you will find Managing With A/E EASE to be a useful resource. We have attempted to make it as "user-friendly" as the A/E EASE program itself. This manual was written to complement the A/E EASE program by telling you what each feature does as well as how and why to use each feature.

Managing With A/E EASE contains a much broader range of information than the A/E EASE program. We have included several general computer information sections and a glossary. It is our intention that this manual will become a source of basic computer knowledge for the novice micro-computer user.

As you read this manual, you will notice that we have used a **boldface type** to show you what will appear on your computer's screen. In addition, we have noted the **keys** you need to press to access A/E EASE features in **boldface type**. This convention will, we believe, make it much easier for you to learn to use the A/E EASE program.

Since we are continuing to refine and improve the A/E EASE program and this users' manual, your comments and suggestions will be appreciated. An evaluation form is provided in the front pocket of this notebook. Comment sheets have also been included for your convenience. Once you have completed the evaluation form, please mail it to the address noted at the bottom of the form. If you wish to discuss the program over the telephone, please contact Mr. William East at 800-USA-CERL or, in Illinois, 800-252-7122.

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CHAPTER 1
INTRODUCTION

EASE Program Concept and Goals

Executives within the U.S. Army Corps of Engineers (USACE) are responsible for ensuring the success of various programs. Therefore, they must be aware of how well work is being accomplished at each office and field operating agency (FOA). Quick access to required information and methods of reviewing that information are essential resources for these executives.

The Executive Action Support Environment, EASE, is an automated management tool to help executives perform their work more efficiently and effectively. It provides quick output of desired reports and allows users to organize their work. Accessing mainframe data on the microcomputer so that it is always at the executive's fingertips is a need that has also been addressed by EASE.

EASE is designed to allow each using agency to customize its features for specific requirements. Thus, a wide range of users can be served at HQUSACE, Major Commands (MACOMs), Divisions, and Districts. The EASE program can also be customized for functional requirements in an organization.

The A/E EASE software described here is one version within the EASE family of application programs. A/E EASE was developed to support management and analysis of the A/E Liability Program at HQUSACE. This version can also be easily customized to meet the needs of Divisions that have similar data requirements. Guidance on A/E liability administration, procedures, and reporting is in Engineering Regulation (ER) 715-1-10. A USA-CERL Technical Report provides a detailed look at the A/E liability issue.¹

¹E. W. East, et al., Opportunities for Quality Control in Construction through A/E Liability Management, Technical Report P-88/13 (USA-CERL, 1988).

Overview of A/E EASE Features

Through A/E EASE, a USACE executive can:

- Generate both standard and ad hoc reports to help manage the A/E Liability Program.
- Access A/E EASE program help files and database.
- Access the Architect/Engineer Contract Administration Support System (ACASS) by pressing one key.
- Create and save graphic reports for presentation or to include in printed documents.
- Keep track of appointments and telephone directories.
- Organize files according to meetings or individuals.
- Keep track of personal notes and "To-Do" lists.

How A/E EASE Works Within Enable

The software product within which the EASE programs function is called Enable, an "integrated" software package created by The Software Group, Ballston Lake, NY. Because it offers word processing, telecommunications, spreadsheet, database, and graphics applications, it provides a very good foundation on which to build the EASE programs.

EASE application programs are a supplementary menu system to Enable's own menus. When a selection is made from an EASE menu, a "macro" program is executed. Macros generally run "behind the scenes" without requiring the user to learn Enable. This configuration gives the user more power with many fewer key strokes.

EASE programs are not a replacement for the Enable program. You will have to learn a few Enable commands. We've made it easier for you to learn by displaying these commands on your computer screen or in the help messages.

Status of Program Development

This manual represents a specific customization of the generic EASE library features. Our customized version, A/E EASE, provides for both the A/E Liability Management and Analysis System, delivered as part of USA-CERL research, and support to USACE, through efficient use of automation. The current version of A/E EASE is 1.1.

A/E EASE is distributed in the form of diskettes and the users' manual that you are now reading. Also important for customizing Version 1.1's features is the users' manual from the Enable software program.

Users are encouraged to submit their comments and suggestions on the use of A/E EASE on the enclosed evaluation form. The form is located on page iii.

Currently, there are at least four customizations of the EASE programs. These applications are being used or are in development for the Office of the Assistant Chief of Engineers, Office of Chief Council, Directorate of Engineering and Construction, and applications in support of Facilities Engineering at HQUSACE. The programs have been fielded so far at HQUSACE and Division Offices.

CHAPTER 2
GENERAL COMPUTER SKILLS AND FUNCTIONS

Overview of Hardware Components

The Keyboard

The keyboard acts as the interface between the computer and the user. It is important to become familiar with most of the keys. They are divided into two categories, which are distinguished according to light or dark shading.

The first category includes the light-shaded alphanumeric and cursor-movement keys that can be used to: type letters, numbers, and symbols on-screen; delete and insert text; and move the cursor. The alphanumeric keys are used for entering commands, text, and variables, and for moving the cursor in different directions within a program. The cursor movement keys **Home**, **PgUp** (Page Up), **End**, **PgDn** (Page Down), and the four arrows keys do exactly what the names and symbols on them imply.

For some functions, certain keys must be pressed in combination with other keys. For example, the dark-shaded **Ctrl** and light-shaded **Home** keys are pressed simultaneously to move the cursor to the beginning of a file in an Enable file display.

The second category includes the darker-shaded keys. With the exception of the + (plus) and - (minus) keys, these keys by themselves cannot cause anything to print on the screen. They are used to manipulate and manage what is created with the other keys and give those other keys special functions when used together. These darker-shaded keys include the following:

- Ten function keys, **F1** through **F10**.
- **Esc** (Escape), **Tab** (tabs), **Ctrl** (Control), **Shift** (shifts to upper case mode), and **Alt** (Alternate) keys.
- **Backspace**, **Enter** (or **Return**), **PtScr** (Print Screen), **Caps Lock** (locks keyboard in upper case mode), **Num Lock** (locks numeric keypad in numeric rather than cursor control mode), **Scroll Lock** and **Break**, and the + (plus) and - (minus) keys.

The Central Processing Unit (CPU)

The CPU is a microprocessor chip that forms the heart of the computer; however, the term CPU is often used to refer to the entire system unit. The CPU determines the speed at which the machine operates, the amount of information it can process, and the type of operating system that it runs. The operating system is the software that controls the machine and all of its associated hardware (see Disk Operating System, Section 2.2).

The speed of the microprocessor is measured in megahertz (MHz). One MHz is one million cycles per second. Microcomputers generally operate between 4 and 16 MHz. Recommended hardware for EASE (see Chapter 4, Section 4.3, Recommended Hardware) runs at 6 and 8 MHz.

The microprocessor's capability is based on its instruction size. Most microprocessors in microcomputers today are either 8-bit or 16-bit, which means that they use either 8-bit or 16-bit instructions. Eight-bit microprocessors process 8 binary digits (bits), or pieces of information, at once. The 8-bit chips can encode a letter of the alphabet in one step, whereas 4-bit chips require two steps. The Apple IIe and the Commodore 64 are examples of machines with 8-bit microprocessors. The 8-bit machines are quite popular on the market today, but for the large-scale office automation and communication tasks required by USACE, the 8-bit machines are not powerful enough. Successful operation of large spreadsheets and databases requires the 16-bit microprocessors.

There are also 32-bit machines now available, such as the Compaq 386 Deskpro. The new line of IBM computers use a 32-bit microprocessor, the 80386. This relatively new class of computers will not be discussed specifically in this manual. References to "IBM-compatible" refer only to the IBM PC/AT standards, not this new class of computers.

The IBM PC-compatible and PC/AT-compatible are some of the most widely supported microcomputers used by Army engineers today. There is a tremendous base of software and hardware available to run with these machines and the real "compatible." Many training classes deal with software for the IBM compatible, and several new applications are currently being developed. For these reasons, the IBM-compatible is the most highly recommended micro for Army engineers at this time.

The basic difference between the IBM PC or PC/XT and the IBM PC/AT is the microprocessor. The IBM PC and PC/XT use the Intel 8088 microprocessor, and the PC/AT uses the Intel 80286, which is far more powerful and faster. This increased power allows corresponding performance improvements in applications. The PC/XT and PC/AT can also run most of the existing IBM PC software with greater speed than the IBM PC.

IBM PC compatibility at its highest degree allows you to run all of the programs that run on the IBM PC on other machines and to use the same hardware. Some of the machines that fall into this category of compatibility are the AT&T 6300, Compaq computers, and certain Kaypro models. Essentially, having one of the true compatibles is equivalent to having an

IBM PC. In some cases, the compatible computer may actually be a superior machine (e.g., Compaq). For applications that require rapid handling of data, such as graphics and databases, the IBM PC/AT compatible is recommended. AT compatibles include the ITT Xtra XP, the Compaq 286 Deskpro, and the Kaypro 286i. These machines will all run common spreadsheets, databases, communications, graphics, word processors, and utilities currently available for the IBM PC and AT.

To further cut processing time of the 8088 and 80286 chips' coprocessors have been developed. A coprocessor is a special-purpose microprocessor designed to work in conjunction with the CPU and to handle specific tasks. It allows for faster computation or processing. For example, the IBM PC uses the 8088 chip as a CPU, but this chip is not designed to handle floating-point (or real number) arithmetic. Therefore, the user can install the 8087 chip, which is a floating-point coprocessor. The 8088 can handle floating-point numbers with the aid of software. However, the 8087, due to its independent handling of floating-point numbers, can work 25 times faster. The math coprocessor that runs with the 80286 chip is the Intel 80287 and is recommended for the EASE program (see Recommended Hardware, in Chapter 4).

Random Access Memory

The 8088, 80286, and 80386 chips are the computer's volatile electronic memory. This type of memory, called Random Access Memory (RAM), is the short-term memory that changes as each program runs. The RAM data is lost when the computer's power source is turned off.

The amount of RAM in a machine is very important for applications because it determines the amount of work that can be done without requiring disk access. Electronic memory is many orders of magnitude faster than disk, making RAM very desirable. Sometimes the machine can only support a fraction of its total memory allowance on the main system board. In that case, the user can purchase an add-on board that has a memory option in order to provide more RAM in the machine.

Most 8-bit machines can support only up to 64 KB of RAM, but the newer 16-bit microprocessors can support up to 1 MB or more. This large memory makes these microprocessors extremely capable for use in graphics, where tremendous amounts of high-speed memory are required, as well as with large spreadsheet or database programs. Artificial intelligence systems and inference engines also require such large amounts of memory.

The IBM compatibles usually allow at least 512 KB of RAM to be loaded into the machine. However, it may not all fit onto the main board of the machine, thus requiring an expansion board. A good figure to work with is 640 KB, considering that only 640 KB is "addressable" by MS-DOS in conjunction with most software products. Memory above 640 KB can be used for loading files into memory or, in the case of some software products, for extended logic operations. A future version of DOS is expected to address more than 640 KB of RAM.

Computer systems also are equipped with a Read-Only Memory (ROM). This is long-term memory. ROM chips are installed in the machine with pre-encoded instructions containing items the user never sees, such as machine instructions. ROM, unlike RAM, cannot be erased when the computer is turned off nor changed under program control.

Disk Storage

In addition to the chips comprising RAM or ROM, there are media available for data storage. Disks are commonly used for storing data on a large scale. They are nonvolatile in nature and are used for storing documents, databases, program operating files, and other types of information. The two most common disk types are hard disks and floppy disks. A hard disk is also known as a fixed disk or a Winchester. Hard disks are fairly rapid at accessing information, but cannot replace RAM for several reasons--the most important of which is that, while a program may be stored on the hard disk, the computer must first load it into RAM before running it.

Hard disks fill up very quickly, even though they appear large at first. A hard disk should have at least 20 MB of storage.

Another important consideration is that the computer should be able to "boot" from the hard disk. That is, the computer should be able to start and load the operating system from the hard disk when the machine is on. This process consumes 60 to 80 KB of RAM when in use. Floppy disks (or diskettes) are useful for transferring data from one machine to another and for backing up the hard disk. Most commercial software is purchased on floppy disks and must be copied onto the hard disk before it can be used.

The standard floppy drive for the IBM is 5.25 inches in diameter and holds 360 KB. This standard size is known as a double-sided, double-density diskette. The way in which the sides are used and information is stored on the disk is called the format. Another widely used size is the high- or quad-density diskette which holds 1.2 MB and has the same physical dimensions as the double-density diskette. Most PC/AT type machines offer a high-density diskette drive.

Double-sided, double-density (or low-density) diskettes hold 362,496 bytes or 360 KB of information. Double-sided, quad-density (or high-density) diskettes hold 1,213,952 bytes or 1.2 MB.

There are certain limitations for reading different types of diskettes with different types of drives. The following rules always hold true: (1) low-density diskettes can be formatted, written to, and read with low-density drives, as well as read by high-density drives. (2) High-density diskettes can be formatted, written to, and read with high-density drives.

If conditions are right, low-density diskettes can be formatted and/or written to by high-density drives. Some computers, such as Compaq, provide a high-density drive that can format a low-density diskette if a certain parameter is given with the format command. If a low-density diskette was formatted by a low-density drive or a Compaq high-density drive with the /4 parameter, and contained no information, any high-density drive could successfully write to and read information from the diskette. If a low-density diskette contained a file written by a low-density drive, and that file was overwritten by a high-density drive, then that information would be partially or totally unreadable by a high-density drive. This situation is true because the high-density drive writes in a narrower track than the low-density drive.

Because of the limitations involved in using low-density diskettes with high-density drives, it is advisable to have both types of drives. It is possible to copy information between the drives without complications. Most software products are distributed on low-density diskettes and can be read by either low- or high-density drives. However, if you should wish to put information on a diskette for someone else, you may want to have the option of placing that data on either a high- or low-density diskette. Because high-density diskettes can store more information, the high-density drive is extremely desirable. This fact is especially important when using a diskette drive to back up the hard drive in your computer.

Display

The display or monitor is a required output device. The display resolution is very important. Resolution refers to how many dots of light are used to display the image on the screen. A two-number format is normally employed to describe display resolution. The standard resolution for the IBM Color Monitor, for instance, is 640x200. This level means there are 640 "pixels" or dots horizontally on the screen and 200 vertically. This level is not adequate for many of the tasks performed at microcomputer workstations. Poor resolution can cause eye strain due to fuzziness and general poor quality of text on the display screen. A reasonable resolution is 640x350, which yields far better results for the computer user.

Color can be an important aid in many applications, especially graphics. EASE uses color extensively to help the user. Text applications also can take advantage of color to supply additional information to the user. It is a good idea to purchase as much color support as possible.

Printers

The 8088 and 80286 machines can communicate with various types of devices through ports. Parallel ports are commonly used for printers.

Serial ports are slower and are usually used for modems, plotters, mice, and other devices. The number of ports allowed is controlled by the hardware and the operating system in use. MS-DOS allows for only two parallel ports and two serial ports. These limitations are often very restrictive for engineering applications on a micro. For instance, an engineer may wish to use a digitizer, a plotter, a mouse, and a modem on the same machine. These devices all require a serial port, so they must either be placed on a switching device or the engineer must switch connecting cables when changing tasks.

Printers are the most common peripheral for output from the micro-computer. They work faster than all paper output devices available and have a wide variety of capabilities. While a monitor is necessary for rapid work on a micro, it is usually necessary to keep paper copies to pass on to other personnel or to keep as "hardcopy."

Printers are of two basic types: letter quality and dot matrix. Letter quality printers tend to be slow and expensive, but they produce exceptionally clear text, exactly like that of typewriters. The most common kind have a "Daisy Wheel," which looks like a small disk with spokes protruding from its perimeter. Each spoke has fully formed character stamps on it. This wheel is mounted next to the platen of the printer and rotates to place the appropriate character in front of the paper, where a small hammer then strikes it.

Dot matrix printers are generally an order of magnitude faster than letter quality printers, but have a lower quality output. They form characters by striking the ribbon with a number of very tiny pins as the print head passes over the paper, resulting in a rough, coarse-looking text. Some printers have a greater number of the tiny pins spaced closer together, allowing for a print quality very near that of letter quality printers. These are called "near letter quality" printers, recommended examples of which are the Epson FX and LQ models (see Recommended Hardware in Chapter 4).

There is a variety of alternative technologies that give similar output with less noise than the dot matrix. One example is the thermal printer, which burns the surface of the paper slightly, substituting small electrodes in place of pins. Another is the ink-jet, which sprays a fine stream of ink onto the paper. The Hewlett Packard Thinkjet is a good example of an inexpensive ink jet printer which operates at a very low noise level.

The laser printer is another type of low-noise printer. It is effectively a very high-resolution dot matrix printer, but uses a laser to write to a drum which picks up toner and transfers the characters to the paper, much like an office copier. This type of printer is very expensive, ranging from \$3500 for the Hewlett Packard Laserjet to more than \$20,000. While the laser does not fit everyone's needs, for those with very demanding printing requirements, this type of printer can perform quite well. Note, however, that many software products cannot print graphics on a laser printer; these packages can print only text determined by a font cartridge which is required for laser printers.

Modems

A modem is a device that enables computers and terminals to communicate with each other by sending signals over telephone lines. Using a modem to reach another computer, the capabilities of your computer can be extended by gaining access to information stored at remote locations. To establish a connection between two computers, a modem is usually required at both ends of the telephone line. (The other option available is a "hardwired" connection, commonly used for networks, but which can often be used to call other systems.)

All data, including characters, is stored in a computer as "digital data"--in other words, as special sequence of the binary digits 0 and 1. To transfer the digital data, a device must be capable of representing only the computer's digital signals as sets of two distinct states (0 or 1; off or on). However, the telephone system transmits only analog signals or tones, which vary continuously. A modulator is a device that converts digital signals into analog signals; a demodulator performs the opposite function by converting analog signals to digital form. A modem performs both the modulator and demodulator functions. The term "modem" is the result of a contraction for MODulate-DEModulate.

The baud rate is a measurement of the modem's transmission speed, which translates roughly into bits per second. Most personal computer telecommunications take place at 300 baud, or about 30 characters per second. Some modems may transmit at up to 1200 baud, in which case two or more data bits can be encoded on each baud. AT&T created a standard for telecommunications some years ago, called the Bell 212-A, describing exactly how signals are to be sent. Most modems today adhere to this standard in the 110- to 1200-baud range.

In addition to the rate at which the modem itself can transmit, limitations relative to each type of communications software and adequacy of telephone lines are factors affecting the speed of communication. Poor quality telephone lines will usually not allow transmission rates above 300 baud. Older terminals and teletypes operated in the 110- to 300-baud range are extremely slow and unacceptable for most of the communications being done by Army engineers today. However, it may be desirable to use a 300 baud-capable modem for situations in which higher speed communications are not supported. When dialing long distance, the quality of the telephone line can vary. Hanging up and replacing the call can sometimes result in a clearer line as calls often take different routes through telephone company switching equipment. A bad connection is often said to cause "line noise" or "garbage."

A "smart" modem is one that can be programmed and can detect dial tones, busy signals, etc. Smart modems have a set of commands that tell them to do actions such as dial, hang up, use touchtone or pulse dialing, and send break signals.

"Autodial" is the term used to describe the ability of the modem to dial a telephone number automatically. "Autoanswer" refers to the ability of the modem to answer the telephone line and detect what speed the caller is using on his/her modem, adjusting to it automatically.

Some manufacturers of quality modems are Hayes, U.S. Robotics, Racal-Vadic, AT&T, and Rixon. Modems can be purchased in external or internal form. The internal form is characterized by an add-on board that has the modem on it.

Add-on Boards

Add-on boards, often called "multifunction" or "expansion" boards, allow the user to increase your system's capabilities. Typical options include additional memory, serial ports, parallel ports, battery-powered clocks, etc. The advantage is that some of these options, if unavailable from the computer manufacturer, often are accessible through another company at a reasonable price. The use of a multifunction board instead of the single-function board allows space for more boards and options in the computer.

Another interesting add-on is the "accelerator" board. This board has a CPU of its own, which can take on some of the workload allocated for the computer's CPU. The user acquires the ability to run more than one task at any given time and to complete tasks at a much faster rate than without the accelerator board. However, some software, such as Enable, provides multitasking without the need for an accelerator board.

"Networking" boards are also available. These boards and additional software allow several microcomputers to be tied together. Users can share information and resources via a wire that connects all the computers on the network. One can be connected to a local area network (LAN), such as Corvus, Banyan, 3-COM, Novell, and PC-Net, or to a broadband network such as Sytek and Docunet. A few users within USACE also have wires connecting them to mainframe computer systems.

Other Peripherals

Plotters provide the color graphics output necessary for A/E drawings, which is far superior to that of color printers. Software packages are required to drive plotters. Plotters come in various sizes and often are reasonably priced compared with other color output devices. Hewlett Packard, Calcomp, and Gould are well known examples of plotter manufacturers.

Mice are devices that detect motion when pushed or dragged across a surface. The mouse allows the cursor to move across the entire computer screen. Moving the mouse into position and pressing one of the two or three keys located on its top is the way that you select a command. Many graphics packages can be used with the mouse to allow for interactive drawing on the display. The EASE program was not designed to be driven by a mouse, but this possibility is currently being studied.

Digitizers allow the user to enter physical coordinates in a manner similar to using a mouse. Digitizer devices include tablets with mechanical arms that detect relative motion and position, pen-shaped objects for work on special tablets, and various other elements. Surge protecters and radio frequency interference (RFI) filters should be considered mandatory for a digitizer system. A surge protector is a device that keeps power line surges from reaching the computer and thereby gives it some protection against lightning and other sources that may cause a power surge. RFI filters aid in keeping spurious noise from causing data loss or destruction in the computer's RAM while programs are running. Several vendors offer surge protecters with built-in RFI filters.

Tape backup systems are valuable because they allow for high-speed backup of the hard disk. Standard backup for most PCs is the floppy disk, which requires an exchange of approximately 30 double-density diskettes (or 10 high-density diskettes) in and out of the machine for each 10 MB used on the hard disk. This method of backup may become quite tedious for the user performing the process. Therefore, a tape backup system is desirable.

A typical 10-MB tape can be filled and checked for errors in approximately 15 minutes, allowing an entire 20 MB hard disk backup process to take less than 30 minutes. Except for the act of exchanging tapes, these procedures usually do not require someone to monitor them, in contrast to the process of using diskettes. Tape backups of selected files or directories can be performed easily with many tape drive systems. Compaq, for example, makes a tape drive available in their PC- and AT-compatible machines and supplies a program that allows unattended backup.

Disk Operating System

In the 1970s, CP/M was the dominant operating system for microcomputers. With the advent of the IBM PC, CP/M was replaced by MS/DOS (Microsoft Disk Operating System). In recent years, it has been considered expedient to purchase hardware and software that employed the IBM-compatible operating system because most software is written for MS/DOS. MS/DOS is expected to evolve in an attempt to keep pace with advancements in hardware and software technology.

All computers have an operating system that controls how they process data and communicate with other programs and machines. DOS Version 3.1 or 3.2 is recommended to be used with EASE (see Software for the A/E EASE Program in Chapter 4).

The disk operating system has three basic types of instruction: the I/O Manager, the File Manager, and the Utility Commands. Without the I/O Manager and the File Manager, the user would have to provide complex instructions before the computer could execute any program. The I/O Manager and File Manager are largely "invisible" to the user.

The I/O Manager

The first type of instruction is the I/O Manager, where I/O stands for input/output. The I/O Manager controls how data is moved in and out of the processor. It is like a switchboard operator who is constantly making connections between the processor and the input/output devices. The keyboard is an example of an input device, whereas the monitor and printer are examples of output devices. The hard drive and the floppy drive can be both input and output devices, depending on how the processor is using them at the time. The I/O Manager commands are mostly transparent to the user.

The File Manager

The File Manager is the second type of instruction and is the part of DOS that controls how the individual files are stored, manipulated, and executed. The File Manager is responsible for finding the requested program or file, loading it into internal memory, and making sure that the proper commands are available when they are needed.

The File Manager loads only the part of the program that is currently required by the processor and then continuously monitors what commands are being executed. While it is monitoring those commands, it also finds and loads the commands that will be needed next. The File Manager, like the I/O Manager, is transparent to the user with the exception of a few commands.

The Utility Commands

The final instruction type is the Utility Commands. These commands are provided and furnished for the user. They are what most users consider to be the operating system because they are generally the only portion of DOS that can be seen. The Utility Commands allow the user to give instructions to the computer and to control, to some extent, what is done and when. The Disk Operating System provides the necessary background so that complex sets of instructions can be performed by issuing simple commands.

Tree-Structured Directories

DOS tree-structured directories are useful for organizing the files contained on the hard disk. They are especially helpful when using a hard disk, which can contain thousands of files at a time. Keeping large numbers of files in one directory is not efficient for DOS. The larger the directory, the longer it takes DOS to search for a file. Related groups of files can be placed in their own directory, and then when access to a file in a particular directory is desired, the path to that file can be specified.

A directory is like a drawer or folder in a file cabinet: DOS provides the filing cabinet and the directories are set up according to the system that the user defines. DOS requires only one special directory called the ROOT directory. This directory is where the DOS I/O and File Managers are stored. The ROOT directory is the only one with a physical size limitation. It can hold only a fixed number of files, which makes the proper use of directories necessary.

Directories are said to be tree-structured because they branch out from the ROOT directory much like the branches of a tree--similar to the way a family tree is organized (Figure 1). Branching out from the ROOT directory are the first-level subdirectories. The number of subdirectories is limited by the number of files allowed in the ROOT directory. DOS regards a subdirectory name as a file. Each subdirectory can branch out into any number of second-level subdirectories, and each second-level subdirectory can branch out into third-level subdirectories, and so forth. A subdirectory can also contain any number of files as well as branches to other subdirectories. It is advisable not to go beyond the third level of subdirectories because DOS begins to have trouble keeping track of files stored that far down the tree.

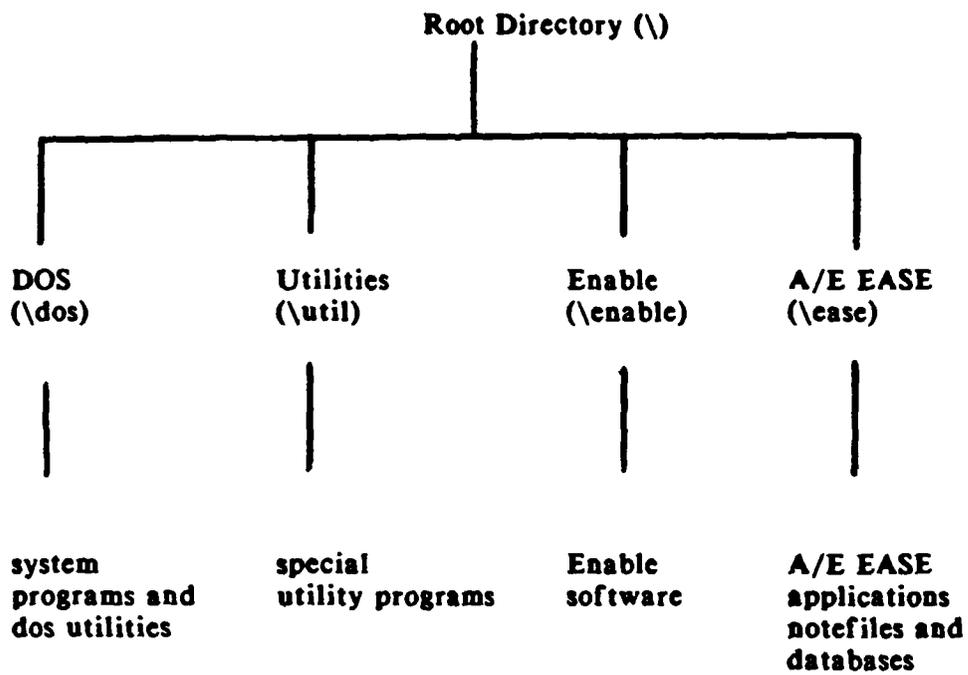


Figure 1. Tree-Structured Directories.

Several conventions are employed to make directory use consistent. These are presented below.

Directory and Subdirectory Names:

One to eight characters. File Names: one to eight characters with an optional three-character filename extension separated by a period. Valid characters are letters, numbers, and the symbols \$ # @ & () { } ' ' - and

Path Names:

The way in which you access a file. The path name is a combination of either the absolute, from the root directory, or relative, from the current directory, location of the necessary item.

1 to 63 characters (see Section 3.3--Useful DOS Commands). Volume Labels: 1 to 11 characters. Valid characters include letters, numbers, and all the symbols permitted for a filename, as well as a space.

Wildcards:

The wildcards ? and * are global characters and can be used in any filename or as part of a path specification. Some examples of use are:

- ? matches any character.
- * matches any number of characters.

For example: rep???.* will include all the files beginning with the letters rep which have a total of six characters in the first part of their file-names.

. will include all files in the directory. For example, copy *.* a: copies all files in the current directory to a floppy disk in drive a:

Useful DOS Utilities

When you are starting the A/E EASE program or when you want to access other programs on your computer, you will need to know some basic DOS utilities. This section is organized around the four general tasks you will want to perform through your computer's operating system: (1) working with files, (2) working with directories, (3) working with floppy disks, and (4) system administration.

Working With Files

copy copies one or more files to another file, directory, or storage device (hard disk or floppy disk). Use this command in the following way: **copy filename destination**. You type the command **copy**, then the full filename, including any filename suffixes, and then you type the destination as required. Here are some examples:

copy b:filename copies a file from a disk in drive B: to the current directory
copy filename b copies a file from the current directory to a disk in drive B:
copy a:*. * c copies all files from a disk in drive A: to the current hard-drive directory
copy filename newfilename makes a duplicate of a file and gives the copy a different/new name.

del deletes the specified files (same as ERASE). For example, **del filename** deletes a file from the current directory.

print queues and prints data files. There are many ways to print a file, but not without limitations. There are two ways to print in DOS and other ways to print directly from a word-processing program. For example, **print filename** will send to the printer a DOS file that has been written in the ASCII format. This procedure can be done only by saving a file in ASCII format.

Holding the Shift key down and pressing the Print Screen key will send whatever is displayed on the computer screen to the printer. The results may not be in an acceptable format.

ren renames files. For example, **ren oldname newname** gives an existing file a new name.

type displays file contents. This action can also be used to print a file at the printer. For example, **type filename** displays the contents of a specific file in the current directory. Non-ASCII files will not display readable text in most cases. **type filename > prn** prints the file on the printer connected to LPT1. Optionally specify LPT2 or LPT3 if another

printer is hooked to your computer either directly or by logging onto an LAN.

Working With Directories

cd changes current directory to another directory. For example, **cd c:\ease** changes from the current directory to the directory named "ease."

dir lists filenames in your current directory. There are several options that you can use with this command, for example, **dir/p** displays files in the current directory and pauses when the screen is full until you press a key. **dir/w** displays files across the screen, providing a more compact presentation.

dir *. Lists only the subdirectories of your current directory.
dir *.*?BF Lists all EASE database files and definitions in the current directory. (see Files Used to Start A/E EASE for an application of this command)
dir a: Displays the files and directories on a floppy disk which is in drive A:
dir > prn Prints the directory listing provided your printer installed correctly and powered on this command.

md stands for "make directory" and creates a new subdirectory. For example, to create a directory called "ease" just under the root directory, you can use **md c:\ease**. You can also use the relative pathname to describe the new directory. If in the example you were already in the root or c:\ directory then you could just type **md ae**.

path displays the search path that DOS uses to find files and directories. The command is best set in the AUTOEXEC.BAT file which is a set of commands executed automatically when the computer is turned on. Typing the command **path** will show your current path. If you provide directory information, the path will be modified, for example **path=c:\;c:\dos;c:\ease;c:\util** is the minimum path that should be set to allow you to execute the A/E EASE program.

rd removes a subdirectory that has been emptied of all files. For example, **rd mydir** removes a subdirectory named mydir from the current directory. **rd \mydir\files** removes a subdirectory with the name files from the directory mydir.

Working With Floppies

diskcopy Used to copy floppy disks. For example, **diskcopy a: b:** makes an exact copy of the disk in drive a: to the floppy disk in drive b:.

format Should not be used unless you are very careful and have enough time to think through what you are doing. This is one of the DOS utility commands that could destroy everything if not used correctly. The only way you should ever use this command is to initialize a new floppy disk so that

you can store data on it. To initialize a new floppy disk, place the disk into drive a:, then type in the command `format a:`.

`recover` recovers files from a disk that has a defective sector. For example, `recover a:filename` recovers a specific file from the disk in drive a:.

`tree` displays the directory paths for all directories in the hard drive. `tree | more` displays all directory paths, one screenful at a time.

System Administration

`chkdsk` checks disks and reports status. `chkdsk` will show available space on the hard disk and available RAM. This command should be executed daily.

`cls` clears the display screen.

`date` allows the date known to DOS to be displayed and/or changed.

`prompt` allows you to set the message that DOS displays on the screen to remind you that it is waiting for a command. For example, `prompt hi` will set the DOS prompt to the message `hi`. `prompt pg` will set the DOS prompt to `c:\current directory name>`. This last example of the prompt command is highly recommended since you will be reminded of your location in the directory structure.

`time` allows the time known to DOS to be displayed and/or changed.

CHAPTER 3

ORIENTATION TO THE A/E EASE PROGRAM

How to Use the A/E EASE Menus

The EASE menus are supplemental to Enable's own built-in menus. The following is a list of the standard menu selections that appear on many of the EASE menus:

Preceding Menu
Revise an Entry
Add an Entry
Delete an Entry
Leave Menu to Select a Line

We have used this coding to help you use the EASE program efficiently in a very short period of time. For the more unique features, which change depending on the particular application, you will have to read the selections in some detail. Chapter 5 explains all menu choices available in A/E EASE Version 1.1.

You can perform one of three operations at each menu. The first two are used to help you select an option that you find there, and the third is a help feature. The first way to select a menu option is to use the arrow keys to move the highlighted bar over your selection, then press the Enter key. If your arrow keys do not work, you should make sure that the Num Lock is off. Num Lock changes the key function from the arrows to a numeric keypad.

The second way to select a menu option in EASE is to press the letter corresponding to the first letter of your selection. This method allows you to make a selection with one key stroke rather than with several arrow keys and an Enter keystroke. As you become more familiar with the pattern of the A/E EASE menus, you will begin to use the first letter method almost without thinking. For those who do not type efficiently, the arrow key method may, initially, be quicker.

Before selecting any option in A/E EASE for the first time or before you become familiar with the selection, read the help message for the option. To view the help message, move the highlighted bar to the item desired and then press the F1 key. The help feature for the item you want to learn about will appear only if the item is highlighted.

In the help message, you will be given a general description of the feature and told what will happen after you select it. In many cases, this help message will tell you that you must press Ctrl F6 when you are finished with your work in order to return to the previous menu. In some cases, a menu choice may present another menu. Help messages will be more specific as you approach an executable option.

Once you have read the help message, press the F1 key again to make the message disappear.

As you gain experience, you may wish to begin using some Enable features. EASE allows you easy access to the Enable program. However, this option is not listed on the A/E EASE menus to avoid tempting the novice user. Use of this feature also is not recommended until you have completed the Enable tutorial programs.

When you enter the A/E EASE program, you can press the function key F2 to access Enable. To return to A/E EASE in the safest way, you should return to the Enable opening menu. Once at the opening menu, you can hold down the Shift key and then press F10. This combination command will bring up the A/E EASE opening menu again.

What If Your Screen Goes Crazy?

During the execution of most A/E EASE features, you may notice the letters "MAC" on the bottom line of the screen to the right. This indicates that one of the programs which helps you execute the menu selection, called a "macro," is running. If you manage to disobey the rules of A/E EASE or if you press **Esc**, you may see your input flashing on the screen. In addition to flashing, the program may be "beeping" at you. This means that the macro encountered something unexpected. To remedy the situation, please use the following procedure:

1. Hold the **Ctrl** key down and press the **Break** key.
2. Press the **Esc** key.
3. Hold the **Ctrl** key down and press the **F6** key until the letters "MAC" disappear from the bottom of the screen.
4. Press the **F10** key, then select **Q** for quit, and **Y** for yes until you reach the Enable main menu.
5. Hold down the **Shift** key and press **F10** to start the A/E EASE menu.

If you have not broken any rules and you cannot make the program work, you may have to restart your computer. Please go to the next page for explanation of this procedure.

Why Has My Computer Locked Up?

On occasion, computers just behave improperly for no reason. Large computers are said to "go down." Microcomputers are said to "lock up." The microcomputer either will not respond or will only beep at any key that you press.

Most microcomputers will lock up as a result of "memory problems." These are due to the limitation on the amount of actual computing space that exists in any computer (i.e., the RAM).

If you put Enable/A/E EASE through its paces for an extended period of time, the table that allows the computer to keep track of which part of the RAM space is doing what activities will become confused. If you become stuck, please continue to the next section.

If you use A/E EASE in this way, you may be able to anticipate how long your computer will take before the error occurs. You can exit A/E EASE and then return to the program. When you restart the program, the RAM table will be reset.

How Do I Get Unstuck?

In the Enable software, the computer will sometimes issue messages that allow you to close some of your files, retry the current operation, or abort the program. Murphy's Law usually dictates aborting the program.

If no message is given and the computer will not respond, try restarting your computer by holding down three keys in the following sequence: Ctrl Alt Del. Then release the keys.

The computer may take a few minutes to restart but if it does not, turn the machine off. Wait at least 1 minute prior to turning the machine back on (in the case of some portable computers, you may need to wait up to 5 minutes).

Cautions for A/E EASE Program Use

Read the Help Messages Before You Make a Selection

Before selecting any option in EASE for the first time or before becoming familiar with it, read the help message for that option. To do this, use the cursor keys to move the highlighted bar to the option in question and then press the F1 key. You will see a message that describes the feature and what will happen after you select it.

In some cases, choosing a menu option will simply produce another menu. When this is the case, F1 help messages will become more specific as you approach an executable option. To cancel the help message, press F1 again or any other key. The best habit to develop is to press F1 to call and cancel help messages. F1 can be regarded as a toggle for help.

The Most Important A/E EASE Command

The most critical command in EASE is the key combination Ctrl F6, which means holding down the Ctrl, or Control, and then pressing the F6 key. On most keyboards, these keys are adjacent, making it easy to roll your left index and middle fingers across the two keys. This command is used when you have scrolled through the database.

If the F6 key is pressed before Ctrl, and you are in a word-processing document (or "note" as it is often termed in EASE), you will see a prompt at the top of the screen reading, "Enter String to Find:" In this situation, simply press Esc (Escape) to cancel that message and then retry the Ctrl F6 combination.

If at any time you find yourself at a point in EASE where you do not know what to do next or do not know where you are, try pressing Ctrl F6. This command is a circular type of command. That is, it takes you forward to the next step or back to the previous one as appropriate. When in doubt, press Ctrl F6.

A Message to Ignore

Several EASE features display databases on the screen. When a database is displayed and no menu is present such as when you select L to *Leave the Menu to Select*, you will see an Enable message at the bottom of the screen. This message reads: "Use cursor keys to page through display. Press ESC when done." This Enable message conflicts with A/E EASE programs.

Due to programming within Enable, we were not able to change this message for Version 1.0. Do NOT press Esc (Escape). Instead, after you have moved the cursor to the desired line, press the Ctrl F6 key combination. If you do happen to press Esc, the best solution is to press the End key. This will usually undo or reverse the effect of Esc. Then press Ctrl F6 to proceed with the next step in A/E EASE.

Program Design Assumptions

If you generate a report, EASE will overwrite a file named REPORT.WPF, eliminating the output from any report you generated prior to the current report. Therefore, if at any time you desire to save output for later recall, you must save the file yourself. This is done by pressing the Alt F10 key combination and selecting **Change Options** in order to give the file a name of your choice.

When you do assign a name to a file, it is a good idea to put that filename in one of the EASE libraries before you forget the name or contents of the file. The computer requires that you give each file a unique name (a maximum of eight characters). EASE allows you to put those names in a library for later recall so that you do not have to guess at the name and/or nature of previously created files.

Deleting Database Records

You should never remove all records from a database. If you do this, the A/E EASE menu will not be able to operate as expected. To safely remove unwanted records from your databases, you should add one new record and then delete the unwanted records. Remember, you must keep at least one record in every database for A/E EASE to operate.

CHAPTER 4
INSTALLATION AND STARTUP

General Requirements

Specific equipment needs are listed in the next two sections. This section describes the general capabilities required to execute A/E EASE. Minimum requirements are:

Hardware: IBM PC/XT or AT compatible
640 KB RAM
Hard Disk Drive with 2.0 MB free disk space
One 360-KB floppy disk drive

Software: Enable Version 1.15
A/E EASE Version 1.1

One person in your office should be designated as the A/E EASE point of contact. This person will be "resident expert" in EASE and Enable. It is essential for implementation of the A/E EASE program that every office have such an individual.

Software for the A/E EASE Program

Required:

MS-DOS Version 3.1 or better (Microsoft, Inc., Microsoft World Headquarters, Redmond, WA).

Enable Version 1.15 (Zenith) (The Software Group, Northway, 10 Executive Park, Ballston Lake, NY 12019).

The Enable Software product is available on Air Force Contract No. F19630-86-D-0002 with Zenith Data Corporation for \$87. If you need assistance, please contact the A/E EASE project group at USA-CERL. A limited number of copies of Enable are available upon request and can be shipped with a pilot test version of A/E EASE.

Recommended Hardware

A/E EASE operates on IBM-compatible computer equipment and requires that at least 2.0 MB be free on a hard disk drive; 640 KB RAM is recommended. A color graphics card with or without the color monitor is required. Rapid processing speed and enhanced color display are considered necessary for the A/E EASE program. Three profiles for recommended hardware configurations follow.

Profile 1:

- COMPAQ Deskpro 286 Model 3 System
- MS-DOS Version 3.1 or better
- 1.2-MB diskette drive
- 360-KB diskette drive
- 80287 math coprocessor chip
- 6 8-MHZ dual speed internal clock
- 2.2-MB memory board
- Serial/parallel board
- Hayes 1200B Internal Modem
- COMPAQ Enhanced Graphics Adapter
- COMPAQ Enhanced Color Display
- Epson LQ-800 Parallel Printer

Profile 2:

- IBM AT system
- IBM PC-DOS Version 3.1 or better
- 1.2-MB diskette drive
- 360-KB diskette drive
- 80287 math coprocessor chip
- Internal clock
- 640-KB memory
- Serial/parallel board
- Hayes 1200B Internal Modem
- IBM Enhanced Graphics Adapter w/Graphics Memory Expansion
- IBM Enhanced Color Display
- Epson FX-85 Parallel Printer

Profile 3:

Zenith Z-248 system
40-MS access hard disk
MS-DOS Version 3.1 or better
360-KB diskette drive
80287 math coprocessor chip
640-KB memory board
Serial/parallel board
Hayes 1200B Internal Modem
ZENITH Enhanced Graphics Adapter
ZENITH Enhanced Color Display
Epson FX-85 Parallel Printer

Using Other Programs

Programs use RAM in two different ways. Some programs use only a small portion of this space and bring information back and forth from a floppy or hard disk. Others, called "memory resident" programs, require up to 30 percent of your computer's processing space because a copy of the program has been copied to the RAM. Sidekick and Windows are two popular memory resident programs.

During the development of EASE, several memory resident programs were run concurrently with Enable and EASE. Although there were generally no problems, sometimes these programs attempted to use the computing power that the other program was using. If you use memory resident programs, please be aware that all versions of EASE, while not memory resident, will require at least 500 KB of memory.

If you encounter problems, consult Section 3.3.

Installation

Installation of the A/E EASE application program will require that several directories be created and files copied. The installation instructions are provided for both Enable and A/E EASE. If you already have installed the Enable program, proceed to Installation at A/E EASE Version 1.1. Please note that, as in other sections of this manual, the keys that you should type are noted in boldface.

Installation of Enable Version 1.15

- Step 1. Type `cd c:\` and press the Enter key.
- Step 2. Type `md c:\enable` and press the Enter key.
- Step 3. Type `cd c:\enable` and press the Enter key.
- Step 4. Insert the "Tutorial Distribution Disk" into drive A: and close the drive door.
- Step 5. Type `copy a:*.*` and press the Enter key.
- Step 6. Remove the "Tutorial Distribution Disk" from drive A:.
- Step 7. Insert the "Utility Distribution Disk" into drive A: and close the drive door.
- Step 8. Type `copy a:*.*` and press the Enter key.
- Step 9. Remove the "Utility Distribution Disk" from drive A:.
- Step 10. Insert the "Operation Distribution Disk" into drive A: and close the drive door.
- Step 11. Type `copy a:*.*` and press the Enter key.
- Step 12. Remove the "Operation Distribution Disk" from drive A:.
- Step 13. Insert the "System Distribution Disk" into drive A: and close the drive door.
- Step 14. Type `copy a:*.*` and press the Enter key.
- Step 15. Remove the "System Distribution Disk" from drive A:.
- Step 16. Insert the "Spell Checker/Help Message Distribution Disk" into drive A: and close the drive door.
- Step 17. Type `copy a:*.*` and press the Enter key.

- Step 18. Remove the "Spell Checker/Help Message Distribution Disk" from drive A:.
- Step 19. Insert the "Print Drivers/Install Disk" into drive A: and close the drive door.
- Step 20. Type `a:install` and press the Enter key.
- Step 21. Press the Enter key twice as prompted.
- Step 22. Type `h` and press the Enter key for hard disk installation.
- Step 23. Type `c:\ease` and press the Enter key.
- Step 24. Type `y` if the information is correct.
- Step 25. Press the Enter key.
- Step 26. Follow the instructions to install up to three printers. Enter the key corresponding to the printer you want. When finished, press the Enter key.
- Step 27. Press the Enter key.

Installation of A/E EASE Version 1.1

- Step 1. Type `cd c:\` and press the Enter key.
- Step 2. Type `md c:\ease` and press the Enter key.
- Step 3. Type `md c:\util` and press the Enter key.
- Step 4. Type `cd c:\ease` and press the Enter key.
- Step 5. Insert the "A/E EASE Version 1.1" disk into drive A: and close the drive door.
- Step 6. Type `copy a:*.*` and press the Enter key.
- Step 7. Remove the "A/E EASE Version 1.1" disk from drive A:.
- Step 8. Type `cd c:\util` and press the Enter key.
- Step 9. Insert the "EASE utilities" disk into drive A: and close the drive door.
- Step 10. Type `copy a:*.*` and press the Enter key.
- Step 11. Remove the "EASE Utilities Disk" from drive A:.

Installation

Installation of the A/E EASE application program will require that several directories be created and files copied. The installation instructions are provided for both Enable and A/E EASE. If you already have installed the Enable program, proceed to Installation at A/E EASE Version 1.1. Please note that, as in other sections of this manual, the keys that you should type are noted in boldface.

Installation of Enable Version 1.15

- Step 1. Type `cd c:\` and press the Enter key.
- Step 2. Type `md c:\enable` and press the Enter key.
- Step 3. Type `cd c:\enable` and press the Enter key.
- Step 4. Insert the "Tutorial Distribution Disk" into drive A: and close the drive door.
- Step 5. Type `copy a:*.*` and press the Enter key.
- Step 6. Remove the "Tutorial Distribution Disk" from drive A:.
- Step 7. Insert the "Utility Distribution Disk" into drive A: and close the drive door.
- Step 8. Type `copy a:*.*` and press the Enter key.
- Step 9. Remove the "Utility Distribution Disk" from drive A:.
- Step 10. Insert the "Operation Distribution Disk" into drive A: and close the drive door.
- Step 11. Type `copy a:*.*` and press the Enter key.
- Step 12. Remove the "Operation Distribution Disk" from drive A:.
- Step 13. Insert the "System Distribution Disk" into drive A: and close the drive door.
- Step 14. Type `copy a:*.*` and press the Enter key.
- Step 15. Remove the "System Distribution Disk" from drive A:.
- Step 16. Insert the "Spell Checker/Help Message Distribution Disk" into drive A: and close the drive door.
- Step 17. Type `copy a:*.*` and press the Enter key.

- Step 18. Remove the "Spell Checker/Help Message Distribution Disk" from drive A:.
- Step 19. Insert the "Print Drivers/Install Disk" into drive A: and close the drive door.
- Step 20. Type `a:install` and press the Enter key.
- Step 21. Press the Enter key twice as prompted.
- Step 22. Type `h` and press the Enter key for hard disk installation.
- Step 23. Type `c:\ease` and press the Enter key.
- Step 24. Type `y` if the information is correct.
- Step 25. Press the Enter key.
- Step 26. Follow the instructions to install up to three printers. Enter the key corresponding to the printer you want. When finished, press the Enter key.
- Step 27. Press the Enter key.

Installation of A/E EASE Version 1.1

- Step 1. Type `cd c:\` and press the Enter key.
- Step 2. Type `md c:\ease` and press the Enter key.
- Step 3. Type `md c:\util` and press the Enter key.
- Step 4. Type `cd c:\ease` and press the Enter key.
- Step 5. Insert the "A/E EASE Version 1.1" disk into drive A: and close the drive door.
- Step 6. Type `copy a:*.*` and press the Enter key.
- Step 7. Remove the "A/E EASE Version 1.1" disk from drive A:.
- Step 8. Type `cd c:\util` and press the Enter key.
- Step 9. Insert the "EASE utilities" disk into drive A: and close the drive door.
- Step 10. Type `copy a:*.*` and press the Enter key.
- Step 11. Remove the "EASE Utilities Disk" from drive A:.

Configuring Your Computer for A/E EASE

Configuring your computer to run the A/E EASE program is mandatory. The most important item required in the configuration is to set the DOS path. This procedure is essential for the smooth operation of A/E EASE. When you "boot" your computer, there is a file that allows this path to be set automatically. You will need to modify this file in one of the following ways: (1) use the DOS text editor edlin, (2) use a word processor that can exchange retrieve, modify, and save ASCII files. or (3) use the file provided with the program. If you choose to do it yourself, you must review the contents of the autoexec.bat file which is provided with the A/E EASE program.

To use the autoexec.bat file that has been created for you in the A/E EASE program, please follow these steps:

- Step 1. Type `cd c:\` and press the Enter key.
- Step 2. Type `copy autoexec.bat autoexec.old` and press the Enter key.
- Step 3. Type `copy c:\util\autoexec.bat` and press the Enter key.

If you have any questions regarding the A/E EASE configuration necessary, please call the authors at USA-CERL (see the front of this manual for telephone numbers).

A/E EASE Direct Startup

We have created another version of the autoexec.bat file that allows the A/E EASE program to start when the computer is booted. If you wish to use this type of format, do the following steps instead of those above:

- Step 1. Type `cd c:\` and press the Enter key.
- Step 2. Type `copy autoexec.bat autoexec.old` and press the Enter key.
- Step 3. Type `copy c:\util\autoexec.xxx` and press the Enter key.
- Step 4. Type `copy autoexec.xxx autoexec.bat` and press the Enter key.
- Step 5. Type `erase autoexec.xxx` and press the Enter key.

Again, if you have any questions regarding the A/E EASE configuration, please contact USA-CERL.

Starting A/E EASE

Provided that A/E EASE and Enable have been loaded onto the hard disk storage of your computer, you will be able to begin managing with A/E EASE.

There are two ways in which A/E EASE can be started. In the first, the program will begin as soon as you start your computer. The commands to begin the program are contained in a file which is run when you turn on your computer.

If, when you turn on the power to your computer A/E EASE does not start automatically, you will have to perform the following steps:

- Step 1. Type `cd c:\ease` and press the Enter key.
- Step 2. Type `ease` and press the Enter key.

CHAPTER 5
USING THE A/E EASE PROGRAM

Opening Menu Choices

If you have followed the startup command guidelines, you should arrive at the A/E EASE Opening Menu. WELCOME. The opening menu consists of the Corps Castle, Title, and most importantly, the seven options from which to choose. These options (or "menu selections") are:

A/E Liability
Meetings, etc.
Phone Directory
Tasks and To-Do
Save Database
Call ACASS
Exit to DOS

The A/E EASE opening menu is the first of many menus in the A/E EASE program. The opening menu appears as a block in the bottom center of the screen. The selections are blue letters on a white background. You'll notice that the first item is highlighted. The letters are white and the block around them is blue. This indicates that the item highlighted is the one currently selected.

To move to a different menu selection, press the up or down arrow key. Your new selection is shown by the moving highlighted bar. You can also move the highlighted bar to the selection you want by pressing the first letter of the item.

Help is available on all selections by pressing the function key F1. After you have read the Help message press the function key, F1, again and the message will disappear. You can use the F1 key to turn the help on and off for any selection of any menu in A/E EASE. It is HIGHLY recommended that you read all help messages prior to selecting any unfamiliar feature.

To use a feature, highlight the selection and press the Enter key. This key may also be called the Return on some computers. Each menu option is described in detail in this chapter.

Once you have moved past the initial A/E EASE menu, help is also available. To remind you about the help features, each menu has the message Help F1 in the upper right-hand corner. Use the function key F1 to view all help messages. When you are finished reading a particular help message, press F1 again and the message will disappear.

A/E Liability Management System

Selecting A/E Liability will allow you to use the first version of the A/E Liability Management and Analysis System. Suggestions for future enhancements will be greatly appreciated.

This first option is described by the menu that appears above the A/E EASE opening menu. The following selections are available:

A/E Liability Management and Analysis System	Help F1
Enter Data	
Summary Reports	
Graphic Reports	
Previous Menu	

Remember to use the help feature built into A/E EASE to explore each of these choices. To help you remember that help is available, the message Help F1 appears in the upper right of every menu.

Another feature of every menu, except for the opening menu, is the Previous Menu selection. This selection will allow you to move back through the menus to return to the opening menu.

As you can see by the menu selections, three options are included in the A/E Liability Management and Analysis System: Enter Data, Summary Reports, and Graphic Reports. These selections will allow you to work with the data submitted quarterly on ENG FORM 4858-R, "Summary of A-E Liability."

This menu could be expanded in the future to include other data regarding A/E Liability. One example is to include ENG FORM 4858A-R, "Active A-E Liability Pursuit Actions."

Adding an Entry

To add a new Summary of A-E Liability report into the database, you should use the arrow keys to highlight the Enter Data selection and then press the Enter key. You will notice that the program has told you that it is opening the database or "Library" through a message on the bottom line of the screen.

To allow you faster access to information, the A/E EASE program will display the most recently entered data on the screen. In addition, the next A/E EASE menu will appear at the bottom of the screen. Please do NOT press any keys until the menu appears.

To remind you of the help features, the message Help F1 is provided in the upper right of the screen. Remember to press the F1 key prior to using any option.

The selections available through the Data Entry Menu are:

Data Entry Menu Help F1

Add an Entry
Leave Menu to Select
Revise Selected Entry
Delete Selected Entry
Previous Menu

Notice first that the selection Previous Menu appears just as it did on the previous menu. This selection will return you to the A/E Liability Management and Analysis System menu.

Please remember that when you leave the menu to select, you must use Ctrl-F6 to return to the menu. You should ignore the message "press the ESC key." For further information, please consult Section 3.5, Cautions for A/E EASE Program Use.

If you wish to enter the information from a new report form into the computer, move the arrow key to the Add an Entry selection and press the Enter key. The program will produce a screen that looks just like the paper form of the report. Notice that the information should be entered in the same place as on the hard copy form.

Figure 2 is a copy of ENG FORM 4858-R as revised. Figure 3 shows the data entry screen used to enter the information for this report into the A/E EASE system. You may want to refer to these two forms while reading the following sections.

STATUS OF A-E LIABILITY (ER 715-1-10) See Reverse For Instructions		RCS. DAEN-ECE-10
TO CDR USACE (DAEN-ECE-8) WASH DC 20314-1000	FROM:	____ QUARTER FY _____
1. TOTAL NUMBER OF CONSTRUCTION CHANGE ORDERS IN THIS QUARTER.		/
INITIAL REVIEW		
2. "DESIGN DEFICIENCY" CHANGE ORDERS IN QUARTER.		/
3. CARRYOVER FROM PREVIOUS QUARTER (Previous Item 9).		/
4. AVAILABLE FOR ACTION DURING QUARTER (2 + 3)		/
5. DECISIONS OF NO DEFICIENCY.		/
6. DESIGN DEFICIENCY BUT NO LIABILITY.		/
7. DECISIONS TO PURSUE RECOVERY ACTION.		/
8. TOTAL CASES INITIALLY REVIEWED (5 + 6 + 7).		/
9. CARRY TO NEXT QUARTER (4 - 8).		/
STATUS OF PURSUIT ACTIONS		
10. DECISIONS TO PURSUE (Item 7).		/
11. CARRY OVER FROM PREVIOUS QUARTER (Previous Item 18).		/
12. PURSUIT ACTIONS ACTIVE DURING QUARTER (10 + 11) (Individual Status Reports Attached).		/
13. PURSUIT ACTIONS DROPPED (No Deficiency). ()		/
14. PURSUIT ACTIONS DROPPED (No Liability). ()		/
15. CASH SETTLEMENTS (Number /\$). ()		/
16. CONSTRUCTION FIXES BY A-E (No./\$). ()		/
17. TOTAL FINAL ACTIONS ON PURSUIT CASES (13 + 14 + 15 + 16)()		/
18. CARRY OVER TO NEXT QUARTER (12 - 17).		/
REMARKS		
NAME AND TELEPHONE NO. OF PERSON TO CONTACT FOR ADDITIONAL INFORMATION		DATE

ENG FORM 4858-R, Feb 86

EDITION OF OCT 83 IS OBSOLETE.

(Proponent: DAEN ECE)

Figure 2. Engineering Form 4858-R, "Status of A-E Liability."

STATUS OF A/E LIABILITY for __ in __ for _ QTR of FY __ (____)

1. Total Changes This Quarter.		0	\$	0
2. "Design Deficiency" Changes This Quarter.		0	\$	0
3. Carryover From Previous Quarter.		0	\$	0
4. Available for Action During Quarter (2+3).		0	\$	0
5. Decisions of No Deficiency.		0	\$	0
6. Decisions of No Liability.		0	\$	0
7. Pursuits (#,\$).		0	\$	0
8. Total Cases Initially Reviewed (5+6+7).		0	\$	0
9. Carryover to Next Quarter (4-8).		0	\$	0
10. Decisions to Pursue (Item 7).		0	\$	0
11. Carryover From Previous Quarter (Prev Item 17).		0	\$	0
12. Actions Active During Quarter (7+11).		0	\$	0
13. Actions Dropped (No Deficiency).	\$	0	\$	0
14. Actions Dropped (No Liability).	\$	0	\$	0
15. Settlements (#,adm\$K,dmg\$K).	\$	0	\$	0
16. Construction Fixes (\$K).	\$	0	\$	0
17. Final Actions on Pursuit Cases.		0	\$	0
18. Carryover to Next Quarter.		0	\$	0

Figure 3. Data Entry Screen for ENG FORM 4858-R.

You may have noticed that the only difference between the screen and the form is the layout of the top line of the data entry screen. You will have to enter the organizational code of the District and Division that submitted the form. The first block on the top line of the form, following the word "for," is the District code block. The second block on the top line of the form, following the word "in," is the Division code block.

As you enter data, you may notice several features of the data entry screen that make this task efficient. The first is that if you fill up a block, you will automatically move to the next block. For example, if, in the District block which is three characters long, you enter the organizational code SWD, the block will be filled and you will automatically move to the next block, the Division code.

Another time-saving feature is that blocks which are the result of addition or subtraction do not need to be entered. The computer automatically calculates the arithmetic and skips over the block. For example, if, for the number of "Design Deficiency Change Orders" you enter 100 and press the down arrow key, and for "Carryover From Previous Quarter" you enter 100 and again press the down arrow key, you will find that you skipped over the block called "Available for Action During Quarter (2+3)" and that the computer entered "200" in the block. Any block that automatically adds information based on data you provide is noted by a parenthetical to explain the calculations that the computer will perform.

If you are adding only one item to the database and would like to return to the Data Entry menu, hold down the Ctrl key and press F6, then release both keys.

If you have more than one form to enter, press the F10 key to display a menu of selections along the top of the screen. To add the data just typed and continue to add the next sheet, press N for Next. The menu will disappear and you will be able to continue with your next entry. Repeat this procedure for every data form you need to input. Once all the data has been entered into the computer, hold down the Ctrl key and press F6, then release both keys.

Revising or Deleting the Selected Entry

After you have entered the data, you may want to change or delete an item. Notice that one of the data records has been highlighted in a bolder color. As in the A/E EASE menus, this highlight means that this item is the currently selected data record. You can modify, **Revise Selected Entry**, or delete, **Delete Selected Entry**, the highlighted record from the menu by using the arrow keys and pressing the Enter key at the appropriate selection.

You should always leave at least one data record in the database. If all records are deleted, then the customized A/E EASE menus will not operate. The recommended procedure for removing the initial data records which come with A/E EASE is to remove all records EXCEPT ONE, then begin to add your new records. After you have added a few records, then you may delete the last original record.

Selecting a Different Data Element

If you wish to select a different data record, you may do so by pressing the Leave the Menu to Select option. There are three important items to remember:

1. IGNORE THE MESSAGE AT THE BOTTOM of the screen regarding the Esc key. If you do press that key, you may have to restart the program or reboot your computer.
2. Use the arrow keys to move through the data. You can move both vertically and horizontally, depending on your location (i.e., there may be information to the left or right of your initial location).
3. Hold down Ctrl and press F6 to return to the current menu.

Obtaining Summary Reports

Once all of your data has been entered, you may want to print a report to begin reviewing USACE, Division, and/or District A/E Liability programs.

Begin by returning to the previous menu. From that menu, select Summary Reports. Nine standard reports are available.

The menu for Summary Reports looks somewhat different than the other menus as shown below:

Previous Menu	Summary Report Menu	Help F1
Corpswide:		
A: CMDRS Rpt	B: FY Total	C: Non-Responsive
For Divisions:		
D: CMDRS Rpt	E: Historical	F: Program Comparison
For Districts:		
G: FY Total	H: Historical	I: Quarterly Report

Notice that the selection Previous Menu again appears on the menu in the upper left-hand side of the menu. This selection will return you to the A/E Liability Management and Analysis System menu.

In this menu, reports are denoted by the letters A through I. The additional information "Corpswide," "For Divisions," and "For Districts" was placed on the menu to help you remember the function of the reports on the line below. For example, the reports in the line just under the "For

Divisions" message will allow you to obtain reports on the Division which you select.

Although the format of the menu is different, the arrow keys will still move the highlighted bar to your destination. To help you remember which report you want to run, A/E EASE has built in a very important feature. As you use the arrow keys to move from one selection to another, you will notice that below the report menu is a list of the questions you would need to answer if that report is chosen. For example, if you used the arrow keys to move the highlighted bar to the report E: Historical, you would see:

```
Please enter the beginning fiscal year ... >      —
Please enter the ending fiscal year ..... >      —
      EUD  HND  LMVD  MRD  NAD  NCD  NED
      NPD  ORD  PODV  SPD  SAD  SWD
Please select the division that you want >      —
```

Based on these questions, you can see that this report will provide data on a single Division's performance over a range of years. As you press the arrow keys to other reports, the questions will change to allow you to assess the usefulness of each report in providing you with the information you need.

Since this A/E EASE version is the initial release for the A/E Liability program, your comments regarding the development of new or enhanced types of reports are encouraged. If needed, we can instruct you on how to create "ad hoc" reports through the Enable software program.

Report Formats and Sample Reports

There are three standard formats for reports. These formats allow you to display the data entered on the Summary of A-E Liability report. These formats are:

1. Program historical comparison.
2. Program comparison.
3. ENG FORM 4858-R.

Requiring you to recall only three formats is a very useful feature of the A/E Liability Management and Analysis System since, once the system is fully operational, this module of A/E EASE may be used only once each quarter. Figure 4 shows what data goes on each report.

Figures 5 through 13 are example printouts for each of the nine reports available. Since this program was created without a large amount of data, these reports may not show the system's complete potential.

<u>Report</u>	<u>Description</u>	<u>Format</u>	<u>Data Which Appears</u>
---------------	--------------------	---------------	---------------------------

Corpswide:

A	CMDRS Rpt	1	range of years
B	FY Total	2	total for Corps
C	Non-Responsive	3	quarterly report

Divisions:

D	CMDRS Rp	2	all divisions
E	Historical	1	range of years
F	Prgm Comparison	3	quarterly review

Districts:

G	FY Total	2	one year
H	Historical	1	range of years
I	Quarterly Report	3	ENG form 4858-R

LEGEND:

Report: this refers to the letter of the report which appears on the **Summary Reports** menu.

Description: this refers to the description of the report which appears on the **Summary Reports** menu. These descriptions may be changed very quickly as necessary to customize the system for you.

Format: this refers to which of the three report formats groups this report falls.

Data Which Appears: This refers to the selection of data which appears on the report.

Figure 4. Standard Reports' Organization.

CORPS OF ENGINEERS
A/E LIABILITY PROGRAM SUMMARY

	FY 84	FY 85	FY 86	FY 87
Design Deficiencies	0	0	1374	1553
Cases Pursued/ Damage Estimate	0 / \$ 0	0 / \$ 0	69 / \$ 9170	90 / \$ 0
Cases Resolved/ Funds Recovered	0 / \$ 0	0 / \$ 0	44 / \$ 260	22 / \$ 282

Figure 5. Report "A."

CORPSWIDE STATUS OF A/E LIABILITY FOR FY 86

1. Total Changes This Quarter.		0	\$	0
2. "Design Deficiency" Changes This Quarter.	1374		\$	0
3. Carry Over From Previous Quarter.	0		\$	0
4. Available For Action During Quarter (2+3).	1374		\$	0
5. Decisions of No Deficiency.	0		\$	0
6. Decisions of No Liability.	0		\$	0
7. Pursuits (#,\$).	69		\$9,170,190	
8. Total Cases Initially Reviewed (5+6+7).	69		\$9,170,190	
9. Carry Over to Next Quarter (4-8).	1305		(\$9,170,190)	
10. Decisions to Pursue (Item 7).	69		\$9,170,190	
11. Carry Over From Previous Quarter (Prev Item 7).	0		\$	0
12. Actions Active During Quarter (7+11).	69		\$9,170,190	
13. Actions Dropped (No Deficiency).	\$	0 0	\$	0
14. Actions Dropped (No Liability).	\$	0 0	\$	0
15. Settlements (#,adm\$K,dmg\$K).	\$	0 43	\$	242,200
16. Construction Fixes (\$K).	\$	0 1	\$	18,000
17. Final Actions on Pursuit Cases.		0	\$	260,000
18. Carry Over to Next Quarter.		0	\$8,910,190	

Figure 6. Report "B."

A/E LIABILITY QUARTERLY EXCEPTION REPORT
for the 1st Quarter of FY 87

	<u>No.</u>	<u>Office</u>	<u>Division</u>	
Database ERROR	!!	----	SAW	SAW
				---This record was Duplicated

There are no offices that have not had their 1st quarter FY87 record in the 4858-R database edited. This would indicate that all offices have complied with the reporting requirements during the period. Also, there is one error in the database 4858-R during the 1st quarter of FY87. Please use menu "Data Entry" to check these values.

Figure 7. Report "C."

A/E LIABILITY DIVISION PROGRAM, FISCAL YEAR SUMMARY

Divn	Total Changes	Design Deficiencies	New Pursuit Actions (#/dmg)		Settlements (#/dmg+adm)	
EUD	0	16	0/\$	0	0/\$	0
HND	0	0	0/\$	0	0/\$	0
LMVD	0	16	0/\$	0	1/\$	7,000
MRD	0	120	10/\$	311,143	10/\$	18,000
NAD	0	205	2/\$	119,000	5/\$	5,000
NCD	0	7	0/\$	0	0/\$	0
NED	0	0	1/\$	49,000	0/\$	0
NPD	0	216	8/\$	164,000	7/\$	18,000
ORD	0	87	1/\$	7	1/\$	14,000
PODV	0	272	6/\$	109,000	3/\$	32,000
SAD	0	174	24/\$	8,370,000	3/\$	121,000
SPD	0	198	5/\$	31,000	4/\$	9,000
SWD	0	63	11/\$	17,000	10/\$	36,000

There have been 0 changes with 1374 alleged design deficiencies; 69 are being pursued. 44 cases have been resolved with \$260,000 damages and \$0 admin costs recovered.

Figure 8. Report "D."

CORPS OF ENGINEERS
 SWD DIVISION A/E LIABILITY PROGRAM SUMMARY
 For FY's 86 to 87

	FY 86	FY 87
Design Deficiencies	63	18
Cases Pursued/ Damage Estimate	11 / \$ 17	4 / \$ 0
Cases Resolved/ Funds Recovered	10 / \$ 36	4 / \$ 4

Figure 9. Report "E."

A/E LIABILITY DIVISION PROGRAM FOR THE 1st QUARTER of FY 86

Divn	Total Changes	Design Deficiencies	New Pursuit Actions (#/dmg)		Settlements (#/dmg+adm)	
EUD	168	28	0/\$	0	0	
HND	0	0	0/\$	0	0	
LMVD	11	1	0/\$	0	1/\$	7,500
MRD	677	268	6/\$	0	1/\$	3,000
NAD	251	95	1/\$	0	0/\$	0
NCD	46	2	0/\$	0	0/\$	0
NED	38	0	0/\$	0	0/\$	0
NPD	567	124	0/\$	0	1/\$	0
ORD	325	45	3/\$	0	1/\$	8,500
PODV	1126	591	74/\$	0	9/\$	256,049
SAD	340	102	0/\$	0	2/\$	2,750
SPD	559	279	2/\$	0	3/\$	9,000
SWD	128	18	4/\$	0	4/\$	4,432

There have been 4236 changes with 1553 alleged design deficiencies; 249 are being pursued. 10 cases have been resolved with \$282,231 damages, with \$0 admin costs, and \$282,231 fixes recovered.

Figure 10. Report "F."

A/E LIABILITY DIVISION PROGRAM, FISCAL YEAR SUMMARY

Divn	Total Changes	Design Deficiencies	New Pursuit Actions (#/dmg)		Settlements (#/dmg+adm)
NPA	0	36	3/\$	141,000	4/\$ 18,000
NPP	0	37	1/\$	0	0/\$ 0
NPS	0	138	4/\$	23,000	3/\$ 0
NPW	0	5	0/\$	0	0/\$ 0

There have been 0 changes with 216 alleged design deficiencies; 8 are being pursued. 7 cases have been resolved with \$18,000 damages and \$0 admin costs recovered.

Figure 11. Report "G."

CORPS OF ENGINEERS
 SAS DISTRICT A/E LIABILITY PROGRAM SUMMARY
 FOR FY85 to FY87

	FY85	FY86	FY87
Design Deficiencies	0	110	83
Cases Pursued/ Damage Estimate	0 / \$ 0	3 / \$ 54	0 / \$ 0
Cases Resolved/ Funds Recovered	0 / \$ 0	2 / \$ 116	2 / \$ 256

Figure 12. Report "H."

CORPSWIDE STATUS OF A/E LIABILITY FOR FY86

1.	Total Changes This Quarter.		510	\$		0
2.	"Design Deficiency" Changes This Quarter.		159	\$		0
3.	Carryover From Previous Quarter.		37	\$		0
4.	Available for Action During Quarter (2+3).		196	\$		0
5.	Decisions of No Deficiency.		13	\$		0
6.	Decisions of No Liability.		66	\$		0
7.	Pursuits (#,\$).		6	\$		0
8.	Total Cases Initially Reviewed (5+6+7).		85	\$		0
9.	Carryover to Next Quarter (4-8).		111	\$		0
10.	Decisions to Pursue (Item 7).		6	\$		0
11.	Carryover From Previous Quarter (Prev Item 17).		11	\$		0
12.	Actions Active During Quarter (7+11).		17	\$		0
13.	Actions Dropped (No Deficiency).	\$	0	\$		0
14.	Actions Dropped (No Liability).	\$	0	\$		0
15.	Settlements (#,adm\$K,dmg\$K).	\$	0	\$	1	3,000
16.	Construction Fixes (\$K).	\$	0	\$	0	0
17.	Final Actions on Pursuit Cases.		1	\$		3,000
18.	Carryover to Next Quarter.		17	\$		(3,000)

Figure 13. Report "I."

Executing A/E Liability Reports

Once you have looked at the example reports and decided which one you want to produce, use the arrow keys to highlight the desired report and press Enter. The program will prompt you for information about the Division, District, Fiscal Year, and Quarter, depending on the report selected.

After you have obtained a report, follow the instructions on the screen to do one of the following:

1. Return to the previous menu Ctrl F6.
2. Print Alt F2.
3. Save Alt F10.
4. Use arrow keys to view data.

To help incorporate these reports into your office procedure, take a moment to review some assumptions that governed the development of A/E EASE:

1. Output of reports and notes is to Enable's word-processing format.
2. Report files are generally not saved. A/E EASE will use the file REPORT.WPF for all reports.

If you wish to save the report under another name, press the two keys Alt F10 at the same time. Then press the letter c for Change Options and follow the prompts for the necessary information.

It is a very good idea to place this filename in one of the libraries immediately. Use the data entry screen for either the meetings or telephone number data to associate the filename with some item that you will remember.

Graphics Library

Once you have obtained a report from the information entered through the reports available through A/E EASE, you may wish to display the results graphically. To access the A/E EASE graphic features, you will first have to go to the A/E Liability Management and Analysis System menu. You can access this menu one of the following ways:

1. Backtrack from your previous (Add an Entry or Summary Reports) menu by using the arrow keys to highlight the Previous Menu selection and then pressing the Enter key.

OR

2. Select A/E Liability from the A/E EASE opening menu by using the arrow keys to highlight the A/E Liability selection and pressing the Enter key. Once you are at the A/E Liability menu, you can run Graphic Reports by moving the highlighted bar over the selection and pressing the Enter key.

The next screen you see will be very similar to the one you saw after choosing to Add an Entry for the Status of A-E Liability report form. The menu consists of two parts. The first is the listing of the most recent reports that you have created. This listing appears along the top portion of the screen. To remind you that A/E EASE is preparing to display that information, a message Opening Graphic Library . . . is provided on the bottom line of the screen.

The second item you will see on the screen is the menu. Like the menu used to add data, the graphics menu appears at the bottom right of your screen. Many of the selections available are very similar to the ones you have already seen. Graphics menu options are:

Graphics Menu

Help F1

Add a Graph
Delete a Graph
Revise a Graph

View Graph at Cursor
Leave Menu to Select
Previous Menu

Remember to use the F1 key to turn on the help messages. When you are finished, press F1 again to make the messages disappear. You should read the help messages prior to making a selection until you are familiar with the function of each selection.

Please remember that when you leave the Menu to Select you must use Ctrl-F6 to return to the menu. You should ignore the message "press the ESC key." For further information, please consult Section 3.5, Cautions for A/E EASE Program Use.

Several features are important for you to understand when using the graphic reports available through A/E EASE. These are described in the following paragraphs.

Graph Data Entry

Before viewing a graph, you should first **Revise a Graph** to enter the data for each of the data points on the graph. When you move the highlighted bar to the **Revise a Graph** selection and then press the Enter key, you will be revising the graph which is highlighted in yellow on the graphics library display.

After you select the **Revise a Graph**, you will see a data entry screen. This screen is shown in Figure 14. You may want to refer to this figure as we discuss how to enter the data you want into the graph.

There are two general areas of this data entry form. The top half of the form contains heading and scale data. The bottom half contains up to 10 data points that you may enter.

While this form will be expanded later to accommodate more than 10 data points, the feature is very useful in present form. Another feature to be added is the ability to use stacked barcharts to represent multiple data points.

Although the graphics data is contained under the A/E Liability Management and Analysis System, graphs from any application can be used here.

G R A P H S

Name of graph: _____

Main title: _____

Main subtitle: _____

Horizontal title: _____

Horiz. subtitle: _____

Vertical title: _____

Vert. subtitle _____

Unit of measure for numbers (i.e. \$) ? _____

How many numbers in the graph (1-10) ? _____

What are the numbers? 1. _____ 2. _____
 3. _____ 4. _____
 5. _____ 6. _____
 7. _____ 8. _____
 9. _____ 10. _____

What do the numbers represent? 1. _____ 2. _____
 3. _____ 4. _____
 5. _____ 6. _____
 7. _____ 8. _____
 9. _____ 10. _____

Ctrl/F6 to Continue...

Figure 14. Graph Data Entry Screen.

Selecting a Different Graph

After you have entered the data into your graph, you may want to change or delete another graph. Notice that one of the graphs listed above the menu has been highlighted with a bolder color. As in the A/E EASE menus, this highlighting means that this item is the currently selected data record.

If you would rather use a different graph, select the **Leave Menu to Select** option first. This option will allow you to first use the arrow keys to highlight the graph you want and then to press **Enter** to select the new graph. There are three important items to remember:

1. IGNORE THE MESSAGE AT THE BOTTOM of the screen regarding the **Esc** key. If you do press that key, you may have to restart the program or reboot your computer.
2. Use the arrow keys to move through the data. You can move both vertically and horizontally, depending on your location (i.e., there may be information to the left or right of your initial location).
3. Hold down **Ctrl** and press **F6** to return to the current menu.

Executing Graphic Reports

Now that you have both selected the graph that you want to view and entered the appropriate data for it, you will want to **View Graph at Cursor**. Use the arrow keys to highlight your selection and press the **Enter** key.

A new menu will now appear just to the left of the **Graphics Reports** menu. The new options allow you to select the type of graph to appear on the screen. The choices are:

Graph Type	Help F1
2-D bar	
3-D bar	
Std Pie	
eXpl pie	
Line	
Prev. Menu	

Notice that, again, the **Previous Menu** and **Help F1** selections are available.

To make your selection, use the arrow keys to move the highlighted bar over the option you want and then press the **Enter** key.

After a moment, the graph will be displayed on your monitor. Notice that there is no menu at this point. The following commands are nevertheless available.

1. Return to the previous menu Ctrl F6.
2. Print Alt F2.
3. Save Alt F10.
4. Use arrow keys to view data.

Revising Graphic Data

After you return to the menu by holding down the Ctrl key and pressing F6, you will notice that the data above the menu has changed. This is a listing of the data you entered or modified to create the graph. This new menu allows you to customize the graph that you have just finished viewing. The menu options are:

```
Graph Formating Option Menu      Help F1
Display the Graph Again
Format Options for Graph
Copy Graph to Word Processing
Leave Menu to Doctor Data
Previous Menu
```

The first feature of this menu allows you to display the graph again. If, however, you want to change the graph, A/E EASE allows you complete control of not only the headings, color, and lettering styles, but also direct access to the data that was used to create the graph.

Appointments Library

Now that we have reviewed the A/E Liability System, there are several other important areas of A/E EASE that will make the program easier to use. One of these features is the **Appointments Library**. You can open this library from the A/E EASE opening menu by choosing the selection **Meetings**, etc.... Once selected, the following menu will appear:

Previous Menu	Meetings and Appointments etc..	Help F1
Add an Appointment	Today and Later Appointments	
Leave Menu to Select	Summary of All Appointments	
Revise an Appointment	View Appointment Note File	
Delete an Appointment	Check This Month's Calendar	

If you have reviewed the features of the A/E Liability System, many of these options should already be familiar. For example, if you select **Add an Appointment**, you can enter data into the **Appointments Library**. Figure 15 shows the data entry screen.

The report **Today and Later Appointments** and **Summary of All Appointments** will help you organize all of those "Post-it Notes" now put on scraps of paper or on the walls.

Check This Month's Calendar will display a copy of the current month's calendar on the screen.

Please remember that when you leave the **Menu to Select**, you must use **Ctrl-F6** to return to the menu. You should ignore the message "press the ESC key." For further information, please consult Section 3.5, Cautions for A/E EASE Program Use.

One of the best features of the **Appointments Library** is that you can keep notes about your meetings with the appointment notice. There are two steps to using note files. First, type into the appointment data entry screen the name of the note file. This may either be a new file that you want to create or one that already exists.

When you select **View Appointment Note File**, you will either create a new note file or display an existing one. You can do the following basic activities while writing or reviewing your note file:

1. Return to the previous menu **Ctrl F6**.
2. Print **Alt F2**.
3. Save **Alt F10**.
4. Use arrow keys to view more of the note file.

A P P O I N T M E N T S

Appointment: _____

Date: _____ (enter as YY/MM/DD)

Time: _____ (military time)

Location: _____

Purpose: _____

Note File: _____

Ctrl/F6 to Continue...

Figure 15. Appointment Data Entry Screen.

Individuals Library

The telephone directory contained in the "individuals library" is another feature of A/E EASE that should prove useful every day. The following activities are available when you select this option from the A/E EASE opening menu:

Previous Menu	Telephone and Individual Menu	Help F1
Add Another Person	Leave Menu to Select Person	
Revise an Entry	Individual Report	
Delete a Person	View Files for a Person	
_____	<-- Search by First Name	
_____	<-- Search by Last Name	

These options are similar to those which you have seen previously. Figure 16 shows the data entry screen that appears when you select Add Another Person.

You may have noticed that, in the Appointments Library, you were allowed only one note file for any given appointment. This library allows you up to 10 different note files which will be displayed as you View Files for a Person.

Please remember that when you leave the Menu to Select you must use Ctrl-F6 to return to the menu. You should ignore the message "press the ESC key." For further information, please consult Section 3.5, Cautions for A/E EASE Program Use.

I N D I V I D U A L S

first name

last name

commercial phone: _____

FTS phone: _____

extention: _____

PAX ID: _____

office symbol: _____

OnTyme ID: _____

title: _____

orgn: _____

addr1: _____

addr2: _____

addr3: _____

contents:

1. _____

3. _____

5. _____

7. _____

9. _____

2. _____

4. _____

6. _____

8. _____

10. _____

Ctrl/F6 to continue...

Figure 16. Individuals Data Entry Screen.

Topics Library

Another important feature of A/E EASE is initiated when you select **Tasks and To-Do** from the opening menu. The following options are available through this selection:

Preceding Menu	Topics and To-Do Lists	Help F1
Add a New Topic	Leave Menu to Select Topic	
Revise a Topic	View Files for a Topic	
Select a Topic	Topics Report	

This menu is very similar to those of other library functions in A/E EASE. The **Add a New Topic** selection menu is shown on the following page.

One of the greatest benefits of this feature is that you can keep track of your to-do lists and assign priorities to each item. The tasks can be sorted into different functions that you define. The data entry screen in Figure 17 shows this feature.

Please remember that when you leave the Menu to Select, you must use **Ctrl-F6** to return to the menu. You should ignore the message "press the ESC key." For further information, please consult Section 3.5, Cautions for A/E EASE Program Use.

As with other library features of A/E EASE you can keep notes on any given subject through the **View Files** feature.

T A S K S

type: _____ priority: _____

description: _____

notefile: _____

Ctrl/F6 to continue...

Figure 17. Topics Data Entry Screen.

Calling ACASS

This menu selection allows you to directly dial the Automated Contract Administration Support System (ACASS). This system is used by members of the A/E preelection panel. Many of the persons on this panel are also the ones tasked with A/E Liability duties. This feature was included to expand the A/E EASE capabilities.

When you select **Call ACASS**, A/E EASE will dial the number for you through an autodial modem. In addition to reaching a commercial telephone line, the program will dial a "9" prior to dialing the ACASS access number. This step was included to allow the most generic release of the program for Government agencies that must dial "9" to access an outside line. If you wish to customize this feature for a different configuration, proceed to Section 7.1.

Once you are in the ACASS system, you should consult the ACASS manuals for further information. The ACASS point of contact is Ms. Judy McGinnis, USACE North Pacific Division, NPDSU, P.O. Box 2870, Portland, OR 97208.

Using A/E EASE to Call ACASS

Move the highlighted bar to the **Call ACASS** option and press the **Enter** key.

You will see the computer dial up the program and log on. There are two times when you must interact with the computer to assist A/E EASE in accessing the ACASS system. Please note the message to press the **Enter** key when requested by A/E EASE.

When the EASE system disappears, wait a moment until a message appears telling you that you are "Connected." Type the following letters:

LOGON _____ and press the **Enter** key.

You are now in ACASS. Proceed as necessary to run your reports. When you are ready to print, the files go to the next step (Section 5.8).

Printing an ACASS Report

1. Type the name of the ACASS file that contains the report, for example, "L254 FILE (EJE)".
2. Prior to pressing the Enter key, press F7.
3. Press the Enter key. Notice the word "Capture" on the bottom line of the computer screen.
4. When the report has been completed, press the F7 key again. Notice that the word "Capture" has disappeared from the bottom line of the computer screen.
5. Press the "up" arrow key to begin the printing process. You will notice that the message "Shift/F9" appears in the bottom left of your screen.
6. To print, hold down the ALT key and press the F2 key.
7. If the file needs to be formatted by deleting lines at the top, move the cursor one line above the first line of the file and press the Ins key; next press the letter M then the letter p.
8. Move to the next page break and follow the same procedure to format the beginning of each new page. Remember to do this procedure at the end of the line before you want to start the next page.
9. To print, hold down the Alt key and press the F2 key.
10. When you are finished printing, to return to your session, hold down the Shift key and press the F9 key.
11. When you log off of ACASS, follow the directions and do not save the captured information.
12. When you see the menu for Enable, press the Esc key and then the letter r.
13. If you wish to continue with A/E EASE, type the letters AE and then press the Enter key.

Saving Data

One of the most important features of A/E EASE is that you can save all of your data with very little knowledge of the files that contain it. Selecting **Save Data** from the opening menu will begin a program to copy all your data, data index, and note files to a floppy disk that you will place in drive A:.

Saving copies of your data is the best insurance against needing to reenter all of the information.

This selection only makes a copy of your data files. The A/E EASE program is contained on the floppy disk that was included with this manual. Any modifications to these programs should be saved on a different floppy disk. Keeping the A/E EASE program files intact is the best way to evaluate the importance and usefulness of your changes and future updates of the program.

If your data is destroyed, there is a program you can use to copy the data from your backup floppy disk onto the hard disk. This program is called `aerestor.bat`. You should be very careful with this program since, if you copy files from a floppy to your hard disk, the files on your hard disk will be overwritten. Because use of this program requires some caution, it was not included in the menu system. Providing the file as a stand-alone is the best way to ensure its safe use.

CHAPTER 6

TOPICS FOR ADVANCED USE

A/E EASE and Enable Commands

You will need to know commands from both EASE and Enable. The EASE commands required have been minimized to create consistency of use within EASE and to keep from demanding a great deal of memory work. Also, when using EASE, the Enable commands are limited because EASE performs many of those commands. The ones you need to know are as follows:

<u>Command</u>	<u>Explanation</u>
Shift F10	When at the Enable menu, this brings up the EASE opening menu.
Ctrl F6	Displays a menu; goes back to a menu; or performs the next step on the way back to a menu.
Ctrl F10 X	X is the first character of any following menu desired to be displayed when at the Enable main menu.
Esc	Goes back one menu; clears an Enable menu choice; or if an EASE menu has just been called from Enable, it will return to Enable.
F10	Displays Enable's top line menu which contains a wide range of choices.
x	This is the first character of any EASE or Enable menu selection desired to activate (or, optionally, use the cursor keys and press Enter).
F1	Provides help for each selection in an EASE menu or while in an Enable file window.
Alt F1	Provides help for use of function keys in Enable word-processing.
Alt F2	Prints a word-processing file.
F3	Inserts a blank line in word processing.
Alt F3	Deletes a line in word processing or clears a wrong entry from an input prompt.
Alt F4	Centers a single line of text.

<u>Command</u>	<u>Explanation</u>
Alt F6	Inserts a ruler.
F7	Marks a block of text or records (press F7 at the beginning and the end of the desired block).
Alt F7	Clears a marked block.
F8	Copies a marked block.
Alt F8	Moves a marked block.
F9 Del B	Deletes a marked block.
F9 B +	Centers a marked block.
Alt F10	Saves a file (choose Accept Options or Change Options).
Ctrl Home	Goes to the beginning of a file or display.
Ctrl End	Goes to the end of a file or display.

NOTE: besides these commands, use the arrow keys, PgUp, and PgDn to move the cursor location in a file or other display. Use the Enter key to select a menu option or create a carriage return within a file.

Data File Exchange With Enable

The EASE program can both import and export files. Its compatibility with other popular software programs allows you to use EASE to work on files previously created on other programs. EASE can thus complement existing systems. One should note that if a file was created on a program other than EASE and does not have a file extension (e.g. filename.WPF), a period (.) should be entered after the filename.

Examples of non-EASE files that can be used within EASE are:

Word processing: ASCII, Wordstar, Multimate,
 Volkswriter, Easywriter,
 Peachtext

Databases: ASCII, dBase II, LOTUS 123 (all convert to Enable DBMS)

Spreadsheets: LOTUS 123, Visicalc, DIF

These files can be edited just as an EASE file, using any EASE feature desired. However, only features supported by EASE will be converted and/or executed when a non-EASE file is used.

How to Work With Enable Windows

Windows are a very important feature of A/E EASE and Enable. As you become more familiar with Enable, you will need to use windows for tasks such as transferring data between a database and a graph or spreadsheet, or merging word-processing files with graphics.

Windows are used in the A/E EASE program. For example, windows are opened to allow you to modify your note files. When all note files have been modified, the window is closed and you are returned to your previous location. Viewing this month's calendar under the **Appointments Library** is an example of using windows to allow access to files not created by EASE or Enable within the A/E EASE program. Menus are also present in windows.

Enable allows a maximum of eight windows to be open at the same time, given that there is enough memory available on the computer. The EASE program selections will often open two to four windows. Most of these windows will not be displayed on the screen so that the user does not become confused with all of the flashing screens. Enable has commands that allow the developer to hide the program from the user. A/E EASE closes its windows automatically so that the user does not have to perform this task manually.

Because A/E EASE performs open- and close-window functions, it may become confused if the user opens one or more extra windows without closing them when finished. In many cases, the presence of an extra window will cause a menu selection to misexecute or at least fail to return the user to the point where he/she began. However, generally, A/E EASE will open and close the desired type of window for the user.

CHAPTER 7

A/E EASE PROGRAM DOCUMENTATION

Hints on Customizing A/E EASE Features

Attempting to customize a program that was written by another person is often very challenging. To help you customize A/E EASE features, this section includes documentation on every file included in Version 1.1.

The first step in customizing any of the EASE features is to learn the Enable program. The software comes with a tutorial that shows you, in general, what A/E EASE can do. It is very important that you learn to use the menu systems and database routines of Enable thoroughly.

Failure to learn the Enable program before attempting to customize A/E EASE will result in complete frustration.

When you are ready to begin customizing the program, create a new directory and copy all the existing files into it. Developing new applications on your only copy of the database is too risky.

Once you have mastered the functions of the Enable software and copied all of the files into a new directory you are ready to modify the *.bat files. These files are essential since they are the programs that will facilitate entrance and exit from EASE. The directory names should be changed to the new directory name, as appropriate.

Now you are ready to customize A/E EASE. To change the program's features, begin by changing small portions of the existing program, rather than start your own independent applications. Learning how A/E EASE works is made much easier by using the {Von} command in macro command strings. This command will show what the macro is doing on the screen. In addition to using this command to learn Enable at a deeper level, it is also an excellent tool for debugging your programs.

Several important items are involved in customizing A/E EASE:

1. Learn to use the word processor of Enable as soon as possible.
2. Edit menu colors in the MCM, Tools, Revise, and Menu selections and use this to set up your initial trial menus.
3. MCM, Tools, Revise, Menu is limited to four lines of macros per menu selection. Some A/E EASE programs require more than this number. To edit these programs you will need to use the word processor. Executable lines for the menus are contained in the comment section of the file.
4. MCM, Tools, Revise, Menu colors are the correct colors. The menu colors shown in the word processor will not be the colors that appear on the screen.

5. To simplify reporting, make full use of the ability to sort and select data through Enable prior to executing a report. To do this, use the macro capabilities of Enable.
6. When creating or editing macros, you must be very careful to use the exact syntax. Many examples are shown in the rest of this chapter. Failure to use the exact syntax will cause much frustration. Some frequent problems are:
 - Not matching () [] ()
 - Not enough carriage returns
 - Not clearing a field previously used with (&F3)
 - Not using the (End) command to execute a set of selections made with macros
 - Not getting the keystroke sequence correct before beginning to create a set of macro commands

Files Used to Start A/E EASE

1. **autoexec.bat**: This file is executed when you turn on the power to your computer, or if you boot your computer. It is also the file that you will need to configure your computer for the A/E EASE program. This file contains the minimum information that you should use when setting up the autoexec.bat file:

```
ver
echo off
prompt $p $g
path=c:\dos;c:\ease;c:\util
```

2. **autoexec.xxx**. This file, when copied over from the UTIL directory into the C:\ directory as autoexec.bat according to the installation instructions, will start A/E EASE as soon as you turn on your computer.

```
ver
echo off
prompt $p $g
path=c:\dos;c:\ease;c:\util
ease
```

3. **ease.bat**. This file starts A/E EASE Version 1.1. Edit this file using an ASCII text editor such as edlin. This program has three important features:

1. Using the utility program cal which gives the monthly calendar for the the system clock, the monthly calendar file cal.asc is created.
2. The fourth line starts the Enable program and initializes parameters.
3. When saving your data, the A/E EASE program creates a word-processing file called save.asc and then exits the Enable program. Exiting the program returns control to the ease.bat file. The file checks to see if the file save.asc exists; if so, it runs the file to save the databases and database indexes, aesave.bat. Once aesave.bat has finished, control is returned to ease.bat and the A/E EASE program begins.

```
echo off
cal > \ease\cal.asc
cd \enable
enable (,,,c:\ease),599,v9,b,@1
cd \ease
if exist save.asc aesave
```

4. \$(1).MCM: This file contains macro commands and is called in the ease.bat file to start A/E EASE in the color monitor mode and then display the opening menu. The letters MSC are the macro that causes Enable to reset to color monitor mode. This code was added as the a result of some problems that occurred during the pilot testing period. The problem was that after other programs that used color were executed and the user tried to start A/E EASE, the colors would not work. It is hoped that this additional code will solve the problem.

```
(Voff)
MSC(End)
(!F10)
(Von)
```

5. label.asc. This file provides the labeling information for backup disks. It is an ASCII file with one line:

```
A/E SYS SAVE
```

6. cal.asc. This file contains the calendar for the month which is displayed from the "Meetings" menu. For example:

```
March 1987

Sun Mon Tue Wed Thu Fri Sat
1    2    3    4    5    6    7
8    9   10   11   12   13   14
15   16   17   18   19   20   21
22   23   24   25   26   27   28
29   30   31
```

7. AESAVE.BAT: This file is executed to back up the directory that contains A/E EASE.

```
echo off
cd c:\ease
erase c:\ease\save.asc
echo on
rem
rem Please insert a floppy disk into disk drive a:
rem and close the disk drive "door".
rem
pause
rem
rem Saving DataBase files and definitions to drive a:
rem
copy *.*BF a:
rem
```

```

rem Saving DataBase index files to drive a:
rem
copy *.NDX a:
rem
rem Saving Note files to drive a:
rem
copy *.WPF a:
rem
rem Labeling your floppy disk in drive a:
rem
label a: <label.asc
rem
rem Returning to the A/E EASE opening Menu.
rem
ease

```

8. **aerestor.bat**. This file copies the data and index files--which were saved on the save disk created under the **Save Data** selection--back into the ease directory. This file was not included in the menu selection since using it will erase all current data in the database.

```

echo off
cd c:\ease
echo on
rem This program will copy previously saved data and index
rem files for A/E EASE onto your hard disk.
rem
rem These files will be placed in the directory "ease".
rem
rem Please insert your floppy disk into disk drive a:
rem and close the disk drive "door".
rem
pause
rem
rem Copying files back to the ease directory.
rem
copy a:*.?BF c:\ease
copy a:*.NDX c:\ease
copy a:*.WPF c:\ease
rem
rem Copy complete, accessing the A/E EASE program.
rem
ease

```

Databases and Related Files

1. 4858R.\$BF this is the database of summary information from
4858R.DBF the ENG FORM 4858-R, as updated in March '87.
OFNDX.NDX index file for the data field "OFF"
DIVNDX.NDX index file for the data field "DIVN"
QNDX.NDX index file for the data field "Q"
FYNDX.NDX index file for the data field "FY"

2. 4858WRK.\$BF this is the database which contains the criteria
4858WRK.DBF used for the sorting and selecting of data to run
 against the 4858-R database.
4858WHO.NDX index file

3. 4858SEL.\$BF this is the database which holds the information
4858SEL.DBF which is to be placed in the "where" and "index"
 clause information field when running macros in the
 background of the 4858sel report.

4. APPOINT.\$BF this database contains the appointment data
APPOINT.DBF

5. INDIV.\$BF this database contains the individual library for
INDIV.DBF telephone directory menu selection.

6. GRAPHS.\$BF this database contains the graph information
GRAPHS.DBF

7. TASKS.\$DF this is the database for the "topics" library.
TASKS.DBF

8. 4858DD.\$BF this is the database which contains a list of all
4858DD.DBF valid district names. This list is referred to when
 the CORPSQTR.RPT is selected.
NONDX.NDX index file for the above database.

SORTED FILES: Files with the suffix "SS" refer to extracted data created by sorting and selecting information for reporting or display. These files will have the same prefix as the database with the suffix as noted. For example, a sorted set of data for the "topics" library would be in a file called `tasks.ss`.

INDEX FILES: Not all indexed files have been noted here. Index files hold the system records and locations in memory of the database field that you may want to track. Use of index files in large databases speeds the processing time required to sort and select data. These files are noted by the suffix "NDX." Several examples are noted above.

Data Entry Forms

4858IN.\$IF	This is the input form that will be used to enter data into the 4858-R database.
CORPFYS.\$IF	This screen gathers information for the 4858wrk database using the 4858sel report selection "A."
CORPFY.\$IF	This screen gathers information for the 4858wrk database using the 4858sel report selection "B."
CORPQTR.\$IF	This screen gathers information for the 4858wrk database using the 4858sel report selection "C."
DIVFY.\$IF	This screen gathers information for the 4858wrk database using the 4858sel report selection "D."
DIVQTR.\$IF	This screen gathers information for the 4858wrk database using the 4858sel report selection "E."
DIVFYS.\$IF	This screen gathers information for the 4858wrk database using the 4858sel report selection "F."
DISFY.\$IF	This screen gathers information for the 4858wrk database using the 4858sel report selection "G."
DISFYS.\$IF	This screen gathers information for the 4858wrk database using the 4858sel report selection "H."
DISQTR.\$IF	This screen gathers information for the 4858wrk database using the 4858sel report selection "I."
APPOINT.\$IF	The appointment database input screen INDIV.\$IF the individual and telephone directory input screen.
GRAFIN.\$IF	This is the graph information input screen.
TASKS.\$IF	This is the topics library database input screen.

Reports

4858sel.wpf	Word-processing file that describes the structure of the 4858sel report
4858SEL.RPT	This report selects and sorts database from information in the 4858wrk and 4858sel reports to obtain the database extract file 4858R.SS. It then executes one of the following nine reports to format that information
CORPFYS.RPT CORPFY.RPT CORPQTR.RPT DIVFYS.RPT DIVFY.RPT DIVQTR.RPT DISFYS.RPT DISFY.RPT DISQTR.RPT	These nine reports are described in Section 5.2
APPOINT.RPT	Appointment information report
INDIV.RPT	Individual information report
VIEWFILE.RPT	This report is used by the menu system to allow the user to view note files associated with an individual
OPENFILE.RPT	This report allows the user to look at one file that may be associated with a particular meeting
TASK.RPT	This is the topics library report

Menus and Macros

The following is a list of the menu system used for the A/E EASE application program. Figure 18 shows the order in which they are called. Appendix B gives examples of each of these files.

<u>File Name</u>	<u>Description</u>
\$(1).MCM	This macro is used to start the menu system. The file is listed in Section 7.1
MCM.MNU	This is the starting menu--the one with A/E EASE in large letters
A.MC	This is the A/E Liability Management and Analysis System menu
E.DB	This is the data entry menu for A/E Liability System
B.MC	This is the report menu for the A/E Liability System
A.DB	This is the data entry menu for the Appointment Library
I.DB	This is the data entry menu for the Individual Library
J.DB	This is the data entry menu for the Tasks Library
G.DB	This is the graphics database entry screen
O.DB	Options for displaying a graph and selecting graph style
M.DB	Runs macros and "Completing Data Entry"
N.DB	Runs macros and "Preparing Graph" and displays graph on screen
C.SS	Allows revision of data prior to creating new graph
E.SS	Allows revised graph display and selection of graph style
F.SS	Allows changes to graph style, etc.
S.SS	Allows changes to graph size
T.SS	Allows changes to graph type color
B.SS	Allows changes to bar or line color
N.SS	Allows changes to text fonts

D.SS Allows user to save the graph in a word-processing file

H.MNU Menu in graph word-processing file

notes.msg These messages are called and displayed on the screen during
open.msg the user's interaction with the notes selections
nofile.msg file displayed if no notes are found to be associated
 with a particular meeting or person

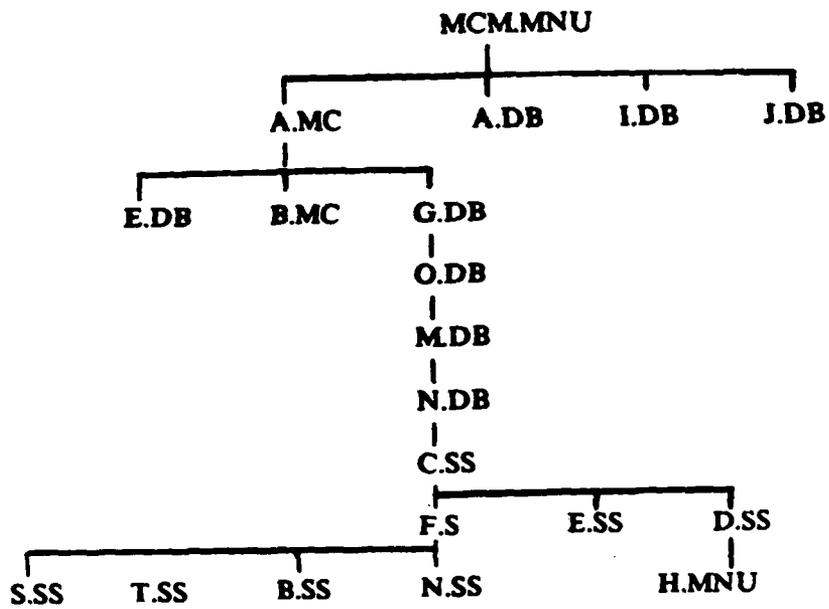


Figure 18. Menu System Organization.

APPENDIX A: A/E EASE REPORT FILES

Please wait a moment.

Checking the database

(Do NOT hit ESC - If you do, hit END.)

```
;;  
;;  
;;  
.label byr_check  
.status Checking the beginning fiscal year ....  
.read 4858R first fy = byr  
;;  
.if sys:record = 0  
  Error Msg: The fiscal year "[byr]" can't be found in the 4858R database.  
.elseif dateinfo = "FYS"  
.goto eyr_check  
.elseif dateinfo = "QTR"  
.goto qtr_check  
.elseif dateinfo = "FY "  
.goto orga_check  
.endif  
;;  
.if dateinfo = "FYS"  
.input "Please enter the beginning fiscal year (use two digits) > " byr  
.else  
.input "Please enter the fiscal year (use two digits) > " byr  
.endif  
.goto byr_check  
;;  
;;  
.label eyr_check  
.if byr > eyr or byr < eyr - 4  
  Error Msg: The range of the fiscal years can't be accepted. (max = 5)  
.input "Please enter the ending fiscal year (use two digits) > " eyr  
.goto eyr_check  
.else  
.status Checking the ending fiscal year ....  
.read 4858R first fy = eyr  
.endif  
;;  
.if sys:record = 0  
  Error Msg: The fiscal year "[eyr]" can't be found in 4858R database.  
.input "Please enter the ending fiscal year (use two digits) > " eyr  
.goto eyr_check  
.else  
.goto orga_check  
.endif  
;;  
.label qtr_check
```

```

.status Checking the quarter number ....
.read 4858R first q = qtr
;;
.if sys:record = 0
  Error Msg: The quarter "[qtr]" can't be found in 4858R database.
.input "Please enter the quarter (use one digit) > " qtr
.goto qtr_check
.endif
;;
;; The following section is going to check the organization information
;;
.label orga_check
.if orgainfo = " "
  .goto where_check
.elseif orgainfo = "DS"
  .goto dst_check
.endif
;;
.label dvn_check
.if dvn = " "
  .goto back_menu
.else
  .let dvn = @uc(dvn)
.status Checking the valid DIVISION ....
.read 4858sel first divn = dvn
.endif
;;
.if sys:record = 0
  .let sys:screen = 0

```

THE VALID DIVISION NAMES ARE:

EUD	HND	LMVD	MRD
NAD	NCD	NED	NPD
ORD	PODV	SPD	SAD
SWD			

Press the ENTER key to return to the previous Menu.

(Do NOT hit ESC - If you do, hit END.)

```

Error Msg: The division name is invalid. Please check the LIST.
.input "Please type the Division that you want > " dvn
.goto dvn_check
.else
.status Checking the Division in the 4858R database ....
.read 4858R first (divn = dvn) and (fy ge byr) and (fy le eyr)
.endif
.if sys:record = 0

```

```
.let sys:screen = 0
```

THE VALID DIVISION NAMES ARE:

EUD	HND	LMVD	MRD
NAD	NCD	NED	NPD
ORD	PODV	SPD	SAD
SWD			

Press the ENTER key to return to the previous Menu.

(Do NOT hit ESC - If you do, hit END.)

```
Error Msg: Division "[dvn ]" can't be found in the 4858R database.
.input "Please type the Division that you want > " dvn
.goto dvn_check
.else
.goto where_check
.endif
;;
.label dst_check
.if dst = " "
.goto back_menu
.else
.let dst = @uc(dst)
.status Checking the valid DISTRICT ....
.read 4858sel first dis = dst
.endif
;;
.if sys:record = 0
.let sys:screen = 0
```

THE VALID DISTRICT NAMES ARE:

EUD	HND	LMM	LMN	LMS	LMK	MRK	MRO	NAB	NAN
NAO	NAP	NCB	NCC	NCE	NCR	NCS	NED	NPA	NPP
NPS	NPW	ORH	ORL	ORN	ORP	POD	POF	POJ	SAC
SAI	SAJ	SAM	SAS	SAW	SPK	SPL	SPN	SWA	SWF
SWG	SWL	SWT							

Press the ENTER key to return to the previous Menu.

(Do NOT hit ESC - If you do, hit END.)

```
Error Msg: The district name is invalid. Please check the LIST.
.input "Please type the District that you want > " dst
.goto dst_check
.else
.status Checking the District in the 4858R database ....
.read 4858R first (off = dst) and (fy ge byr) and (fy le eyr)
.endif
;;
.if sys:record = 0
.let sys:screen = 0
```

THE VALID DISTRICT NAMES ARE:

EUD	HND	LMM	LMN	LMS	LMK	MRK	MRO	NAB	NAN
NAO	NAP	NCB	NCC	NCE	NCR	NCS	NED	NPA	NPP
NPS	NPW	ORH	ORL	ORN	ORP	POD	POF	POJ	SAC
SAI	SAJ	SAM	SAS	SAW	SPK	SPL	SPN	SWA	SWF
SWG	SWL	SWT							

Press the ENTER key to return to the previous Menu.

(Do NOT hit ESC - If you do, hit END.)

```
Error Msg: District "[dst]" can't be found in the 4858R database.
.input "Please type the District that you want > " dst
.goto dst_check
.endif
;;
.label where_check
.update 4858wrk
.let where1 = where1
.if where1 = "Q"
.let clause0 = qtr
.elseif where1 = "DIVN"
.let clause1 = dvn
.elseif where1 = "OFF"
.let clause1 = dst
.endif
.if where2 = "DIVN"
.let clause2 = dvn
.elseif where2 = "OFF"
.let clause2 = dst
.endif
.status Search the spawned report and process. Please wait a moment!...
```

```

;;
;; THE FOLLOWING IS THE ACTION OF THE MACRO COMMANDS:
;;
;; 8 ** Close the report and Go back to query report **
;;
macro (Voff){&End}Y(&End){^F10}B(Von)
;;
;; 7 ** Put the report on the screen until the user hits CTRL/F6 **
;;
macro (&Home)UWRreport~(End){Down}{Von}{Home){^F9){^F6}
;;
;; 6 ** Save the report contents in the default file report.wpf **
;;
macro D(&F3)report~(&F3)~(&F10){Pause}
;;
;; 5 ** Wake up the spawned report program **
;;
macro (Esc)9~(&F3)[reptfile].rpt~
;;
;; 4 ** Select the sorted fields if necessary **
;;
.if fs = "S"
macro ~(Pause)[sfield]~fy(End)
.else
macro ~
.endif
;;
;; 3 ** Write the where clause if necessary **
;;
.if where2 <> " "
macro and [where2]="[clause2 ]"
.endif
;;
.if where1 <> " " and where1 <> "Q"
macro [where1]="[clause1]"
.elseif where1 = "Q"
macro [where1]=[clause0]
.endif
;;
;; 2 ** Write the index clause **
;;
.if dateinfo = "FYS"
macro fy=[byr]..[eyr]~
.else
macro fy=[byr]..[byr]~
.endif
;;
;; 1 ** Freeze the screen and select the sorted database **
;;
macro (&End)Y(Esc)[fs){&F3}4858R~(&F3)
macro Preparing Report...(&N){Voff)
macro (Voff){F9}WLG(Von){11X}{Up}{30X}{Right){F3){&I}

```

```
.exit
;;
;; Go back to AE MENU
;;
.label back_menu
.macro (Voff){&End){&END)Y(^F10)A(Von)R
.exit
;;
;; ---END OF REPORT---
```

```

.report division
;;
;; REPORT: CORPFYS.RPT VERSION 1.1
;; LAST EDIT: Sept. 21, 1987
;; LAST EDITOR: NIE-JIA YAU, BILL EAST
;;
;; This report uses the information in a sorted and selected subset of the
;; 4858R database called 4858R.SS to present historical trend information
;;
;; this is the "break" method of summing the data which has already been
;; grouped according to fiscal year "fyear". The location of this break may
;; be reviewed later to find the optimum location, however the program does
;; run in this mode. the program also executes approximately twice as fast
;; as the report which was originally created.
;;
.definitions
;;
.define byr = byr in 4858wrk link 4858wrk.sys:record = 1
.define eyr = eyr in 4858wrk link 4858wrk.sys:record = 1
.define yrs as integer 1
.define y1 as integer 2
.define y2 as integer 2
.define y3 as integer 2
.define y4 as integer 2
.define y5 as integer 2
.define h1 as integer 4
.define h2 as integer 4
.define h3 as integer 4
.define h4 as integer 4
.define h5 as integer 4
.define p1 as integer 4
.define p2 as integer 4
.define p3 as integer 4
.define p4 as integer 4
.define p5 as integer 4
.define r1 as integer 4
.define r2 as integer 4
.define r3 as integer 4
.define r4 as integer 4
.define r5 as integer 4
.define e1 as integer using NNN,NNN
.define e2 as integer using NNN,NNN
.define e3 as integer using NNN,NNN
.define e4 as integer using NNN,NNN
.define e5 as integer using NNN,NNN
.define q1 as integer using NNN,NNN
.define q2 as integer using NNN,NNN
.define q3 as integer using NNN,NNN
.define q4 as integer using NNN,NNN
.define q5 as integer using NNN,NNN
;;
.intro

```

```

.let yrs = eyr - byr + 1
;;
.let y1 = byr
.let y2 = byr + 1
.let y3 = byr + 2
.let y4 = byr + 3
.let y5 = byr + 4
;;
.body
;;
.if fy = y1
.let h1 = h1 + b2
.let p1 = p1 + b7
.let e1 = e1 + d7/1000
.let r1 = r1 + b17
.let q1 = q1 + (d15 + a15 + d16 + a16)/1000
;;
.elseif fy = y2
.let h2 = h2 + b2
.let p2 = p2 + b7
.let e2 = e2 + d7/1000
.let r2 = r2 + b17
.let q2 = q2 + (d15 + a15 + d16 + a16)/1000
;;
.elseif fy = y3
.let h3 = h3 + b2
.let p3 = p3 + b7
.let e3 = e3 + d7/1000
.let r3 = r3 + b17
.let q3 = q3 + (d15 + a15 + d16 + a16)/1000
;;
.elseif fy = y4
.let h4 = h4 + b2
.let p4 = p4 + b7
.let e4 = e4 + d7/1000
.let r4 = r4 + b17
.let q4 = q4 + (d15 + a15 + d16 + a16)/1000
;;
.elseif fy = y5
.let h5 = h5 + b2
.let p5 = p5 + b7
.let e5 = e5 + d7/1000
.let r5 = r5 + b17
.let q5 = q5 + (d15 + a15 + d16 + a16)/1000
.endif
;;

```

.conclusion
.reformat off
.if yrs = 1

CORPS OF ENGINEERS
A/E LIABILITY PROGRAM SUMMARY

	FY[y1(^)]
Design Deficiencies	[h1(^)]
Number Pursued/ Damage Estimate	[p1(^)]/ \${e1(^)}
Cases Resolved/ Funds Recovered	[r1(^)]/ \${q1(^)}

.elseif yrs = 2

CORPS OF ENGINEERS
A/E LIABILITY PROGRAM SUMMARY

	FY[y1(^)]	FY[y2(^)]
Design Deficiencies	[h1(^)]	[h2(^)]
Number Pursued/ Damage Estimate	[p1(^)]/ \${e1(^)}	[p2(^)]/ \${e2(^)}
Cases Resolved/ Funds Recovered	[r1(^)]/ \${q1(^)}	[r2(^)]/ \${q2(^)}

.elseif yrs = 3

CORPS OF ENGINEERS
A/E LIABILITY PROGRAM SUMMARY

	FY[y1(^)]	FY[y2(^)]	FY[y3(^)]
Design Deficiencies	[h1(^)]	[h2(^)]	[h3(^)]
Number Pursued/ Damage Estimate	[p1(^)]/ \${e1(^)}	[p2(^)]/ \${e2(^)}	[p3(^)]/ \${e3(^)}
Cases Resolved/ Funds Recovered	[r1(^)]/ \${q1(^)}	[r2(^)]/ \${q2(^)}	[r3(^)]/ \${q3(^)}

.elseif yrs = 4

CORPS OF ENGINEERS
A/E LIABILITY PROGRAM SUMMARY

	FY[y1(^)]	FY[y2(^)]	FY[y3(^)]	FY[y4(^)]
Design Deficiencies	[h1(^)]	[h2(^)]	[h3(^)]	[h4(^)]
Cases Pursued/ Damage Estimate	[p1(^)]/ \${e1(^)}	[p2(^)]/ \${e2(^)}	[p3(^)]/ \${e3(^)}	[p4(^)]/ \${e4(^)}
Cases Resolved/ Funds Recovered	[r1(^)]/ \${q1(^)}	[r2(^)]/ \${q2(^)}	[r3(^)]/ \${q3(^)}	[r4(^)]/ \${q4(^)}

.elseif yrs = 5

CORPS OF ENGINEERS
A/E LIABILITY PROGRAM SUMMARY

	FY[y1(^)]	FY[y2(^)]	FY[y3(^)]	FY[y4(^)]	FY[y5(^)]
Design Deficiencies	[h1(^)]	[h2(^)]	[h3(^)]	[h4(^)]	[h5(^)]
Cases Pursued/ Damage Estimate	[p1(^)]/ \$[e1(^)]	[p2(^)]/ \$[e2(^)]	[p3(^)]/ \$[e3(^)]	[p4(^)]/ \$[e4(^)]	[p5(^)]/ \$[e5(^)]
Cases Resolved/ Funds Recovered	[r1(^)]/ \$[q1(^)]	[r2(^)]/ \$[q2(^)]	[r3(^)]/ \$[q3(^)]	[r4(^)]/ \$[q4(^)]	[r5(^)]/ \$[q5(^)]

.endif

::

:: ---END OF REPORT---

:: to continue: CTRL/F6

to print: ALT/F2

.report division

;;
;; REPORT: CORPFY.RPT VERSION 1.1
;; LAST EDITED: SEPT. 21, 1987
;; LAST EDITOR: NIE-JIA YAU, BILL EAST
;;

;; This report will sum data in the sorted and selected data file 4858R.SS
;; which contains data from the 4858R data base for a
;; specific fiscal year, then print the results in the same format as the
;; data entry screen which looks like ENG FORM 4858R.
;;

.definitions

.define byr = byr in 4858wrk link 4858wrk.sys:record = 1

;;

.intro

.body

.conclusion

;;

CORPS WIDE STATUS OF A/E LIABILITY FOR FY [byr]

.reformat off

1. Total Changes This Quarter.		[b1(s)]	[d1(s)]]	
2. "Design Deficiency" Changes This Quarter.		[b2(s)]	[d2(s)]]	
3. Carry Over From Previous Quarter.		[b3(s)]	[d3(s)]]	
4. Available For Action During Quarter (2+3).		[b4(s)]	[d4(s)]]	
5. Decisions of No Deficiency.		[b5(s)]	[d5(s)]]	
6. Decisions of No Liability.		[b6(s)]	[d6(s)]]	
7. Pursuits (#,\$).		[b7(s)]	[d7(s)]]	
8. Total Cases Initially Reviewed (5+6+7).		[b8(s)]	[d8(s)]]	
9. Carry Over to next quarter (4-8).		[b9(s)]	[d9(s)]]	
10. Decisions to Pursue (Item 7).		[b10(s)]	[d10(s)]]	
11. Carry over from Previous (Prev item 18).		[b11(s)]	[d11(s)]]	
12. Actions Active During Quarter (7+11).		[b12(s)]	[d12(s)]]	
13. Actions Dropped (No Deficiency).	([a13(s)])]	[b13(s)]	[d13(s)]]
14. Actions Dropped (No Liability).	([a14(s)])]	[b14(s)]	[d14(s)]]
15. Settlements (#,adm\$K,dmg\$K).	([a15(s)])]	[b15(s)]	[d15(s)]]
16. Construction Fixes (\$K).	([a16(s)])]	[b16(s)]	[d16(s)]]
17. Final Actions on Pursuit Cases.	([a17(s)])]	[b17(s)]	[d17(s)]]
18. Carry Over to Next Quarter.		[b18(s)]	[d18(s)]]	

;;

;; ---END OF REPORT---

to continue: CTRL/F6

to print: ALT/F2

```

.report division
;;
;; REPORT: CORPQTR.RPT VERSION 1.1
;; LAST EDIT: Sept. 21, 1987
;; LAST EDITOR: NIE-JIA YAU, BILL EAST
;;
;; THIS REPORT RUNS AGAINST THE 4858SEL DATABASE AND REPORTS DISTRICTS WHICH
;; FAILED TO REPORT DURING A SPECIFIC FISCAL YEAR AND QUARTER.
;; THIS REPORT ALSO CHECK THE DATABASE TO SEE IF THERE ANY ERROR EXITS.
;;
.definitions
.define n as integer 2
.define m as integer 2
.define m0 as integer 2
.define mp as integer 2
.define err as integer 2
.define qt as text 3
.define offl as text 3
.define divn1 as text 4
.define byr = byr in 4858wrk link 4858wrk.sys:record = 1
.define qtr = qtr in 4858wrk link 4858wrk.sys:record = 1
.define dis = dis in 4858dd link 4858dd.number = m
.define dvn = dvn in 4858dd link 4858dd.number = m
;;
.map section
;;
.introduction
.let m = 0
.if qtr = 1
.let qt = "1st"
.elseif qtr = 2
.let qt = "2nd"
.elseif qtr = 3
.let qt = "3rd"
.else
.let qt = "4th"
.endif

```

A/E LIABILITY QUARTERLY EXCEPTION REPORT
for the [qt] Quarter of FY [byr]

No.	Office	Division
-----	-----	-----

```

.reformat off
;;
.body
;;
.let m0 = m
.let off = off
.let divn = divn
;;

```

```

;;
;; CHECK DUPLICATED
;;
.if off1 = off
.let err = err + 1
.reformat off

        Database Error !! --- [off]          [divn] ---This record was DUPLICATED !
.let m = m0
.goto next
.endif
;;
;; CHECK DISTRICT NAME
;;
.label check1
.let m = m + 1
.if m > 43
.let err = err + 1
.let m = m0
.reformat off

        Database Error !! --- [off]          [divn] ---The OFFICE NAME is wrong !
.goto next
.endif
.let dis = dis
.let dvn = dvn
;;
.if off = dis and divn = dvn
.goto print
.elseif off = dis
.goto check2
.endif
.goto check1
;;
;; CHECK DIVISION NAME
;;
.label check2
.if divn <> dvn
.let err = err + 1
.let m = m0
.reformat off

        Database Error !! --- [off]          [divn] ---The DIVISION name is wrong !
.goto next
.endif
;;
;; PRINT MISSING DISTRICTS
;;
.label print
.if m0 = m - 1
.let off1 = off
.let divn1 = divn

```

```

.goto next
.else
.let m0 = m0 + 1
.let mp = m
.let m = m0
.let dis = dis
.let dvn = dvn
.let n = n + 1

```

```

                                [n(>)].    [dis]    [dvn]

.let m = mp
.goto print
.endif
;;
.label next
;;
;; WRITE CONCLUSION OF REPORT
;;
.conclusion
.if n = 0
.reformat on

```

There are no offices which have not had there [qt] quarter of FY [byr] record in the 4858R database edited. This would indicate that all offices have complied with the reporting requirements during the period. Also,

```

.if err = 0
there is no error in the database 4858R during the [qt] quarter of FY [byr].
.else
there are [err] errors in the database 4858R during the [qt] quarter of
FY [byr], Please use menu "ENTRY" to check the database.
.endif
.else
.label rest
.if m < 43
.let m = m + 1
.let n = n + 1
.let dis = dis
.reformat off

```

```

                                [n(>)].    [dis]    [divn]

.goto rest
.endif
.reformat on

```

There were [n] offices which did not submit reports during the [qt] quarter of FY [byr]. Also,

```

.if err = 0
there is no errors in the database 4858R during the [qt] quarter of FY [byr].
.else

```

there are [err] errors in the database 4858R during that quarter. Please use menu "Enter Data" to check the database.

.endif

.endif

::

:: ---END OF REPORT---

to continue: CTRL/F6

to print: ALT/F2

```
.report division
;;
;; REPORT: DISFYS.RPT VERSION 1.1
;; LAST EDIT: Sept. 21, 1987
;; LAST EDITOR: NIE-JIA YAU, BILL EAST
;;
;; This report uses the information in a sorted and selected subset of the
;; 4858R database called 4858R.SS to present historical trend information
;;
;;
```

```
.definitions
```

```
;;
.define byr = byr in 4858wrk link 4858wrk.sys:record - 1
.define eyr = eyr in 4858wrk link 4858wrk.sys:record - 1
.define dis = dis in 4858wrk link 4858wrk.sys:record - 1
.define yrs as integer 1
.define y1 as integer 2
.define y2 as integer 2
.define y3 as integer 2
.define y4 as integer 2
.define y5 as integer 2
.define h1 as integer 4
.define h2 as integer 4
.define h3 as integer 4
.define h4 as integer 4
.define h5 as integer 4
.define p1 as integer 4
.define p2 as integer 4
.define p3 as integer 4
.define p4 as integer 4
.define p5 as integer 4
.define r1 as integer 4
.define r2 as integer 4
.define r3 as integer 4
.define r4 as integer 4
.define r5 as integer 4
.define e1 as integer using NNN,NNN
.define e2 as integer using NNN,NNN
.define e3 as integer using NNN,NNN
.define e4 as integer using NNN,NNN
.define e5 as integer using NNN,NNN
.define q1 as integer using NNN,NNN
.define q2 as integer using NNN,NNN
.define q3 as integer using NNN,NNN
.define q4 as integer using NNN,NNN
.define q5 as integer using NNN,NNN
;;
```

```
.intro
```

```
.let yrs = eyr - byr + 1
;;
.let y1 = byr
.let y2 = byr + 1
```

```

.let y3 = byr + 2
.let y4 = byr + 3
.let y5 = byr + 4
;;
.body
;;
;;
.if fy = y1
.let h1 = h1 + b2
.let p1 = p1 + b7
.let e1 = e1 + d7/1000
.let r1 = r1 + b17
.let q1 = q1 + (d15 + a15 + d16 + a16)/1000
;;
.elseif fy = y2
.let h2 = h2 + b2
.let p2 = p2 + b7
.let e2 = e2 + d7/1000
.let r2 = r2 + b17
.let q2 = q2 + (d15 + a15 + d16 + a16)/1000
;;
.elseif fy = y3
.let h3 = h3 + b2
.let p3 = p3 + b7
.let e3 = e3 + d7/1000
.let r3 = r3 + b17
.let q3 = q3 + (d15 + a15 + d16 + a16)/1000
;;
.elseif fy = y4
.let h4 = h4 + b2
.let p4 = p4 + b7
.let e4 = e4 + d7/1000
.let r4 = r4 + b17
.let q4 = q4 + (d15 + a15 + d16 + a16)/1000
;;
.elseif fy = y5
.let h5 = h5 + b2
.let p5 = p5 + b7
.let e5 = e5 + d7/1000
.let r5 = r5 + b17
.let q5 = q5 + (d15 + a15 + d16 + a16)/1000
.endif
;;
.conclusion
.if yrs = 1

```

CORPS OF ENGINEERS
[dis] DISTRICT A/E LIABILITY PROGRAM SUMMARY
FOR FY [y1]

.reformat off

Design Deficiencies	[h1(^)]
Number Pursued/ Damage Estimate	[p1(^)]/ \${e1(^)}
Cases Resolved/ Funds Recovered	[r1(^)]/ \${q1(^)}

.elseif yrs = 2

CORPS OF ENGINEERS
[dis] DISTRICT A/E LIABILITY PROGRAM SUMMARY
FOR FY's [y1] to [y2]

.reformat off

Design Deficiencies	[h1(^)]	[h2(^)]
Number Pursued/ Damage Estimate	[p1(^)]/ \${e1(^)}	[p2(^)]/ \${e2(^)}
Cases Resolved/ Funds Recovered	[r1(^)]/ \${q1(^)}	[r2(^)]/ \${q2(^)}

.elseif yrs = 3

CORPS OF ENGINEERS
 [dis] DISTRICT A/E LIABILITY PROGRAM SUMMARY
 FOR FY's [y1] to [y3]

.reformat off

Design Deficiencies	[h1(^)]	[h2(^)]	[h3(^)]
Number Pursued/ Damage Estimate	[p1(^)]/ \${e1(^)}	[p2(^)]/ \${e2(^)}	[p3(^)]/ \${e3(^)}
Cases Resolved/ Funds Recovered	[r1(^)]/ \${q1(^)}	[r2(^)]/ \${q2(^)}	[r3(^)]/ \${q3(^)}

.elseif yrs = 4

CORPS OF ENGINEERS
 [dis] DISTRICT A/E LIABILITY PROGRAM SUMMARY
 FOR FY's [y1] to [y4]

.reformat off

	FY[y1(^)]	FY[y2(^)]	FY[y3(^)]	FY[y4(^)]
Design Deficiencies	[h1(^)]	[h2(^)]	[h3(^)]	[h4(^)]
Cases Pursued/ Damage Estimate	[p1(^)]/ \${e1(^)}	[p2(^)]/ \${e2(^)}	[p3(^)]/ \${e3(^)}	[p4(^)]/ \${e4(^)}
Cases Resolved/ Funds Recovered	[r1(^)]/ \${q1(^)}	[r2(^)]/ \${q2(^)}	[r3(^)]/ \${q3(^)}	[r4(^)]/ \${q4(^)}

.elseif yrs = 5

CORPS OF ENGINEERS
[dis] DISTRICT A/E LIABILITY PROGRAM SUMMARY
FOR FY's [y1] to [y5]

.reformat off

	FY[y1(^)]	FY[y2(^)]	FY[y3(^)]	FY[y4(^)]	FY[y5(^)]
Design Deficiencies	[h1(^)]	[h2(^)]	[h3(^)]	[h4(^)]	[h5(^)]
Cases Pursued/ Damage Estimate	[p1(^)]/ \$[e1(^)]	[p2(^)]/ \$[e2(^)]	[p3(^)]/ \$[e3(^)]	[p4(^)]/ \$[e4(^)]	[p5(^)]/ \$[e5(^)]
Cases Resolved/ Funds Recovered	[r1(^)]/ \$[q1(^)]	[r2(^)]/ \$[q2(^)]	[r3(^)]/ \$[q3(^)]	[r4(^)]/ \$[q4(^)]	[r5(^)]/ \$[q5(^)]

.endif

::
::

---END OF REPORT---

to continue: CTRL/F6

to print: ALT/F2

```

.report division
;;
;; REPORT: DISFY.RPT VERSION 1.1
;; LAST EDIT: Sept. 21, 1987
;; LAST EDITOR: NIE-JIA YAU, BILL EAST
;;
;; This report runs against a sorted and selected database of 4858R called
;; 4858R.SS to provide a comparison of district programs over one fiscal
;; year for a specific division
;;

```

```

definitions
.define byr = byr in 4858wrk link 4858wrk.sys:record = 1
.define dvn = dvn in 4858wrk link 4858wrk.sys:record = 1
.map section
;;
.intro
;;

```

A/E LIABILITY DISTRICT PROGRAM FISCAL YEAR SUMMARY
[dvn] DIVISION , FY ([byr])

Dist	Total Changes	Design Deficiencies	New Pursuit Actions (#,dmg)	Settlements (#/dmg+adm)
------	------------------	------------------------	--------------------------------	----------------------------

```

.body
;;
.conclusion
;;
.reformat on

```

There have been [b1(s)] with [b2(s)] alleged design deficiencies, [b7(s)] are being pursued. [b17(s)] cases have been resolved with [dl7(s)] damages, [al7(s)] admin fixes recovered.

```

;;
                to continue: CTRL/F6                to print: ALT/F2

```

```

;;
.break 01 procedure
.break on off
.break summary
.reformat off
[off] [b1(s^)] [b2(s^)] [b7(s^)]/[ d7(s^)] [b17(s^)]/[ ad17(s^)]
.break end
;;
;; ---END OF REPORT---

```

```

.report division
;;
;; REPORT: DISQTR.RPT VERSION 1.1
;; LAST EDITED: Sept. 21, 1987
;; LAST EDITOR: NIE-JIA YAU, BILL EAST
;;
;; This report will sum data in the sorted and selected data file 4858R.SS
;; which contains data from the 4858R data base for a specific district
;; and quarter of one fy, then print the results in the same format as the
;; data entry screen which looks like ENG FORM 4858R.
;;
.definitions
.define qt as text 3
.intro
.body
.if q = 1
.let qt = "1st"
.elseif q = 2
.let qt = "2nd"
.elseif q = 3
.let qt = "3rd"
.else
.let qt = "4th"
.endif
;;
.if off <> " "

      [off] STATUS OF A/E LIABILITY FOR THE [QT] QUARTER of FY [fy]
.reformat off

1. Total Changes This Quarter.                [b1   ] [d1   ]
2. "Design Deficiency" Changes This Quarter. [b2   ] [d2   ]
3. Carry Over From Previous Quarter.         [b3   ] [d3   ]
4. Available For Action During Quarter (2+3). [b4   ] [d4   ]
5. Decisions of No Deficiency.               [b5   ] [d5   ]
6. Decisions of No Liability.               [b6   ] [d6   ]
7. Pursuits (#,$).                          [b7   ] [d7   ]
8. Total Cases Initially Reviewed (5+6+7).   [b8   ] [d8   ]
9. Carry Over to next quarter (4-8).        [b9   ] [d9   ]

10. Decisions to Pursue (Item 7).            [b10  ] [d10  ]
11. Carry Over From Previous (Prev item 18). [b11  ] [d11  ]
12. Actions Active During Quarter (7+11).    [b12  ] [d12  ]
13. Actions Dropped (No Deficiency).        ( [a13 ] ) [b13  ] [d13  ]
14. Actions Dropped (No Liability).         ( [a14 ] ) [b14  ] [d14  ]
15. Settlements (#,adm$K,dmg$K).           ( [a15 ] ) [b15  ] [d15  ]
16. Construction Fixes ($K).               ( [a16 ] ) [b16  ] [d16  ]
17. Final Actions on Pursuit Cases.         ( [a17 ] ) [b17  ] [d17  ]
18. Carry Over to Next Quarter.            [b18  ] [d18  ]
;;
.else

```

Can't find required district record in database 4858R !

.endif

:: ---END OF REPORT---

to continue: CTRL/F6

to print: ALT/F2

```

.report division
;;
;; REPORT: DIVFYS.RPT VERSION 1.1
;; LAST EDIT: SEPT. 22, 1987
;; LAST EDITOR: NIE-JIA YAU, BILL EAST
;;
;; This report uses the information in a sorted and selected subset of the
;; 4858R database called 4858R.SS to present historical trend information
;;
;;
.definitions
;;
.define byr = byr in 4858wrk link 4858wrk.sys:record - 1
.define eyr = eyr in 4858wrk link 4858wrk.sys:record - 1
.define yrs as integer 1
.define y1 as integer 2
.define y2 as integer 2
.define y3 as integer 2
.define y4 as integer 2
.define y5 as integer 2
.define h1 as integer 4
.define h2 as integer 4
.define h3 as integer 4
.define h4 as integer 4
.define h5 as integer 4
.define p1 as integer 4
.define p2 as integer 4
.define p3 as integer 4
.define p4 as integer 4
.define p5 as integer 4
.define r1 as integer 4
.define r2 as integer 4
.define r3 as integer 4
.define r4 as integer 4
.define r5 as integer 4
.define e1 as integer using NNN,NNN
.define e2 as integer using NNN,NNN
.define e3 as integer using NNN,NNN
.define e4 as integer using NNN,NNN
.define e5 as integer using NNN,NNN
.define q1 as integer using NNN,NNN
.define q2 as integer using NNN,NNN
.define q3 as integer using NNN,NNN
.define q4 as integer using NNN,NNN
.define q5 as integer using NNN,NNN
;;
.intro
.let yrs = eyr - byr + 1
;;
.let y1 = byr
.let y2 = byr + 1
.let y3 = byr + 2

```

```

.let y4 = byr + 3
.let y5 = byr + 4
;;
.body
;;
;;
.if fy = y1
.let h1 = h1 + b2
.let p1 = p1 + b7
.let e1 = e1 + d7/1000
.let r1 = r1 + b17
.let q1 = q1 + (d15 + a15 + d16 + a16)/1000
;;
.elseif fy = y2
.let h2 = h2 + b2
.let p2 = p2 + b7
.let e2 = e2 + d7/1000
.let r2 = r2 + b17
.let q2 = q2 + (d15 + a15 + d16 + a16)/1000
;;
.elseif fy = y3
.let h3 = h3 + b2
.let p3 = p3 + b7
.let e3 = e3 + d7/1000
.let r3 = r3 + b17
.let q3 = q3 + (d15 + a15 + d16 + a16)/1000
;;
.elseif fy = y4
.let h4 = h4 + b2
.let p4 = p4 + b7
.let e4 = e4 + d7/1000
.let r4 = r4 + b17
.let q4 = q4 + (d15 + a15 + d16 + a16)/1000
;;
.elseif fy = y5
.let h5 = h5 + b2
.let p5 = p5 + b7
.let e5 = e5 + d7/1000
.let r5 = r5 + b17
.let q5 = q5 + (d15 + a15 + d16 + a16)/1000
.endif
;;
.conclusion
.if yrs = 1

```

CORPS OF ENGINEERS
 [divn] DIVISION A/E LIABILITY PROGRAM SUMMARY
 FOR FY [y1]

.reformat off

Design Deficiencies	[h1(^)]
Number Pursued/ Damage Estimate	[p1(^)]/ \${e1(^)}
Cases Resolved/ Funds Recovered	[r1(^)]/ \${q1(^)}

.elseif yrs = 2

CORPS OF ENGINEERS
 [divn] DIVISION A/E LIABILITY PROGRAM SUMMARY
 FOR FY's [y1] to [y2]

.reformat off

Design Deficiencies	[h1(^)]	[h2(^)]
Number Pursued/ Damage Estimate	[p1(^)]/ \${e1(^)}	[p2(^)]/ \${e2(^)}
Cases Resolved/ Funds Recovered	[r1(^)]/ \${q1(^)}	[r2(^)]/ \${q2(^)}

.elseif yrs = 3

CORPS OF ENGINEERS
 [divn] DIVISION A/E LIABILITY PROGRAM SUMMARY
 FOR FY's [y1] to [y3]

.reformat off

Design Deficiencies	[h1(^)]	[h2(^)]	[h3(^)]
Number Pursued/ Damage Estimate	[p1(^)]/ \${e1(^)}	[p2(^)]/ \${e2(^)}	[p3(^)]/ \${e3(^)}
Cases Resolved/ Funds Recovered	[r1(^)]/ \${q1(^)}	[r2(^)]/ \${q2(^)}	[r3(^)]/ \${q3(^)}

.elseif yrs = 4

CORPS OF ENGINEERS
 [divn] DIVISION A/E LIABILITY PROGRAM SUMMARY
 FOR FY's [y1] to [y4]

.reformat off

	FY[y1(^)]	FY[y2(^)]	FY[y3(^)]	FY[y4(^)]
Design Deficiencies	[h1(^)]	[h2(^)]	[h3(^)]	[h4(^)]
Cases Pursued/ Damage Estimate	[p1(^)]/ \$[e1(^)]	[p2(^)]/ \$[e2(^)]	[p3(^)]/ \$[e3(^)]	[p4(^)]/ \$[e4(^)]
Cases Resolved/ Funds Recovered	[r1(^)]/ \$[q1(^)]	[r2(^)]/ \$[q2(^)]	[r3(^)]/ \$[q3(^)]	[r4(^)]/ \$[q4(^)]

.elseif yrs = 5

CORPS OF ENGINEERS
 [divn] DIVISION A/E LIABILITY PROGRAM SUMMARY
 FOR FY's [y1] to [y5]

.reformat off

	FY[y1(^)]	FY[y2(^)]	FY[y3(^)]	FY[y4(^)]	FY[y5(^)]
Design Deficiencies	[h1(^)]	[h2(^)]	[h3(^)]	[h4(^)]	[h5(^)]
Cases Pursued/ Damage Estimate	[p1(^)]/ \$[e1(^)]	[p2(^)]/ \$[e2(^)]	[p3(^)]/ \$[e3(^)]	[p4(^)]/ \$[e4(^)]	[p5(^)]/ \$[e5(^)]
Cases Resolved/ Funds Recovered	[r1(^)]/ \$[q1(^)]	[r2(^)]/ \$[q2(^)]	[r3(^)]/ \$[q3(^)]	[r4(^)]/ \$[q4(^)]	[r5(^)]/ \$[q5(^)]

.endif

:::

::: ---END OF REPORT---

to continue: CTRL/F6

to print: ALT/F2

```

.report division
;;
;; REPORT: DIVFY.RPT VERSION 1.1
;; LAST EDIT: SEPT. 22, 1987
;; LAST EDITOR: NIE-JIA YAU, BILL EAST
;;
;; This report runs against a sorted and selected database of 4858R called
;; 4858R.SS to provide a comparison of division programs over one year
;;

```

```

.definitions
.define byr = byr in 4858wrk link 4858wrk.sys:record = 1
.map section
;;
.intro

```

A/E LIABILITY DIVISION PROGRAM FISCAL YEAR SUMMARY
FOR FY_[byr]

Divsn	Total Changes	Design Deficiencies	New Pursuit Actions (#, dmg)	Settlements (#/dmg+adm)
-------	------------------	------------------------	---------------------------------	----------------------------

```

;;
.body
;;
.conclusion
;;
.reformat on

```

There have been [b1(s)] with [b2(s)] alleged design deficiencies, [b7(s)] are being pursued. [b17(s)] cases have been resolved with [d17(s)] damages, [a17(s)] admin fixes recovered.

```

;;
;;

```

to continue: CTRL/F6

to print: ALT/F2

```

;;
.break 01 procedure
.break on divn
.break summary
.reformat off
[divn] [b1(s^)] [b2(s^)] [b7(s^)]/[ d7(s^)][b17(s^)]/[ad17(s^)] ]
.break end
;;
;; ---END OF REPORT---

```

```

.report division
;;
;; REPORT: DIVQTR.RPT VERSION 1.1
;; LAST EDIT: SEPT. 22, 1987
;; LAST EDITOR: NIE-JIA YAU, BILL EAST
;;
;; This report runs against a sorted and selected database of 4858R called
;; 4858R.SS to provide a comparison of division programs over one specific
;; fy and quarter.
;;

```

```

.definitions
.define qt as text 3
.define byr = byr in 4858wrk link 4858wrk.sys:record = 1
.define qtr = qtr in 4858wrk link 4858wrk.sys:record = 1
.map section
.intro
.if qtr = 1
.let qt = "1st"
.elseif qtr = 2
.let qt = "2nd"
.elseif qtr = 3
.let qt = "3rd"
.else
.let qt = "4th"
.endif
;;

```

A/E LIABILITY QUARTERLY PROGRAM FOR THE [qt] QUARTER of FY [byr]

Divn	Total Changes	Design Deficiencies	New Pursuit Actions (#, dmg)	Settlements (#/dmg+adm)
------	------------------	------------------------	---------------------------------	----------------------------

```

.body
;;
.conclusion
.reformat on

```

There have been [b1(s)] with [b2(s)] alleged design deficiencies, [b12(s)] are being pursued. [b15(s)] cases have been resolved with [d17(s)] damages, [a17(s)] admin, and [ad17(s)] fixes recovered.

to continue: CTRL/F6 to print: ALT/F2

```

;;
.break 01 procedure
.break on divn
.break summary
.reformat off
[divn] [b1(s^)] [b2(s^)] [b7(s^)]/[ d7(s^)] [b17(s^)]/[ad17(s^)] ]
.break end
;;
;; ---END OF REPORT---

```

```

.REPORT DIVISION
;;
;; Report file name: I.RPT  VERSION 1.1
;; Last Editor: Roger Day
;; This program runs against the Indiv database.
;; Check any match about INDLAST (Lastname) in Indiv database.
;; If so, proceed with the necessary commands.
;; If not, go back to Individual menu (I.DB).
;;
.DEFINITIONS
;;
.define c = "$"
.define s as text 1
.define n as text 5
.define v as text 18
.define w2 as text 2
.define w3 as text 3
.define w4 as text 4
.define w5 as text 5
.define w6 as text 6
.define w7 as text 7
.define w8 as text 8
.define w9 as text 9
.define w10 as text 10
.define w11 as text 11
.define w12 as text 12
.define w13 as text 13
.define w14 as text 14
.define w15 as text 15
.define w16 as text 16
.define w17 as text 17
.define i as integer 2
;;
.MAP SECTION
;;
.INTRO
;;
.input "Accept the selection >" s
.input "Accept the value >" v
;;
.let i = @len(v)
.if s = "F"
.read indiv first @substr(indfirst,1,i) = v
.else
.read indiv first @substr(indlast,1,i) = v
.endif
;;
.if sys:record = 0
.macro (Esc)D(&F3)indiv.ss(End)(Von){^F10}I(Down)
.macro (Von){^F9}{^F6}(Voff){&End}Y
.macro (&Home)UWRindivno.msg~(End)(Down)(Home){f9}wls(Up)(Esc)
.macro (Esc)

```

```

.exit
.endif
;;
.if s = "F"
.let v = indfirst
.let n = "first"
.else
.let v = indlast
.let n = "last"
.endif
;;
.if i = 1
.let w2 = @substr(v,1,i) & c
.elseif i = 2
.let w3 = @substr(v,1,i) & c
.elseif i = 3
.let w4 = @substr(v,1,i) & c
.elseif i = 4
.let w5 = @substr(v,1,i) & c
.elseif i = 5
.let w6 = @substr(v,1,i) & c
.elseif i = 6
.let w7 = @substr(v,1,i) & c
.elseif i = 7
.let w8 = @substr(v,1,i) & c
.elseif i = 8
.let w9 = @substr(v,1,i) & c
.elseif i = 9
.let w10 = @substr(v,1,i) & c
.elseif i = 10
.let w11 = @substr(v,1,i) & c
.elseif i = 11
.let w12 = @substr(v,1,i) & c
.elseif i = 12
.let w13 = @substr(v,1,i) & c
.elseif i = 13
.let w14 = @substr(v,1,i) & c
.elseif i = 14
.let w15 = @substr(v,1,i) & c
.elseif i = 15
.let w16 = @substr(v,1,i) & c
.else
.let w17 = @substr(v,1,i) & c
.endif
;;
macro (End){Von}{^F10}i(Down)
.if i = 1
.macro "[w2]"
.elseif i = 2
.macro "[w3]"
.elseif i = 3
.macro "[w4]"

```

```
.elseif i = 4
 macro "[w5]"
.elseif i = 5
 macro "[w6]"
.elseif i = 6
 macro "[w7]"
.elseif i = 7
 macro "[w8]"
.elseif i = 8
 macro "[w9]"
.elseif i = 9
 macro "[w10]"
.elseif i = 10
 macro "[w11]"
.elseif i = 11
 macro "[w12]"
.elseif i = 12
 macro "[w13]"
.elseif i = 13
 macro "[w14]"
.elseif i = 14
 macro "[w15]"
.elseif i = 15
 macro "[w16]"
.else
 macro "[w17]"
.endif
 macro (Esc)(Esc){&F3}indiv.ss~(&F3)ind[n]-
 .exit
;;
;; END OF REPORT
```

```
.report division
;;
;; REPORT: INDIV.RPT VERSION 1.1
;; LAST EDIT: SEPT. 22, 1987
;; LAST EDITOR: NIE-JIA YAU, BILL EAST
;;
.intro
.body
.reformat off
.let sys:screen=1
```

I N D I V I D U A L S

```
[INDFIRST (>)] [INDLAST (<)]<
```

```
commercial phone: [COMM:PHONE ]< extension: [EXT]<
      FTS phone: [FTS:PHONE ]<
      PAX ID: [PAXID ]<
      office symbol: [OFF:SYMBOL ]< OnTyme ID: [ONTYMEID ]<

title: [TITLE ]<
orgzn: [ORGANIZN ]<
addr1: [ADDRESS1 ]<
addr2: [ADDRESS2 ]<
addr3: [ADDRESS3 ]<

contents: 1 [F1 ]< 2 [F2 ]<
          3 [F3 ]< 4 [F4 ]<
          5 [F5 ]< 6 [F6 ]<
          7 [F7 ]< 8 [F8 ]<
          9 [F9 ]< 10 [F10 ]<
```

Ctrl/F6 to continue....

```
.conclusion
```

```

.REPORT DIVISION
;;
;; REPORT: OPENFILE.RPT VERSION 1.1
;; LAST EDIT: SEPT. 22, 1987
;; LAST EDITOR: ROGER DAY
;;
.DEFINITIONS
.DEFINE F AS TEXT 20
.DEFINE BLNK = " "
.define maxcount = 1
.define count as integer 2
.define nofile as logical y
.MAP SECTION
.INTRO
.let count = 0
.let nofile = yes
.LABEL GETFILE
.let count = count + 1
.LET F = BLNK
.INPUT "ENTER THE FILE NAME > " F
.let nofile = nofile and (F = BLNK)
.IF F NE BLNK
.MACRO (^F9)(^F6){Voff}{&END}Y(&end)y
.MACRO (&HOME)UWC[F]~U~(END){DOWN}(F9)WLS(UP){2x}{down}{ESC}{Von}{HOME}
.macro (Voff){&home}uwropen.msg~(f9)wls(20x){up}{esc}{end}{down}
.endif
.if count LT maxcount
.GOTO GETFILE
.elseif nofile
.macro (^F9)(^F6){Voff}{&End}Y
.macro (Voff){&Home}UWRnofile.msg~(End){Down}{Von}{Home}
.endif
.exit

```

```
.report division
;;
;; Report file name: TASKS.RPT VERSION 1.1
;; Author: Roger Day
;;
.definitions
.define dese as text 12
.define p = pri
.map section
.intro
.reformat on
```

TASKS SUMMARY

generated on [sys:date] at [sys:time]

```
.body
.label again
.break 01 procedure
.break heading
.break on type
.reformat on

      [type]:
.reformat off

.let [dese] = [type]
.break end
.reformat off
      [P(>)] [DESCRIP]
.if [type ne dese]
.goto again
.endif
.conclusion
```

to continue: Ctrl/F6

to print: ALT/F2

```
;;
;; End of report
```

```

.REPORT DIVISION
;;
;; REPORT: VIEWFILE.RPT VERSION 1.1
;; LAST EDITOR: ROGER DAY, NIE-JIA YAU
;;
.DEFINITIONS
.DEFINE F AS TEXT 20
.DEFINE BLNK = " "
.define maxcount = 10
.define count as integer 2
.define nofile as logical y
.MAP SECTION
.INTRO
.let count = 0
.let nofile = yes
.LABEL GETFILE
.let count = count + 1
.LET F = BLNK
.INPUT "ENTER THE FILE NAME > " F
.let nofile = nofile and (F = BLNK)
.IF F NE BLNK
.MACRO (Von){^F9}{^F6}{voff}{&END}Y{&end}y
.MACRO (Voff){&HOME}UWC[F]^U^{&f3}{END}(DOWN)(F9)WLS(UP){2x}{down}{ESC} (HOME)
.macro (&home)uwrapen.msg (f9)wls(20x){up}{esc}{end}{down}{Von}
.endif
.if count LT maxcount
.GOTO GETFILE
.elseif nofile
.macro (Von){^F9}{^F6}{voff}{&End}Y
.macro (&Home)UWRnofile.msg (End)(Down)(Home)
.endif
.exit

```

```

.REPORT DIVISION
;;
;; Report file name: APPOINT.RPT VERSION 1.1
;; LAST EDIT: August 11, 1987
;; LAST EDITOR: NIE-JIA YAU, BILL EAST
;;
.define n as integer 4
.define code as integer 1
.MAP SECTION
.INTRO
.input " " code
.let n = 0
.reformat on

SUMMARY OF APPOINTMENTS
generated on [sys:date]

DATE      TIME  APPOINTMENT      LOCATION      PURPOSE

.BODY
.reformat off
.if code = 0
[DATE] [TIME] [APPOINTMT] [LOCATION] [PURPOSE]
.let n = 1
.elseif date ge sys:date
[DATE] [TIME] [APPOINTMT] [LOCATION] [PURPOSE]
.let n = n + 1
.endif
.CONCLUSION
.if n = 0

        There is no appointment today or later.
.endif
        to continue: CTRL/F6
        to print: ALT/F2
;;
;; End of report

```

APPENDIX B: A/E EASE MENU FILES

FILE NAME: MCM.MNU (Version 1.1)

^ A/E Liability ^
^ Meetings, etc ^
^ Phone Directory ^
^ Tasks and To-Do ^
^ Save Data ^
^ Call ACASS ^
^ eXit to DOS ^

.MENU DIVISION VER-1.0
.W=(001,001,023,078) C-2
.O A (015,033,015,049) A1 (031) ME-A.MC
.HW (001,001,007,078) C-1 T-Use the A/E Liability System by doing Either 1
or 2:
..
.. 1. Press arrow keys to highlight A/E Liability and press Enter.
.. 2. Press the letter a.
..
.. The A/E Liability Management and Analysis
.. System Menu will be displayed
.O M (016,033,016,049) A2 (031) V-3
.CO-UDIS(&F3)appoint~(&F3)~(&F3)~(&F3)@substr(date,1,2)
..~(&F3)@substr(date,4,2)~(&F3)@substr(date,7,2)~(&F3)time~(End)
..(Esc)D~(&F3)~(&F3)date,time,appointmt,location,purpose,notefile~(End)
..(Von){^F10}a
.HW (001,001,007,078) C-1 T-Organize your Daily Schedule by doing
Either 1 or 2:
..
.. 1. Press arrow keys to highlight Meetings, etc and press Enter.
.. 2. Press the letter m.
..
.. After you select this option EASE will take
.. a moment to open the appointments library.
.MS C-1 T-Opening Appointments Library . . .
.O P (017,033,017,049) A3 (031) V-3
.CO-UDIS(&F3)indiv~(&F3)~(&F3)~(&F3)indlast~(&F3)indfirst~(End)
..(Esc)D~(&F3)~(&F3)
..indlast,indfirst,off:symbol,comm:phone,ext,f1,title,ontymeid,address1,
address2,address3,f2,
..f3,f4,f5,f6,f7,f8,f9,f10~(End)(Von){^F10}i
.HW (001,001,007,078) C-1 T- Organize your telephone directory by doing

Either 1 or 2:

```
..
.. 1. Press arrow keys to highlight Phone Directory and press Enter.
.. 2. Press the letter p.
..
.. After you select this option EASE will take
.. a moment to open the Individuals Library.
.MS C-1 T=Opening Individuals Library . . .
.O T (018,033,018,049) M1 (031) V=3
.CO=UDIS(&F3)tasks~(&F3)~(&F3)~(&F3)pri~(&F3)type~(End)
..(Esc)D~(&F3)~(&F3)type,pri,descrip,notefile~(End)
..(Von){^F10}j(PgUp)
.HW (001,001,006,078) C=1 T=Tasks and To-Do:
.. Using the arrow keys to highlight this selection "Tasks and TO-DO"
.. will allow you to access the Topics Library. This library could be
.. a helpful tool to assist you in keeping track of the things you need
.. TO-DO. The tasks may be arranged by topics and given a priority
.. rating if you choose to do so.
.MS C-1 T=Opening Topics Library . . .
.O S (019,033,019,049) A4 (031) V=3
.CO=udi6(&F3)indiv~~~(&F3)appoint~~~(&F3)4858r~~~
..(&F3)tasks~~~(f9)wcUWCsave.asc~~~This means save databases~(F10)SA(F10)QYR
.HW (001,001,007,078) C=1 T=Save EASE and your Data, please have disks
ready, by doing Either 1 or 2:
..
.. 1. Press arrow keys to highlight Save Data and press Enter.
.. 2. Press the letter s.
..
.. After you select this option EASE will take a moment to backup
.. all files in the directory. Further instructions will follow.
.MS C=1 T=Preparing To Save Data . . .
.O C (020,033,020,049) A5 (031) V=3
.CO=UTCU(Pause)acass~~(Von){^F9}{^F6}
..(Esc)(Esc)(Von){!F10}
.HW (001,001,007,078) C=1 T=Call the ACASS system by doing Either 1 or 2:
..
.. 1. Press arrow keys to highlight Call Acass System and press Enter.
.. 2. Press the letter c.
..
.. After you select this option EASE will go to the communications menu.
.MS C=1 T=Accessing ACASS telecommunications program . . .
.O X (021,033,021,049) M5 (031) V=1
.CO=(F2)R
.HW (001,001,007,078) C=1 T=Go to out of EASE by doing either 1 or 2:
..
.. 1. Press arrow keys to highlight eXit to DOS and press Enter.
.. 2. Press the letter x.
..
.. After selecting this option EASE will stop running.
.END
```

FILE NAME: H.MNU (VERSION 1.1)

Graph-Word Processing Menu Help F1

^ Leave Menu to Select Position ^
^ Copy Graph to Cursor Position ^
^ Go to Previous Menu ^

```
.MENU DIVISION VER=1.0
.W=(017,038,022,078) C=1
.O L (003,005,003,035) L1 (003) V=1
.CO=(^f9)(^f6)(von)(^f10)h
.HW (003,004,008,078) C=1 T=Leave Menu to Select Position:
..
.. Leave this menu to select a potion where you want your graph to
.. be copied to. Hit Ctrl/F6 after you have chosen the position.
.O C (004,005,004,035) L2 (003) V=1
.CO=(f9)wg2(F10)GS`odsh{up}{up}d(f9)wg3(f10)m34(&f5)4(&f5){up}
..Alt/F2 to print, Alt/F10 to save
.., Ctrl/F6 to continue...
..{3x}{up}{voff}{f9)wg4(esc)(esc)(esc){f9)wg3(von){^f9){^f6){^f10)h
.HW (005,001,012,078) C=1 T=Copy Graph to Cursor Position: ..
.. Use this option after you have decided that the previous graph be copied
.. to current cursor position.
.. After the graph is copied, the color of this Graph-Word Processing menu will
.. turn into black/white. Do not worry. Colors will come back after leaving
.. this menu.
.O G (005,005,005,035) GO (003) V=1
.CO=(voff){f10)qy(von){^f10)c
.HW (008,001,013,078) C=1 T=Graph-Word Processing Menu:
..
.. Selecting this option will go back to Graph Formating Option Menu.
.END
```

^ Preceding Menu ^ Meetings and Appointments Menu

Help F1

^ Add an Appointment	^	^ Today and Later Appointments	^
^ Leave Menu to Select	^	^ Summary of All Appointments	^
^ Revise an Appointment	^	^ View Appointment Note File	^
^ Delete an Appointment	^	^ Check This Month's Calendar	^

```
.MENU DIVISION VER-1.1
.W=(015,001,022,078) C-1
.O P (001,004,001,019) A8 (002) V-3
.CO=(VOFF){&End}{!F10}{VON}
.HW (006,001,012,078) C-1 T-Previous menu:
..
.. Press the letter "P" to return to the EASE menu.
.O A (004,008,004,031) A6 (006) V-3
.CO=(VOFF){ESC}{ESC}A(&F3)APPOINT~(VON){UP}{^F9}{^F6}{VOFF}{F10}S(F10)Q{ESC}
..S~(&F3)~@substr(DATE,1,2)~@substr(date,4,2)~@substr(date,7,2)~TIME~{ESC}D
..~(&F3)DATE,TIME,APPOINTMT,LOCATION,PURPOSE,NOTEFILE~(VON){^F10}A(down)
.HW (006,001,012,078) C-1 T-Add an entry:
..
.. You will be taken to an input form in order to add a new
.. appointment. Fill in the necessary information and hit Ctrl/F6
.. to save the entry and return you to the library display and this
.. menu.
.MS C-1 T-Opening Note Data Entry Form....
.O T (004,043,004,072) A1 (041) V-3
.CO=(VOFF){ESC}~.MACRO ({!F10})DR~({!&F3})APPOINT.RPT~D({!&F3})
..APPOINT~({!&F3}){~}(PAUSE){&F10}1~(&HOME)UWRAPPOINT~(VON)
..(DOWN){^F9}{^F6}{VOFF}{&END}Y(F10)DD~(&F3)~
..(&F3)date,time,appointmt,location,PURPOSE,NOTEFILE~(VON){^F10}A(down)
.HW (006,001,012,078) C-1 T-Today and later appointments:
..
.. This option will create a word processing file which lists all
.. appointments beginning with today and including all appointments
.. after today's date. When done viewing and/or printing the file,
.. hit Ctrl/F6 to return to the display and this menu.
.MS C-1 T-Preparing Report....
.O L (005,008,005,031) A4 (006) V-1
.CO=(^F9){^F6}{^F10}a(down)
.HW (006,001,012,078) C-1 T-Leave menu to select a line:
..
.. Selecting this option removes the menu temporarily so that you
.. can cursor to another line in preparation for performing an
.. operation related to that line. After you have moved the cursor
.. to the desired line, hit Ctrl/F6 to bring the menu back up.
```

```

.O S (005,043,005,072) A2 (041) V=3
.CO=(VOFF)(ESC)~.MACRO ({}F10{)}DR({})&F3{)}appoint.RPT({})D({})&F3{)}
..APPOINT({})&F3{)}({})~(PAUSE){&F10}0~(&HOME)UWRAPPOINT~(VON)
..(DOWN){^F9}{^F6}(VOFF){&END}Y(F10)DD~(&f3)~(&F3)DATE,TIME,APPOINTMT, LOCATION
.
.PURPOSE,NOTEFILE~(VON){^F10}A(down)
.HW (006,001,012,078) C-1 T-Summary of all appointments:
..
.. This option will create a word processing file which lists all
.. appointments that exist in the Appointments library. When done
.. viewing and/or printing the file, hit Ctrl/F6 to return to the
.. display and this menu.
.MS C-1 T-Preparing Report....
.O R (006,008,006,031) A5 (006) V=3
.CO=(esc)~.macro ({}VOFF{)}({})esc{)}e({})&F3{)}APPOINT({})~({})~({})&F3{)}DATE-
.. "[DATE]" AND TIME="[TIME]"({})~(von){UP}{^F9}{^F6}(VOFF){F10}S(F10)Q(ESC)
.. S~(&F3)~@substr(DATE,1,2)~@substr(date,4,2)~@substr(date,7,2)~TIME~(ESC)D
.. ~(&F3)DATE,TIME,APPOINTMT, LOCATION,PURPOSE,NOTEFILE~(VON){^F10}A
.HW (006,001,012,078) C-1 T-Revise an entry:
..
.. This option will take you to a form to edit the information for the
.. appointment. Change any line you wish. Hitting Ctrl/F6 will save
.. your changes and return you to the library display and this menu.
.MS C-1 T-Opening Appointment Entry Form....
.O V (006,043,006,072) A3 (041) V=3
.CO=(Esc)~(&F3).MACRO ({}F10{)}DR({})&F3{)}openfile.rpt({})~({})&F3{)}
..({})[Notefile]({})~({})~(F10)DD(&F3)appoint.ss~(&F3)~date,time,
.. appointmt,location,purpose,notefile~(Von){^F10}a
.HW (006,001,012,078) C-1 T-View appointment note file:
..
.. The note file which you may associate with the appointment will be
.. opened. You can modify it as you wish. Hit Alt/F2 to print it. To
.. save your changes, hit Alt/F10, and select Accept Options. When
.. done, hit Ctrl/F6 to return to the display and this menu.
.MS C-1 T-Checking For Appointment Note File....
.O D (007,008,007,031) A7 (006) V=3
.CO=(voff)(esc)~.macro ({}esc{)}l({})&F3{)}APPOINT({})~({})&F3{)}DATE-
.. "[DATE]" AND TIME="[TIME]"({})~(ESC)S~(&F3)~@SUBSTR(DATE,1,2)~
.. @substr(date,4,2)~@substr(date,7,2)~TIME~(ESC)D~(&F3)DATE,TIME,
.. APPOINTMT, LOCATION,PURPOSE,NOTEFILE~(VON){^F10}A(down)
.HW (006,001,012,078) C-1 T-Delete an entry:
..
.. This option will delete the appointment on which the cursor is
.. resting. You will see it disappear. After that, you may make
.. another selection from this menu.
.MS C-1 T-Deleting Appointment Entry....
.O C (007,043,007,072) A11 (041) V=3
.CO=(&home)UWRreturn.msg~(F9)WLS(20x){Down}{Esc}{End}{Down}{Home}
.. (&Home)UWC~(F9)WLS(Up){14x}{Left}{37x}{Right}{13x}{Down}{Esc}{End}{Down}

```

```
..(&Home)UWRcal.asc~~(End){Up}{F3}{Home}{Up}
..(F9)WLS(Up){14x}{Left}{37x}{Right}{13x}{Down}{Esc}
..(2x){Down}{&A}{^L}{Down}{F7}{F7}{2x}{Down}{&A}{&V}{6x}{^L}{^Home}{4x}{Down}
..(&F3){^Home}{End}{Down}{Down}{Home}{&V}{Von}{^F9}{^F6}{Voff}{&End}y{&End}y
..(&End}y{Von}{^F10}a{Down}
.HW (006,001,012,078) C-1 T-Check this month's calendar:
..
.. A window containing the current month's calendar will be displayed.
.. Your computer time and date must be set correctly for this feature.
.. You can print the calendar by hitting Alt/F2. When done viewing
.. the calendar, hit Ctrl/F6 to return to the display and menu.
.MS C-1 T-Opening Calendar....
.END
```

Help F1

A/E Liability Management and
Analysis System

^ Enter Data ^
^ Summary Reports ^
^ Graphic Reports ^
^ Previous Menu ^

.MENU DIVISION VER=1.0
.W-(003,017,013,062) C-1
.O E (006,016,006,032) A1 (014) V=3
.CO-UDIS(&F3)4858R~(&F3)~(&F3)~(&F3)fy,d~(&F3)q,d~(&f3)off,a~(End)
..(Esc)D~(&F3)~(&F3)fy,q,off,divn,b1,b2,b8,b12,d12,b17,d17,a17(End)
..(Von) (^F10)e
.HW (015,001,022,078) C-1 T-There are several functions of the Enter Data selection in addition to
.. entering data. The first thing which you will notice is that the
.. most recently entered data is shown on the upper half of the screen.
.. In the bottom right of the screen is the new menu. The advantage of
.. this presentation is that you are able to view data without needing
.. to run a report. Once the menu is on the screen you will be able to
.. add data. You will notice that one of the data records is highlighted
.. in yellow. This indicates the data which may be revised or deleted.
.MS C-1 T-Opening A/E 4858R (Summary of A/E Liability) Library. . .
.O S (007,016,007,032) A2 (014) ME=B.MC
.HW (016,001,022,078) C-1 T-There are nine reports which are currently available from the information
.. provided by the Summary of A/E Liability form. These reports come in
.. three basic styles which review the following: (1) up to five years of
.. data, (2) one specific time period comparing organizaions, and (3) the
.. summation of data on the Summary of A/E Liability form.
..
.. any comments regarding these reports would be much appreciated.
.O G (008,016,008,032) A3 (014) V=3
.CO-UDIS(&F3)graphs~(&F3)~(&F3)~(&F3)gn,a~(&F3)mt,a~(End)
..(Esc)D~(&F3)~(&F3)gn,mt,ms,xt,xs,yt,ys,l,n,
..y1,y2,y3,y4,y5,y6,y7,y8,y9,y10,
..x1,x2,x3,x4,x5,x6,x7,x8,x9,x10~(End)(von)(^f10)g
.HW (015,001,022,078) C-1 T-There are several functions of the Graphics which should be mentioned.
.. When you select this option you will notice that the graphs which are
.. available are listed at the top of the screen and the menu is at the
.. bottom right hand side of the screen. You may select bar, pie, and line
.. charts and then change the data, style, colors, and text. AT THIS TIME
.. data from the A/E Liability database DOES NOT automatically move into

.. this database YOU must revise the data or add a new graphic report.
.. Future versions past the current release (v1.3a) may include this feature.
.MR C-1 T-
.O P (009,016,009,032) A8 (014) ME-MCM.MNU
.HW (016,001,021,078) C-1 T-
.. To go back to the EASE main menu do Either 1 or 2:
..
.. 1. Press arrow keys to highlight Previous Menu and press Enter.
.. 2. Press the letter p.
.END

^Preceding Menu^ Telephone and Individual Menu Help F1

^ Add Another Person	^	^ Leave Menu to Select Person	^
^ Revise an Entry	^	^ Individual Report	^
^ Delete a Person	^	^ View Files for a Person	^
^	^	<-- Search By Last Name	
^	^	<-- Search By First Name	

.MENU DIVISION VER-1.0

.W=(015,015,022,078) C-1

.O P (001,005,001,018) A8 (003) V-3

.CO=(Voff){&End}{!F10}{Von}

.MR C-1 T-Returning to preceding Menu...

.O A (003,006,003,026) A6 (004) V-3

.CO=(voff){Esc}{esc}a~~(von){up}{^f9}{^f6}{voff}{f10}s(f10)q(esc)

..s(end){esc}d(end){von}{^f10}I(down)

.HW (006,001,012,078) C-1 T-Add an entry:

.. You will be taken to an input form in order to add information on
.. a new individual. Fill out the items you desire and hit Ctrl/F6 to
.. save the entry and return you to the library display and this menu.

.MS C-1 T-opening input form....

.O L (003,032,003,060) A4 (030) V-1

.CO=(^F9){^F6}{^F10}i(down)

.HW (006,001,012,078) C-1 T-Leave menu to select a line:

.. Selecting this option removes the menu temporarily so that you
.. can cursor to another line in preparation of performing an
.. operation related to that line. After you have moved the cursor
.. to the desired line, hit Ctrl/F6 to bring the menu back up.

.O R (004,006,004,026) A5 (004) V-3

.CO=(voff){Esc}~{&f3}.macro {()}esc{}e{~}{~}{~}{&f3{}}SYS:RECORD=[SYS:RECORD]

..{~}{~}{~}{von}{up}{^f9}{^f6}{voff}{f10}s(f10)q(esc)

..s~{&f3}{end}{esc}d(end){von}{^f10}i(down)

.HW (006,001,012,078) C-1 T-Revise an entry:

.. This option will take you to an input form to edit the information
.. for the individual. Change any line you wish. Hitting Ctrl/F6
.. will save your changes and return you to the library display
.. and this menu.

.MS C-1 T-opening input form....

.O I (004,032,004,060) A1 (030) V-3

.CO=(Voff){esc}~.MACRO {()}F10{}DR{~}{~}{~}{&f3{}}INDIV.RPT{~}D{~}{&f3{}}INDIV

..{~}{~}{~}{&f3{}}SYS:RECORD=[SYS:RECORD]{~}{~}{~}{PAUSE}{&f10}{~}{&HOME}UWRINDIV~{f9}

..wls(up){esc}{end}{down}{home}{von}{down}{up}

..{^f9}{^f6}{VOFF}{&END}Y{F10}DD~{&f3}{END}{VON}{^f10}I(down)

.HW (006,001,012,078) C-1 T-Individual report:

.. This report shows individual information and lists files which you have associated with same. Hit Alt/F2 to print the report. To save the report, hit Alt/F10, select Change Options, and give the file a new name. When done, hit Ctrl/F6 to return to the library display and this menu.

.MS C-1 T-preparing report....

.O D (005,006,005,026) A7 (004) V=3

.CO={voff}{Esc}~{&F3}.macro ({}esc{}))1({}&f3{}))indiv(~){~}({}&F3{}))SYS:RECORD-

..[sys:record]{~}~(esc)s~{&F3}{end}{esc)d(end){von} (^f10)i(down)

.HW (006,001,012,078) C-1 T-Delete an entry:

.. This option will delete the individual entry on which the cursor is resting. You will see it disappear. After that, you may make another selection from this menu.

.MS C-1 T-deleting entry....

.O V (005,032,005,060) A2 (030) V=3

.CO={Voff}{Esc}~.MACRO ({}F10{}))DR(~){({}&F3{}))viewfile.rpt(~){~}

..({}&F3{}))~)[F1]{~}[F2]{~}[F3]{~}[F4]{~}[F5]{~}[F6]{~}[F7]{~}[F8]{~}[F10]{~}

..~{Esc}D~{&F3}~{&F3}indlast,indfirst,off:symbol,comm:phone,ext,fl,title,

..ontymeid,address1,address2,address3,f1,f2,f3,f4,f5,f6,f7,f8,f9,f10~

..{Von} (^F10)i

.HW (006,001,012,078) C-1 T-View files for individual:

.. Files (if any) you have associated with the individual will be sequentially opened. Ctrl/F6 will take you to the next file or back to the display and this menu after the last file. When a file is open, you can modify and resave it. Hit Alt/F2 to print it.

.MS C-1 T-opening files....

.O ^D (006,006,006,026) X (004) V=3 DA=(000,021,004,000)

.CO={voff}{f10}dr{&f3}indiv~{&f3}i.rpt(end)L~[%X]~(von)

.IW (002,042,010,078) C-1 T-

.. Enter as much of an individual's last name as you desire and hit Enter. You can enter from 1 to 21 characters. If the string you enter cannot be found, you will receive a message and return to this menu after hitting Ctrl/F6.

.MS C-1 T-Searching for last name...

.O ^D (007,006,007,026) Y (004) V=3 DA=(000,021,004,000)

.CO={voff}{F10}DR{&F3}INDIV~{&F3}I.RPT(END)F~[%Y]~(von)

.IW (002,043,010,078) C-1 T-

.. Enter as much of an individual's first name as you desire and hit Enter. You can enter from 1 to 21 characters. If the string you enter cannot be found, you will receive a message and return to this menu after hitting Ctrl/F6.

.MS C-1 T-Searching for First Name....

.END

^ Preceding Menu ^	Topics and TO-DO Lists	Help F1
^ Add a New Topic ^	^ Leave Menu to Select Topic ^	
^ Revise a Entry ^	^ View Files for a Topic ^	
^ Delete a Topic ^	^ Topics Report ^	

```
.MENU DIVISION VER=1.0
.W=(017,015,022,078) C=1
.O P (001,007,001,023) A8 (005) V=3
.CO=(VOFF){&End}{!F10}{Von}{PgUp}
.HW (008,009,012,072) C=1 T=Preceding Menu:
..
.. Selection of this option will go back to EASE menu.
.MS C=1 T=returning to preceding menu....
.O A (003,008,003,024) A6 (006) V=3
.CO=(voff){esc}{esc}a~~(von){up}{^f9}{^f6}{voff}{f10}s(f10)q(esc)
..s(end){esc}d(end){von}{^f10}j{PgUp}
.HW (006,001,012,078) C=1 T=Add an entry:
..
.. You will be taken to an input form in order to add a new topic.
.. Fill in the necessary information and hit Ctrl/F6 to save the
.. entry and return you to the library display and this menu.
.MS C=1 T=opening input form....
.O L (003,034,003,061) A4 (032) V=1
.CO-({^F9}){(^F6)}{(^F10)}j{down}
.HW (006,001,012,078) C=1 T=Leave menu to select a line:
..
.. Selecting this option removes the menu temporarily so that you
.. can cursor to another line in preparation for performing an
.. operation related to that line. After you have moved the cursor
.. to the desired line, hit Ctrl/F6 to bring the menu back up.
.O R (004,008,004,024) A5 (006) V=3
.CO=(voff){esc}~(&F3).macro {{}esc{}e{~}{~}{{}}&F3{}}sys:record=[sys:record]
..{~}~~(von){up}{^f9}{^f6}{voff}{f10}s(f10)q(esc)
..s~(&F3){end}{esc}d(end){von}{^f10}j{PgUp}
.HW (006,001,012,078) C=1 T=Revise an entry:
..
.. This option will take you to a form to edit the information for
.. the topic. Change any line you wish. Hitting Ctrl/F6 will save
.. your changes and return you to the library display and this menu.
.MS C=1 T=opening input form....
.O V (004,034,004,061) A2 (032) V=3
.CO-({Voff}){ESC}~(&F3).MACRO {{}F10{}}DR{~}{{}}&F3{}}VIEWFILE.RPT{~}{~}
..{{}}&F3{}}{~}[notefile]{~}{~}{~}{~}{~}{~}{~}{~}
..{~}~{Voff}{F10}DD~(&F3){End}{VON}{^F10}j{PgUp}
.HW (006,001,012,078) C=1 T=View files for topic:
..
```

```

.. Files (if any) which you have associated with the topic will be
.. sequentially opened. When a file is open, you can modify and resave
.. it. Hit Alt/F2 to print it. Ctrl/F6 will take you to the next file
.. or back to the display and this menu after the last file.
.MS C-1 T-checking for files....
.O D (005,008,005,024) A7 (006) V-3
.CO=(voff)(esc)~(&F3).macro
({)esc()1({)&F3()}tasks(~){~}({)&F3()}sys:record=
..[sys:record]{~}(esc)S(&F3)tasks~(&F3)~(&F3)~(&F3)
.. {&F3}pri~(&F3)type~(End)
..(Esc)D~(&F3)~(&F3)type,pri,descrip,notefile~(End){Von}{^F10}j{PgUp}
.HW (006,001,012,078) C-1 T-Delete an entry:
..
.. This option will delete the topic on which the cursor is resting.
.. You will see it disappear. After that, you may make another
.. selection from this menu.
.MS C-1 T-deleting topic entry....
.O T (005,034,005,061) A1 (032) V-3
.CO=(Voff)(ESC)~.MACRO ({}F10{})DR(~){({)&F3()}tasks.rpt(~)D({)&F3()}
..tasks(~){({)&F3()}{~}~(PAUSE){&F10}~(&HOME)
..uwrtasks~(end){DOWN}{home}{von}{^F9}{^F6}{Voff}{&END}Y{F10}DD~(&F3){END}
..(von){^f10}j{PgUp}
.HW (006,001,012,078) C-1 T-Topics report:
..
.. This report describes the topic and lists files which are related to
.. the topic. Hit Alt/F2 to print the report. To save the report, hit
.. Alt/F10, select Change Options, and give the file a new name. When
.. done, hit Ctrl/F6 to return to the library display and this menu.
.MS C-1 T-preparing report....
.END

```

Data Entry Menu

Help F1

- ^ Add an Entry ^
- ^ Leave Menu to Select ^
- ^ Revise Selected Entry ^
- ^ Delete Selected Entry ^
- ^ Previous Menu ^

.MENU DIVISION VER=1.0
.W=(015,028,022,078) C=1
.O A (003,012,003,034) A6 (010) V=3
.CO=(Esc)(Esc)A~(&F3)4858in~(Von){^F9}{^F6}{Voff}{F10}S(F10)Q(Esc)
..S(End)(Esc)
..D~(&F3)~(&F3)fy,q,off,divn,b1,b2,b8,b12,d12,b17,d17,a17(End)(Von){^F10}e
.HW (006,001,012,078) C=1 T=Add an entry:
..
.. You will be taken to an input form in order to add information onto
.. the summary db. Fill out the items you desire and hit Ctrl/F6 to
.. save the entry and return you to the summary display and this menu.
.MS C=1 T=opening input form....
.O L (004,012,004,034) E4 (010) V=1
.CO={^F9}{^F6}{^F10}e
.HW (006,001,012,078) C=1 T=Leave menu to select a line:
..
.. Selecting this option removes the menu temporarily so that you
.. can cursor to another line in preparation of performing a
.. revision related to that line. After you have moved the cursor
.. to the desired line, hit Ctrl/F6 to bring the menu back up.
.O R (005,012,005,034) E5 (010) V=3
.CO=(Esc)(Esc)E(&F3)4858R.SS~(&F3)4858in~.macro ({}&F3{)}
..sys:record=[sys:record]{ }~(Von){Up}{^F9}{^F6}{Voff}{F10}S~(Esc){Esc}
..D~(&F3)~(&F3)fy,q,off,divn,b1,b2,b8,b12,d12,b17,d17,a17(End)(Von){^F10}e
.HW (006,001,012,078) C=1 T=Revise an entry:
..
.. This option will take you to an input form to edit the information
.. for the summary db. Change any line you wish. Hitting Ctrl/F6
.. will save your changes and return you to the summary display
.. and this menu.
.MS C=1 T=opening input form....
.O D (006,012,006,034) A7 (010) V=3
.CO=(Esc)(Esc)l(F3)4858R.SS~.macro ({}&F3{)}sys:record=
..[sys:record]{ }~(Esc)S(&F3)4858R~(&F3)~(&F3)~(&F3)fy,d~
..(&F3)q,d~(&F3)off,a~(End)(Esc)D~(&F3)~(&F3)
..fy,q,off,divn,b1,b2,b8,b12,d12,b17,d17,a17(End)(Von){^F10}e
.HW (006,001,012,078) C=1 T>Delete an entry:
..
.. This option will delete the summary entry on which the cursor

.. is resting. You will see it disappear. After that, you may make
.. another selection from this menu.
.MS C-1 T-deleting entry....
.O P (007,012,007,034) A8 (010) V-3
.CO-(&end)(!F10)a(von)
.HW (006,001,011,078) C-1 T-Previous Menu:
..
.. Selecting this option will go back to A/E Liability Menu.
.MS C-1 T-returning to previous menu....
.END

FILE NAME: B.MC (Version 1.1)

^ Previous Menu ^ Summary Report Menu Help F1

Corpswide:
^A: CMDRS Rpt ^ ^B: FY Total ^ ^C: Non-Responsive ^

For Divisions:
^D: CMDRS Rpt ^ ^E: Historical ^ ^F: Program Comparision^

For Districts:
^G: FY Total ^ ^H: Historical ^ ^I: Quarterly Report ^

.MENU DIVISION VER=1.0
.W=(001,001,022,078) C=1
.O P (003,008,003,022) A10 (006) V=3
.CO=(!f10)a
.IW (013,005,020,074) C=1 T=You may do any of the following :
..
.. 1. Since you are highlighting the Previous Menu option press
.. Enter to Return to the A/E Liability Management System menu.
.. 2. Press arrow keys to highlight reports you want to run. Press
.. Enter to execute the report
.. 3. Press the first letter of the report to avoid having to
.. scroll through the entries.
.HW (014,001,018,078) C=1 T=Previous Menu:
..
.. Selecting this option will go back to A/E Liability Menu.
.MR C=1 T=
.O A (005,008,005,022) SEL1 (006) V=3
.CO=UWRWAIT.MSG~(End)(Down){&Home}
..UDIE(&F3)4858wrk~(&F3)corpfys~~sys:record=1~(Von)
..(^F9){^F6}{Voff}{F10}S{Esc}{Esc}
..9(&F3)4858sel~(&F3)4858sel.rpt(End)A(Von)~
.IW (013,005,019,074) C=1 T=
.. Please enter the beginning fiscal year ..>
..
.. Please enter the ending fiscal year>
.HW (013,005,019,074) C=1 T=REPORT A:
..
.. THIS REPORT TOTALS THE NUMBER OF DESIGN DISCREPANCIES, ESTIMATED
.. SETTLEMENT, CASES PURSUED, CASES RESOLVED, VALUE RECIEVED FOR THE
.. ENTIRE CORPS OVER A RANGE OF FISCAL YEARS. (MAXIMUM 5 YEARS)
.MS C=1 T=
.O B (005,029,005,043) SEL2 (027) V=3
.CO=UWRWAIT.MSG~(End){Down}{&Home}
..UDIE(&F3)4858wrk~(&F3)corpfy~~sys:record=1~(Von)
..(^F9){^F6}{Voff}{F10}S{Esc}{Esc}
..9(&F3)4858sel~(&F3)4858sel.rpt(End)B(Von)~
.IW (013,005,019,074) C=1 T=

..
.. Please enter the fiscal year>
.. HW (013,005,019,074) C-1 T-REPORT B:

.. THIS REPORT WILL SUM ALL THE DATA IN THE SUMMARY DATABASE DURING
.. THE USER SPECIFIED FISCAL YEAR AND THEN PRINT THE RESULTS IN THE
.. SAME FORMAT AS 4858 FORM WHICH IS USED BY EACH REPORTING ORGANI-
.. ZATION TO SEND IN THE DATA.

.. MS C-1 T-
.. O C (005,050,005,071) SEL3 (048) V-3
.. CO-UWRWAIT.MSG~(End)(Down)(&Home)
.. UDIE(&F3)4858wrk~(&F3)corpqtr~~sys:record-1~(Von)
.. (^F9)(^F6)(Voff)(F10)S(Esc)(Esc)
.. 9(&F3)4858sel~(&F3)4858sel.rpt(End)C(Von)~
.. IW (013,005,019,074) C-1 T-
.. Please enter the fiscal year>

.. Please enter the quarter (1 thru 4)>
.. HW (013,005,019,074) C-1 T-REPORT C:

.. THIS REPORT PROVIDES DISTRICTS WHICH FAILED TO REPORT DURING A
.. SPECIFIC FISCAL YEAR AND QUARTER.

.. MS C-1 T-
.. O D (007,008,007,022) SEL4 (006) V-3
.. CO-UWRWAIT.MSG~(End)(Down)(&Home)
.. UDIE(&F3)4858wrk~(&F3)divfy~~sys:record-1~(Von)
.. (^F9)(^F6)(Voff)(F10)S(Esc)(Esc)
.. 9(&F3)4858sel~(&F3)4858sel.rpt(End)D(Von)~
.. IW (013,005,019,074) C-1 T-

.. Please enter the fiscal year>
.. HW (013,005,019,074) C-1 T-REPORT D:

.. THIS REPORT PROVIDES A COMPARISON OF DIVISION PROGRAMS OVER
.. A SPECIFIC FISCAL YEAR.

.. MS C-1 T-
.. O E (007,029,007,043) SEL5 (027) V-3
.. CO-UWRWAIT.MSG~(End)(Down)(&Home)
.. UDIE(&F3)4858wrk~(&F3)divfys~~sys:record-1~(Von)
.. (^F9)(^F6)(Voff)(F10)S(Esc)(Esc)
.. 9(&F3)4858sel~(&F3)4858sel.rpt(End)E(Von)~
.. IW (013,005,019,074) C-1 T-Please enter the beginning fiscal year
..>

.. Please enter the ending fiscal year>
.. EUD HND LMVD MRD NAD NCD NED
.. NPJ ORD PODV SPD SAD SWD
.. Please select the division that you want >
.. HW (013,005,019,074) C-1 T-REPORT E:

.. THIS REPORT PROVIDES A HISTORICAL INFORMATION FOR ONE DIVISION.
.. (5 FISCAL YEARS MAXIMUM.)

```

..MS C-1 T-
..O F (007,050,007,071) SEL6 (048) V-3
..CO-UWRWAIT.MSG~(End)(Down)(&Home)
..UDIE(&F3)4858wrk~(&F3)divqtr~sys:record-1~(Von)
..(^F9)(^F6)(Voff)(F10)S(Esc)(Esc)
..9(&F3)4858sel~(&F3)4858sel.rpt(End)F(Von)~
..IW (013,005,019,074) C-1 T-
.. Please enter the fiscal year .....>

..
.. Please enter the quarter (one digit) .....>
..HW (013,005,019,074) C-1 T-REPORT F:

..
.. THIS REPORT PROVIDES A COMPARISON OF DIVISION PROGRAMS OVER ONE
.. SPECIFIC FISCAL YEAR AND QUARTER.
..MS C-1 T-
..O G (009,008,009,022) SEL7 (006) V-3
..CO-UWRWAIT.MSG~(End)(Down)(&Home)
..UDIE(&F3)4858wrk~(&F3)disfy~sys:record-1~(Von)
..(^F9)(^F6)(Voff)(F10)S(Esc)(Esc)
..9(&F3)4858sel~(&F3)4858sel.rpt(End)G(Von)~
..IW (013,005,019,074) C-1 T-
.. Please enter the fiscal year .....>
.. EUD HND LMVD MRD NAD NCD NED
.. NPD ORD PODV SPD SAD SWD
.. Please select the division that you want >
..HW (013,005,019,074) C-1 T-REPORT G:

..
.. THIS REPORT PROVIDES A COMPARISON OF DISTRICT PROGRAMS OVER ONE
.. FISCAL YEAR FOR ONE SPECIFIED DIVISION.
..MS C-1 T-
..O H (009,029,009,043) SEL8 (027) V-3
..CO-UWRWAIT.MSG~(End)(Down)(&Home)
..UDIE(&F3)4858wrk~(&F3)disfys~sys:record-1~(Von)
..(^F9)(^F6)(Voff)(F10)S(Esc)(Esc)
..9(&F3)4858sel~(&F3)4858sel.rpt(End)H(Von)~
..IW (013,005,019,074) C-1 T-Please enter the beginning fiscal year ...>
.. Please enter the ending fiscal year .....>
.. EUD HND LMM LMN LMS LMK MRK MRO NAB NAN NAO NAP NCB NCC NCE
.. NCR NCS NED NPA NPP NPS NPW ORH ORL ORN ORP POD POF POJ SAC
.. SAI SAJ SAM SAS SAW SPK SPL SPN SWA SWF SWG SWL SWT
.. Please select the district that you want >
..HW (013,005,019,074) C-1 T-REPORT H:

..
.. THIS REPORT PROVIDES HISTORICAL INFORMATION FOR ONE SPECIFIC
.. DISTRICT. (5 FISCAL YEARS MAXIMUM)
..MS C-1 T-
..O I (009,050,009,071) SEL9 (048) V-3
..CO-UWRWAIT.MSG~(End)(Down)(&Home)
..UDIE(&F3)4858wrk~(&F3)disqtr~sys:record-1~(Von)
..(^F9)(^F6)(Voff)(F10)S(Esc)(Esc)
..9(&F3)4858sel~(&F3)4858sel.rpt(End)I(Von)~

```

```
.IW (013,005,019,074) C-1 T-Please enter the fiscal year .....>
.. Please enter the quarter (one digit) ....>
.. EUD HND LMM LMN LMS LMK MRK MRO NAB NAN NAO NAP NCB NCC NCE
.. NCR NCS NED NPA NPP NPS NPW ORH ORL ORN ORP POD POF POJ SAC
.. SAI SAJ SAM SAS SAW SPK SPL SPN SWA SWF SWG SWL SWT
.. Please select the district that you want >
.HW (013,005,019,074) C-1 T-REPORT I:
..
.. THIS REPORT PROVIDES INFORMATION OF A SPECIFIC DISTRICT AND
.. QUARTER OF ONE FISCAL YEAR, THE RESULT LOOKS LIKE ENG FORM 4858R.
.MS C-1 T-
.END
```

Graphics Menu Help F1

^ Add a Graph ^ ^ View Graph at Cursor ^
 ^ Delete a Graph ^ ^ Leave Menu to Select ^
 ^ Revise a Graph ^ ^ Previous Menu ^

```
.MENU DIVISION VER=1.0
.W=(017,024,022,078) C=1
.O A (003,006,003,021) A6 (004) V=3
.CO={Esc}{esc)a~~(von){up}{^f9}{^f6}{voff}{f10}s(f10)q(esc)
..s(end){esc)d(end){von}{^f10}g(down)
.HW (006,001,012,078) C=1 T=Add an entry:
..
.. You will be taken to an input form in order to add information on
.. a new graph. Fill out the items you desire and hit Ctrl/F6 to save
.. the entry and return you to the library display. Cursor to the
.. desired line and hit Ctrl/F6 again for this menu.
.MS C=1 T=opening input form....
.O V (003,029,003,050) A1 (027) ME=O.DB
.HW (006,001,012,078) C=1 T=View the graph at the cursor:
..
.. You will be given another menu from which to choose the format
.. for the graph. The graph will then be displayed. When done
.. viewing the graph, hit Ctrl/F6 which will take you to the spread-
.. sheet used to construct the graph and a menu of additional choices
.. will appear.
.O D (004,006,004,021) A7 (004) V=3
.CO={esc}~(&F3).macro ({}esc{})l({}&F3())graphs(~){~}({}&F3())GN="[GN]"
..(~){~}{esc}s~(&f3)(end){esc)d(end){von}{^f10}g
.HW (006,001,012,078) C=1 T>Delete an entry:
..
.. This option will delete the graph on which the cursor is resting.
.. You will see it disappear. Cursor to the desired line and hit
.. Ctrl/F6 to bring back this menu.
.MS C=1 T=deleting graphs entry....
.O L (004,029,004,050) A4 (027) V=1
.CO={^F9}{^F6}{^F10}g
.HW (006,001,012,078) C=1 T=Leave menu to select a line:
..
.. Selecting this option removes the menu temporarily so that you
.. can cursor to another line in preparation of performing an
.. operation related to that line. After you have moved the cursor
.. to the desired line, hit Ctrl/F6 to bring the menu back up.
.O R (005,006,005,021) A5 (004) V=3
.CO={Esc}~(&f3).macro ({}esc{})e{~}{~}({}&F3())GN="[GN]"
..(~){~}(von){up}{^f9}{^f6}{voff}{f10}s(f10)q(esc)
..s~(&f3)(end){esc)d(end){von}{^f10}g
```

.HW (006,001,012,078) C-1 T-Revise an entry:

..
.. This option will take you to an input form to edit the information
.. for the graph. Change any item you wish. Hitting Ctrl/F6 will save
.. your changes and return you to the library display. Cursor to the
.. desired line and hit Ctrl/F6 again for this menu.

.MS C-1 T-opening input form....

.O P (005,029,005,050) A8 (027) V-3

.CO-(&end)(!f10)a(von)

.HW (008,001,013,078) C-1 T-Previous Menu:

..
.. Selecting this option will go back to A/E Liability Menu.

.MS C-1 T-returning to previous menu . . .

.END

Graph Type	Help F1
^ 2-D Bar	^
^ 3-D Bar	^
^ Std Pie	^
^ eXpl Pie	^
^ Line	^
^ Previous	^

```
.MENU DIVISION VER=1.0
.W=(015,001,022,027) C=1
.O 2 (003,008,003,017) O9 (006) V=3
.CO=(voff)(esc)~.macro ({}&home())uscspread(~/wgl2(~/{}9x{}))
..({}down())[y10]({}up())[y9]({}up())[y8]({}up())[y7]({}up())[y6]({}up())
..[y5]({}up())[y4]({}up())[y3]({}up())[y2]({}up())[y1]({}~/gc[gn]({}~
..ogcb(up)gl3(up)gtv2(up)lcg(4x){up}{f10}mol(&f3)~{von}({^f10)m
.IS C=3 T=
.HW (006,001,012,078) C=1 T=2-dimensional Bar chart:
..
.. Values for the graph will be moved to a spreadsheet and displayed
.. as a two dimensional bar chart. When done viewing the graph, hit
.. Ctrl/F6 which will return you to the spreadsheet and bring up a
.. menu for additional choices.
.MS C=1 T=please wait....
.O 3 (004,008,004,017) O10 (006) V=3
.CO=(VOFF)(esc)~.macro ({}&home())uscspread(~/wgl2(~/{}9x{}))
..({}down())[y10]({}up())[y9]({}up())[y8]({}up())[y7]({}up())[y6]({}up())
..[y5]({}up())[y4]({}up())[y3]({}up())[y2]({}up())[y1]({}~/gc[gn]({}~
..ogcb(up)gl3(up)gtv3(up)lcg(4x){up}{f10}mol(&f3)~{Von}({^f10)m
.IS C=3 T=
.HW (006,001,012,078) C=1 T=3-dimensional bar chart:
..
.. Values for the graph will be moved to a spreadsheet and displayed
.. as a three dimensional bar chart. When done viewing the graph, hit
.. Ctrl/F6 which will return you to the spreadsheet and bring up a
.. menu for additional choices.
.MS C=1 T=please wait....
.O S (005,008,005,017) O11 (006) V=3
.CO=(VOFF)(esc)~.macro ({}&home())uscspread(~/wgl2(~/{}9x{}))
..({}down())[y10]({}up())[y9]({}up())[y8]({}up())[y7]({}up())[y6]({}up())
..[y5]({}up())[y4]({}up())[y3]({}up())[y2]({}up())[y1]({}~/gc[gn]({}~
..ogcb(up)gl3(up)gtptsse(3x){up}lcg(4x){up}{f10}mol(&f3)~{Von}({^f10)m
.IS C=8 T=
.HW (006,001,012,078) C=1 T=Standard Pie chart:
..
.. Values for the graph will be moved to a spreadsheet and displayed
.. as a standard pie chart. When done viewing the graph, hit
```

```

.. Ctrl/F6 which will return you to the spreadsheet and bring up a
.. menu for additional choices.
.MS C-1 T-please wait....
.O X (006,008,006,017) 012 (006) V-3
.CO-(VOFF)(esc)~.macro ({}&home{})uscspread(~/wgl2(~/{}9x{}))
..({}down{})[y10]({}up{})[y9]({}up{})[y8]({}up{})[y7]({}up{})[y6]({}up{})
..[y5]({}up{})[y4]({}up{})[y3]({}up{})[y2]({}up{})[y1]({}~/gc[gn]{}~
..ogcb(up)gl3(up)gtptese(3x){up}lcg(up)ley(4x){up}{f10}mol(&f3)~(Von){^f10}m~
.IS C-6 T-
.HW (006,001,012,078) C-1 T-Exploded Pie chart:
..
.. Values for the graph will be moved to a spreadsheet and displayed
.. as an exploded pie chart. When done viewing the graph, hit
.. Ctrl/F6 which will return you to the spreadsheet and bring up a
.. menu for additional choices.
.MS C-1 T-please wait....
.O L (007,008,007,017) 013 (006) V-3
.CO-(VOFF)(esc)~.macro ({}&home{})uscspread(~/wgl2(~/{}9x{}))
..({}down{})[y10]({}up{})[y9]({}up{})[y8]({}up{})[y7]({}up{})[y6]({}up{})
..[y5]({}up{})[y4]({}up{})[y3]({}up{})[y2]({}up{})[y1]({}~/gc[gn]{}~
..ogcb(up)gl3(up)gtl(up)lcg(4x){up}{f10}mol(&f3)~(von){^f10}m~
.IS C-1 T-
.HW (006,001,012,078) C-1 T-Line chart:
..
.. Values for the graph will be moved to a spreadsheet and displayed
.. as a line chart. When done viewing the graph, hit Ctrl/F6 which
.. will return you to the spreadsheet and bring up a menu for
.. additional choices.
.MS C-1 T-please wait....
.O P (008,008,008,017) A8 (006) V-1
.CO-(Von){^F10}g
.END

```

FILE NAME: M.DB (Version 1.1)

^ completing data entry for graph.... ^

```
.MENU DIVISION VER=1.0
.W=(015,001,022,078) C=1
.O C (004,015,004,064) A1 (013) V=3
.CO=(esc) .macro ((f10))m132((home))((right))((9x))((down))[x10]
.. ((up))[x9]((up))[x8]((up))[x7]((up))[x6]((up))[x5]((up))[x4]
..((up))[x3]((up))[x2]((up))[x1]((home)) (f10)mwol(&f3)
..{Von) (^F10)n
.END
```

FILE NAME: N.DB (Version 1.1)

^ preparing to display the graph.... ^

```
.MENU DIVISION VER-1.0
.W=(015,001,022,078) C-1
.O C (004,015,004,064) A1 (013) V-3
.CO=(voff){esc}~.macro ({}f10{})m132({}f10{})gs(~)odsh({}up{})ldA1..A[n]
.. (~)14(~)1[1]{}({}up{})ggbaxgyilb1..b[n]{}({}up{})HM[MT]{} X[XT]{}Y[YT]
.. (~)1[MS]{}2[XS]{}3[YS]{}({}up{})({}up{})({}up{})~(VON)D
..(^F9)(^f6)(VOFF){esc}{esc}{esc}{von}({}f10)c
.END
```

FILE NAME: C.SS (Version 1.1)

Graph Formating Option Menu	Help F1
^ Display the Graph Again	^
^ Format Options for Graph	^
^ Copy Graph to Word Processing	^
^ Leave the Menu to Doctor Data	^
^ Previous Menu	^

cMENU DIVISION VER=1.0

.W=(015,029,022,078) C=1

.O D (003,007,003,037) A1 (005) ME=E.SS

.HW (006,001,012,078) C=1 T=Display the graph again:

..
.. You will be given another menu from which to choose the format
.. for the graph. The graph will then be displayed. When done
.. viewing the graph, hit Ctrl/F6 which will take you back to the
.. spreadsheet and this menu.

.O F (004,007,004,037) C7 (005) V=1

.CO=(^f10)f

.HW (005,001,012,078) C=1 T=Format options for graph:

.. This option brings up another menu which will allow you to change the
.. width and height of the graph image for all types of graphs. You can
.. also change the color of the text for all graphs. For bar and line
.. graphs, you can change the color of the grid (same as text) and the
.. color of the bars or lines. Finally, you can change the font style
.. of all text titles and labels in the graph.

.O C (005,007,005,037) C1 (005) ME=D.SS

.HW (006,001,012,078) C=1 T=Copy graph to word processing:

.. You will be given another menu from which to choose an existing
.. word processing file to which you want to copy the graph or choose
.. to enter a new file name to which the graph will be copied. With
.. either choice, the file will be displayed for you. Hit Ctrl/F6 to
.. for appropriate action after you are done with the file opened.

.O L (006,007,006,037) A4 (005) V=1

.CO=(^F9)(^F6)(^F10)c

.HW (006,001,012,078) C=1 T=Leave this menu temporarily:

.. Selecting this option removes the menu temporarily so that you
.. can alter spreadsheet data in preparation of performing an
.. operation listed on this menu. When you are ready, hit Ctrl/F6
.. to bring this menu back up.

.O P (007,007,007,037) A8 (005) V=3

.CO={voff}{voff}{&END}Y(&f3)~(von){^f10}g

.MS C=1 T=returning to Graphs Library display....

.END

^ Current ^ Help F1
^ 2-D Bar ^
^ 3-D Bar ^
^ Std Pie ^
^ eXpl Pie ^
^ Line ^
^ Prev. Menu ^

.MENU DIVISION VER=1.0

.W=(015,001,022,030) C=1

.O C (001,008,001,017) E9 (006) V=3

.CO=(F10)GS`D(Von){^F9){^F6}{3x}{Esc){^F10}c

.HW (006,001,012,078) C=1 T=Current:

..
.. This option displays the graph according to the type last chosen.
.. If you have changed any format options, its appearance will change
.. accordingly within the same general type. Hit Ctrl/F6 to return to
.. the menu when done viewing the graph.

.O 2 (002,008,002,017) O9 (006) V=3

.CO=(F10)GS`OGTV2{Up}{Up}{Von}D{^F9){^F6}{Esc}{Esc}{Esc}

..{^F10}c

.HW (006,001,012,078) C=1 T=2-dimensional Bar chart:

..
.. Values shown for the graph will be displayed again in the format
.. of a two dimensional bar chart. When done viewing the graph, hit
.. Ctrl/F6 which will return you to the spreadsheet and bring up a
.. menu for additional choices.

.O 3 (003,008,003,017) O10 (006) V=3

.CO=(F10)GS`OGTV3{Up}{Up}{Von}D{^F9){^F6}{Esc}{Esc}{Esc}

..{^F10}c

.HW (006,001,012,078) C=1 T=3-dimensional Bar chart:

..
.. Values shown for the graph will be displayed again in the format
.. of a three dimensional bar chart. When done viewing the graph, hit
.. Ctrl/F6 which will return you to the spreadsheet and bring up a
.. menu for additional choices.

.O S (004,008,004,017) O11 (006) V=3

.CO=(F10)GS`OGTPTSSE{4x}{Up}{Von}D{^F9){^F6}{Esc}{Esc}{Esc}

..{^F10}c

.HW (006,001,012,078) C=1 T=Standard Pie chart:

..
.. Values shown for the graph will be displayed again in the format
.. of a standard pie chart. When done viewing the graph, hit
.. Ctrl/F6 which will return you to the spreadsheet and bring up a
.. menu for additional choices.

.O X (005,008,005,017) O12 (006) v=3

.CO=(F10)GS`OGTPTSSE{4x}{Up}{Von}D{^F9){^F6}{Esc}{Esc}{Esc}

```

..(^F10)c
.HW (006,001,012,078) C-1 T-Exploded Pie chart:
..
.. Values shown for the graph will be displayed again in the format
.. of an exploded pie chart. When done viewing the graph, hit
.. Ctrl/F6 which will return you to the spreadsheet and bring up a
.. menu for additional choices.
.O L (006,008,006,017) O13 (006) V=3
.CO=(F10)GS^OGTL(Up)(Up){Von}D(^F9){^F6}{Esc}{Esc}{Esc}
..(^F10)c
.HW (006,001,012,078) C-1 T-Line chart:
..
.. Values shown for the graph will be displayed again in the format
.. of a line chart. When done viewing the graph, hit Ctrl/F6 which
.. will return you to the spreadsheet and bring up a menu for
.. additional choices.
.O P (007,007,007,018) A8 (005) V=1
.CO=(Von){^F10)c
.END

```

Optional Formats Help F1

^ Image & Text Sizes ^
^ Text & Grid Colors ^
^ Bars & Line Colors ^
^ Lettering Style ^
^ Preceding Menu ^

```
.MENU DIVISION VER=1.0
.W=(015,001,022,030) C=1
.O I (003,005,003,024) F5 (003) V=1
.CO=({^f10})s
.HW (006,001,012,078) C=1 T=1 Change size - image & text:
..
.. This option brings up another menu from which you can select the
.. relative height and width of the graph image. Based on the size
.. of the image, size of text labels will adjust in size. When first
.. displayed from the Graphs library, a graph conforms to option 4 on
.. the next menu resulting in a larger image and smaller size text.
.O T (004,005,004,024) F6 (003) V=1
.CO=({^f10})t
.HW (006,001,012,078) C=1 T=2 Change color - text & grid:
..
.. This option brings up another menu from which you can select the
.. color to be used for all text labels and grid. In the case of pie
.. charts, the grid is not applicable but the title color will change.
.. The default color when a graph is first displayed produced white
.. text and grid.
.O B (005,005,005,024) F7 (003) V=1
.CO=({^f10})b
.HW (006,001,012,078) C=1 T=3 Change color - bars & lines:
..
.. This option brings up another menu which allows you to change the
.. color of bars and lines which appear in bar and line graphs. This
.. option will not affect the appearance of pie charts. The default
.. color of bars and lines when a graph is first displayed is green.
.O L (006,005,006,024) F8 (003) V=1
.CO=({^f10})n
.HW (006,001,012,078) C=1 T=4 Change font style - all text:
..
.. This option brings up another menu from which you can choose from 9
.. font styles for text titles and labels on the graph. The font style
.. that is used when the graph is first displayed from the Graphs library
.. is the default font. You will return to this menu.
.O P (007,005,007,024) A8 (003) V=1
.CO=({^f10})c
.END
```

FILE NAME: D.SS (Version 1.1)

Copy Graph to Word Processing File F1 = help

New File --> ^ ^
Old File --> ^ Select Existing File ^
^ Preceding Menu ^

```
.MENU DIVISION VER=1.0
.W=(015,007,022,078) C=1
.O ^D (003,019,003,040) D2 (017) V=3 DA=(000,022,004,000)
.CO=(voff)(F10)GS^odsh{up}{up}{von}d{f10}O(voff)(voff)UWC[&D2]^(5X){DOWN}
..(15x){&f3}{f10)c^c^o3{&F5}{up}{up}{up}{&f3}{^end}{up}
..(f10)e5^ Alt/F2 to print, Alt/f10 to save, Ctrl/F6 to
..continue...(2x){up}^(^home){von}{^f9}{^f6}{voff}{f10}qy(esc){esc}{es c}{von}-
(^f10)c
.IW (017,050,020,076) C=1 T=<--Enter a new unique file
.. name here to which the
.. last graph displayed
.. will be copied.
.HW (004,001,010,078) C=1 T=Input file name option:
..
.. Entering a file name will cause the graph last displayed to be copied
.. to a file by that name. The file will then be displayed for you.
.. Hit Alt/F2 to print it. When done, hit Ctrl/F6 to return to the
.. spread sheet and this menu.
.MS C=1 T=opening new file...
.O S (005,019,005,040) D1 (017) V=3
.CO=(f9)wouwr?{von}^(^f9){^f6}
..(^f10)h
.HW (004,001,010,078) C=1 T=Select file:
..
.. You will be taken to the directory of existing files where you can
.. cursor to the name of the file to which you want to copy the graph
.. last displayed. Hit Ctrl/F6 to select the file. You will be given
.. another menu to assist you in repositioning the graph within the
.. file.
.MB C=1 T=Displaying all word processing files ...
.O P (007,019,007,040) PRE (017) V=1
.CO=(^f10)c
.END
```

Image and Text Sizes	Help F1
^ 1 Less height & width	^
^ 2 More height to image	^
^ 3 More width to image	^
^ 4 More height & width	^
^ Leave Menu To Select	^
^ Preceding Menu	^

```
.MENU DIVISION VER=1.0
.W=(015,030,022,078) C=1
.O 1 (003,014,003,038) S5 (012) V=1
.CO={f10}gs~ogl1{4x}{up}{^f10}f
.HW (008,001,012,078) C=1 T=1 Less height & width:
..
.. This option optimizes the size of text and reduces the graph image
.. area to the smallest height and width.
.O 2 (004,014,004,038) S6 (012) V=1
.CO={f10}gs~ogl2{4x}{up}{^f10}f
.HW (008,001,012,078) C=1 T=2 More height to image:
..
.. This option increases the height of the graph image, reducing the
.. height of horizontal (X-Axis) text.
.O 3 (005,014,005,038) S7 (012) V=1
.CO={f10}gs~ogl3{4x}{up}{^f10}f
.HW (008,001,012,078) C=1 T=3 More width to image:
..
.. This option increases the width of the graph image, reducing the
.. size of vertical (Y-Axis) text. This is the size used by the
.. Graphs library feature when first constructing the graph.
.O 4 (006,014,006,038) S8 (012) V=1
.CO={f10}gs~ogl4{4x}{up}{^f10}f
.HW (008,001,012,078) C=1 T=4 More height & width:
..
.. This option maximizes the area of the graph image, reducing the size
.. of both horizontal and vertical text.
.O L (007,014,007,038) A4 (012) V=1
.CO={^F9}{^F6}{^F10}s
.HW (006,001,012,078) C=1 T=Leave this menu temporarily:
..
.. Selecting this option removes the menu temporarily so that you
.. can alter spreadsheet data in preparation of performing an
.. operation listed on this menu. When you are ready, hit Ctrl/F6
```

```
.. to bring this menu back up.  
.O P (008,014,008,038) A8 (012) V-1  
.CO-(^f10)f  
.END
```

FILE NAME: T.SS (Version 1.1)

Modify Text Color		Help F1
^ Amber ^	^ Salmon ^	^ Blue ^
^ Green ^	^ Violet ^	^ Cyan ^
^ White ^	^ Yellow ^	^ Red ^
^ Leave Menu to Select ^		
^ Previous Menu		

```
.MENU DIVISION VER=1.0
.W=(015,030,022,078) C=1
.O A (003,011,003,017) T1 (009) V=1
.CO=(f10)gs_ogc2(4x){up}{^f10}f(down)
.O S (003,023,003,030) T4 (021) V=1
.CO=(f10)gs_ogco(4x){up}{^f10}f(down)
.O B (003,036,003,041) T7 (034) V=1
.CO=(f10)gs_ogc1(4x){up}{^f10}f(down)
.O G (004,011,004,017) T2 (009) V=1
.CO=(f10)gs_ogcg(4x){up}{^f10}f(down)
.O V (004,023,004,030) T5 (021) V=1
.CO=(f10)gs_ogcv(4x){up}{^f10}f(down)
.O C (004,036,004,041) T8 (034) V=1
.CO=(f10)gs_ogct(4x){up}{^f10}f(down)
.O W (005,011,005,017) T3 (009) V=1
.CO=(f10)gs_ogcb(4x){up}{^f10}f(down)
.O Y (005,023,005,030) T6 (021) V=1
.CO=(f10)gs_ogc3(4x){up}{^f10}f(down)
.O R (005,036,005,041) T9 (034) V=1
.CO=(f10)gs_ogcr(4x){up}{^f10}f(down)
.O L (007,014,007,035) A4 (012) V=1
.CO=(^F9)(^F6)(^F10)t(down)
.HW (006,001,012,078) C=1 T=Leave this menu temporarily:
..
.. Selecting this option removes the menu temporarily so that you
.. can alter spreadsheet data in preparation of performing an
.. operation listed on this menu. When you are ready, hit Ctrl/F6
.. to bring this menu back up.
.O P (008,014,008,035) A8 (012) V=1
.CO=(^f10)f(down)
.END
```

FILE NAME: B.SS (Version 1.1)

Modify Bar and Line Color Help F1

^ Amber ^ ^ Salmon ^ ^ Blue ^
^ Green ^ ^ Violet ^ ^ Cyan ^
^ White ^ ^ Yellow ^ ^ Red ^

^ Leave Menu to Select ^
^ Preceding Menu ^

```
.MENU DIVISION VER=1.0
.W=(015,030,022,078) C=1
.O A (003,011,003,017) T1 (009) V=1
.CO=(f10)gs_olc2(4x){up}{^f10}f(down)
.O S (003,023,003,030) T4 (021) V=1
.CO=(f10)gs_olco(4x){up}{^f10}f(down)
.O B (003,036,003,041) T7 (034) V=1
.CO=(f10)gs_olcl(4x){up}{^f10}f(down)
.O G (004,011,004,017) T2 (009) V=1
.CO=(f10)gs_olcg(4x){up}{^f10}f(down)
.O V (004,023,004,030) T5 (021) V=1
.CO=(f10)gs_olcv(4x){up}{^f10}f(down)
.O C (004,036,004,041) T8 (034) V=1
.CO=(f10)gs_olct(4x){up}{^f10}f(down)
.O W (005,011,005,017) T3 (009) V=1
.CO=(f10)gs_olcb(4x){up}{^f10}f(down)
.O Y (005,023,005,030) T6 (021) V=1
.CO=(f10)gs_olc3(4x){up}{^f10}f(down)
.O R (005,036,005,041) T9 (034) V=1
.CO=(f10)gs_olcr(4x){up}{^f10}f(down)
.O L (007,016,007,037) A4 (014) V=1
.CO=(^F9)(^F6)(^F10)b(down)
.HW (006,001,012,078) C=1 T=Leave this menu temporarily:
..
.. Selecting this option removes the menu temporarily so that you
.. can alter spreadsheet data in preparation of performing an
.. operation listed on this menu. When you are ready, hit Ctrl/F6
.. to bring this menu back up.
.O P (008,016,008,037) A8 (014) V=1
.CO=(^f10)f(down)
.END
```

Modify Lettering Style	Help F1	
^Block 1^	^Roman 1 ^	^romaN 2 ^
^block 2^	^Italic 1^	^italiC 2^
^Default^	^Script 1^	^scripT 2^

^ Leave Menu to Select ^
^ Preceding Menu ^

```
.MENU DIVISION VER=1.0
.W=(015,030,022,078) C=1
.O B (003,009,003,015) T1 (007) V=1
.CO=(f10)gs~ogfmbxbsblb(5x){up}{^f10}f(down)
.O R (003,021,003,028) T4 (019) V=1
.CO=(f10)gs~ogfmrxrslr(5x){up}{^f10}f(down)
.O N (003,034,003,041) T7 (032) V=1
.CO=(f10)gs~ogfm2x2s2l2(5x){up}{^f10}f(down)
.O K (004,009,004,015) T2 (007) V=1
.CO=(f10)gs~ogfm3x3s3l3(5x){up}{^f10}f(down)
.O I (004,021,004,028) T5 (019) V=1
.CO=(f10)gs~ogfmixisili(5x){up}{^f10}f(down)
.O C (004,034,004,041) T8 (032) V=1
.CO=(f10)gs~ogfmlxslsl(5x){up}{^f10}f(down)
.O D (005,009,005,015) T3 (007) V=1
.CO=(f10)gs~ogfmdxdsdld(5x){up}{^f10}f(down)
.O S (005,021,005,028) T6 (019) V=1
.CO=(f10)gs~ogfmsxsssls(5x){up}{^f10}f(down)
.O T (005,034,005,041) T9 (032) V=1
.CO=(f10)gs~ogfm4x4s4l4(5x){up}{^f10}f(down)
.O L (007,015,007,036) A4 (013) V=1
.CO=(^F9){^F6}{^F10}n(down)
.HW (006,001,012,078) C=1 T=Leave this menu temporarily:
..
.. Selecting this option removes the menu temporarily so that you
.. can alter spreadsheet data in preparation of performing an
.. operation listed on this menu. When you are ready, hit Ctrl/F6
.. to bring this menu back up.
.O P (008,015,008,036) A8 (013) V=1
.CO=(^f10)f(down)
.END
```

Glossary of Computer Terms

ASCII. American Standard Code for Information Interchange, pronounced "as-key". It is an agreed upon code for representing each letter and number in binary code and is one of two generally accepted methods for translating into binary. The other method is called EBCDIC, Extended Binary Coded Decimal Interchange Code, and is used mostly on IBM equipment.

BACKUP. A disk copy of files originally kept on the hard disk or on another diskette. Each file should be stored on at least one diskette (the backup) other than the original. These diskettes should be kept in a cool, dry place. Keeping an updated backup of all files will save undue misery should the original disk's memory become scrambled, the files accidentally deleted, or the disk lost or destroyed.

BINARY. All computers use only two numbers, 1 and 0, and by combining them into groups of eight, any number, letter, or arithmetic function can be expressed. Computers use binary code because their memories are all based on nothing more than many tiny switches, each having only two positions, either on or off. Within a group of eight switches, there are 256 possible combinations. One switch is called a bit and a set of eight is usually called a byte.

BIT. Binary digit. It is the smallest unit of information stored within computers as a 1 or 0, instructing a switch to be on or off. Each switch represents a command, and when "on," conducts current that tells the computer to execute that command.

BOOT. To load a simple program that, in turn, executes some complex steps to prepare the computer for use. A hard boot requires placing the DOS diskette into the computer and turning the computer on. A soft boot can be executed on IBM and compatible machines by pressing "ctrl" + "alt" + "del". This performs the same operations as a hard boot, but creates less wear on the computer's on/off switch.

BULLETIN BOARD. An electronic version of the familiar community bulletin board where people leave messages for each other, advertise for a sale, offer rewards, etc. There are hundreds of computer bulletin boards used to exchange all kinds of information, programs, technical assistance, etc. They consist of a computer; a modem capable of answering the telephone; a telephone line; and software to log in the callers, report on the contents of the board, and record their new inputs.

BYTE. A set of (usually) eight bits. Since each of the eight bits within a byte can be either on or off, there are 256 possible bit meanings for each byte. A manuscript of 10,000 characters will need 10,000 bytes of memory to hold it. Some larger computers use groups of 16 or 32 bits as their basic units of information, but these larger groups of bits are usually called "words."

CAD/CAM. Computer-Aided Design/Computer-Aided Manufacture. CAD refers to using the computer to aid in drawing, especially as related to architectural or engineering applications. CAM refers to programs that tell machines what to do in the manufacturing process.

CATALOG. List of contents, particularly of a disk or some other storage medium. To catalog a disk is to instruct the computer to print a list of all files on the disk.

CENTRAL PROCESSING UNIT. A microprocessor chip that forms the heart of a micro-computer. The CPU determines the speed at which the machine operates, the amount of information it can process, and the type of operating system which it runs.

CHIP. A tiny sliver of pure silicon used to hold the many circuits and transistors that comprise a microprocessor or memory device. The tiny components are etched on the silicon using photographic processes, resulting in an integrated circuit.

CPS. Characters per second, usually refers to printing speed. Dot matrix printers usually run at 80 to 160 cps, whereas daisy wheel printers operate between 14 and 30 cps (see Section 3.1--Printers).

CURSOR. The flashing mark on the screen that shows where to begin inputting data or responding to program prompts.

DATA. Specific information that must be provided to a program in order to process that information for useful output.

DATABASE. Any collection of data that falls under common categories. This collection can be arranged, stored, and recalled according to specified categories.

DBMS. Database Management System; the class of programs used to manage large collections of information. An airline reservation system is an example of a large DBMS.

DEFAULT. The answer a computer assumes in case the user does not answer a posed question (see also Parameter).

DIP SWITCH. Dual In-Line Package Switch; a special kind of chip with a row of small switches on its surface. The switches are used to configure a piece of hardware--a printer, modem, or the computer itself--to behave in a certain way every time it is used. DIP Switches are used instead of software control to set defaults in situations where the conditions of use are not likely to change often. For example, some kinds of printers are capable of printing Japanese characters, but preparing the printer for this requires setting a DIP Switch.

DIRECTORY. There are two types of directories: root directories and subdirectories. A root directory is created on a disk at the time the disk is formatted. It is denoted by a backslash (\). A root directory on a single-sided disk can hold 64 files. On a double-sided disk, a root directory can hold 112 files; and on a high-capacity disk, it can hold 224 files (see Section 3.1--Disk Storage). The maximum number of files in a hard disk root directory depends on the size of the DOS partition on the disk. In addition to containing the names of files, a root directory can contain the names of other directories, called subdirectories. Unlike the root directory, subdirectories are not limited in size. They can

contain any number of files and subdirectories, restricted only by the amount of space available on the disk.

DISK. There are two types of disks: the hard/fixed disk and the floppy disk (often referred to as a diskette). The hard disk usually comes built into the computer or can be added with an extra computer card. A floppy disk is a flexible ("floppy"), thin square with an inner magnetized plastic piece that is inserted into the computer drive slots. The actual square exterior is just a jacket for the inner, round magnetized piece where information is actually stored. You should take care never to touch the inner piece to reduce the risk of damaging the stored data.

DISK DRIVE. A device that accepts floppy disks and reads and writes information to the internal hard disk or the inserted floppy. Conventionally, the hard disk drive is referred to as drive "C", whereas drives "A" and "B" refer to floppy disk drives. You can determine with which drive the computer is communicating by the prompts that appear ("A:>", "B:>", or "C:>") while working in DOS.

DISKETTE. See Disk.

DOS. Disk Operating System. An operating system is a set of computer programs that helps the user manage his/her microcomputer. All modern computing systems have some sort of operating system. The operating system is a set of software that helps the user to work with the computer and gives the computer its personality--the characteristics that classify the computer as being "user-friendly" or "unfriendly." DOS allows the user to communicate with the computer at a level easier for humans to understand. It is the mediator between the user's language and the machine's language (see Binary). For example, the appropriate operating system program can accept the word "catalog" or the word "directory" and associate it with the necessary machine instructions that will list on the computer's screen all the programs and/or files stored on a disk. In most instances, operating systems, or selected parts of them, are included with application programs to help them perform certain functions common to all applications. In many cases, the application program directs the computer to perform activities specific to the application and then turns to DOS for common activities such as transferring files or performing input and output operations.

DOUBLE-DENSITY. Technique for storing data on disks at twice the normal density (see Single-Density). Special disks are manufactured for double-density use, but they will also work in single-density applications.

DOUBLE-SIDED. Refers to a disk intended to be used on both sides. Double-sided disks are manufactured to be used on both sides simultaneously, since some disk drives have read/write heads positioned to use both sides (see Single-Sided).

DOWNLOAD. To accept data from a large computer system onto a smaller one. In this way, a microcomputer can be made to behave like an extension of a large, mainframe computer located remotely. When the microcomputer is operating under such terminal software, it normally is using programs and memory space that belong to the remote computer, and most of its own capabilities are suspended. The purpose of downloading data is usually to manipulate or analyze it in some

way. Stock market information is often downloaded to microcomputers for later analysis. Downloading can also be used to copy sections of, or even entire, databases.

DOWNTIME. Period that a computer is not functional due to a breakdown in hardware or normal maintenance procedures.

EBCDIC. Extended Binary Coded Decimal Interchange Code. One of two major codes for representing data in binary form. The other is known as ASCII. Since a computer's language communicates only in numbers, letters must be coded into numbers, and there has to be some agreement on which numbers go with which letters. EBCDIC and ASCII are the two standard coding systems. EBCDIC is most common on large computers, especially IBMs, whereas ASCII is found on most of the smaller and personal computers.

ELECTRONIC MAIL. Term that covers all of the various ways you can send messages using computers. The most common form is for the message sender to write it into a central computer that the intended receiver also can access. The receiver can then read the message and respond in the same way. Each is connected to the central computer via telephone lines. Because transmission speeds are very fast, messages can be sent across the country in seconds. There are many networks available for electronic mail.

FIELD. Within a database file, information is usually arranged so that everything about a certain subject or person in the database is organized as a single record. Within the record, the different kinds of information are divided into fields--a separate field for each name, street address, city, state, and zip code, and any other information one might have. It is easy to sort the records by any field--to make a list of everyone in the file who lives in Chicago, for example, and who is also an architect; or to locate articles about Chicago architects published during 1980.

FILE. A collection of related data or programs that is treated as a unit by the computer.

FORMAT. To prepare a floppy or hard disk for reading and writing. This must always be done to new disks in order for them to be functional. Warning for novice users: do not format a disk that was previously formatted if it is desired to save the information stored on that particular disk. Reformatting will destroy all the information stored on a disk (see Section 3.3).

FORM FEED. Refers to advancing the print paper one sheet at a time from the printer (note button located on printer).

FUNCTION KEYS. Identified by "F" followed by a number (1 through 10). These keys have different meanings according to which software package is being used. In general, a function key performs a series of keystrokes as if the user had entered each one, or it performs some preprogrammed function set by the particular software package. The function keys can also be programmed to work a series of DOS commands.

HARD DISK. Works in much the same way as a floppy disk, except that it is made of thin metal. Most hard disks associated with microcomputer systems are permanently encased in their associated disk drives and cannot be removed; they are known as Winchester disks. A hard disk can hold from 10 to 100 times more data than a floppy disk of the same size. With most computers, you can address, or move to, the hard drive by entering "CD \".

HARDWARE. Physical pieces of equipment that comprise the computer and support its functions.

I/O. Input/output; generally refers to entering data and programs into the computer and producing results out of it.

LINE FEED. Refers to advancing the print paper one line at a time (note button located on printer).

MACRO. A single instruction that can stand for a whole group of prespecified commands. In word processing, a macro is usually a single word or letter code that stands for several.

MAINFRAME. General term for any large computer--not a micro or mini. The term probably comes from the practice of building computers on a series of circuit boards kept in place by a metal frame that holds them by their edges and provides a rigid support.

MENU. Display of options presented by a program on the computer screen from which the user makes a selection. Such a program is said to be menu-driven.

MICROCOMPUTER. Automated system consisting of a microprocessor chip and the related integrated circuits needed to control memory and input/output.

MODEM. Device that converts information from a computer into audible sounds for transmission via telephone lines to another computer also capable of receiving information in such a way (see Section 3.1).

MONITOR. A video screen--often referred to as CRT (cathode ray tube) or VDT (video display terminal)--designed for use with a computer. This screen displays text and/or graphics (if a graphics card is installed in the computer).

NETWORK. The communications links between: a number of computers, a central computer and many users, or any group of computers wishing to share files and send messages to each other. There are several large, commercial services that offer networking facilities via telephone lines. Many large companies have their own private networks, but it is also possible to set up a network among microcomputers in a small business or a school.

OVERWRITE. To replace data, usually in the sense of writing new information over existing data in memory, thus erasing the older data in the process.

PIXEL. If the monitor is envisioned as a grid with many horizontal and vertical lines, then each box formed by that grid is one pixel. The more pixels, the

sharper the image. The IBM PC has optional graphics monitors with 200 by 320, or 64,000 pixels, and a high-resolution mode with 200 by 640 (128,000 pixels).

RAM. Random access memory, which is a short-term memory that can be erased when the computer is turned off and can be changed under program (see section 3.1).

READ. To retrieve data or a program from storage and put it into the computer's internal memory for use or further processing. You "read" a file or a disk. It is the opposite of "write to."

RECORD. In a database, a collection of information about a single subject. Databases are usually designed so that each record is the same size, with the information on each subject organized into separate fields, each field containing only one kind of information. For example, in a baseball card database, the information on each player would make a separate record. Each record would have separate fields for name, team, position, RBI, home runs, etc. Given this structure, the program can sort the records by any field or combinations of fields. For example, you could find all players whose lifetime batting average was greater than 0.325.

ROM. Read-Only Memory, which is a long-term memory that cannot be erased when the computer is turned off and cannot be changed under program control. The ROM chips are installed in the computer with pre-encoded instructions (see Section 3.1).

SINGLE-DENSITY. "Normal" density (see Double-Density).

SINGLE-SIDED. Describes a disk intended to be used on one side only (see Double-Sided).

SOFTWARE. A program or set of instructions that tells the computer what to do. A software package is a commercially prepared program or set of programs, usually recorded on diskettes. Programs imbedded in memory chips are called firmware, and all of the tangible equipment is called hardware.

SORT. To automatically arrange or rearrange items in a list, alphabetically, numerically, or by some other criterion. It also means to arrange records in a database according to the contents of a particular field. One sort might be by date, another by size, or another by zip code.

TELECOMMUNICATION. Communication between computers via telephone lines.

TOGGLE. Refers either to a familiar type of hardware switch or to a software switch such as upper and lower case in a word processor. To toggle is to alternately turn something on and off by striking the same key.

USER-FRIENDLY. Describes programs that have been designed for easy understanding by those with little computer experience.

UTILITY. A program or group of programs that perform common operations such as deleting, renaming, or copying files or disks, or recovering damaged or mistakenly deleted files. Utilities are often part of the operating system (see DOS),

but there are many additional utility programs available for almost every kind of computer.

WORD PROCESSING. A software program that allows you to type at a keyboard, just as on a typewriter, causing the text to appear on the computer monitor's screen where one is free to review and edit it. You can easily insert new words, sentences, or paragraphs into what has already been typed; delete portions of text; move portions of text within the document; etc.

WRITE TO. To send data from the computer to some form of storage--usually a disk--or to copy data from one storage device to another. This operation is the opposite of read.

WRITE-PROTECT. To prevent the alteration of a computer file or program in storage. Diskettes in the 5-1/4 inch size have a small notch in their sides. Covering this with a tab will prevent anything from being written to the diskette, while still permitting what is stored on the diskette to be read. The 8-inch floppies work in an opposite manner--covering the notch permits writing. It is also possible to protect the contents of individual files on a disk with a command to the operating system (see DOS) to lock a filename.

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