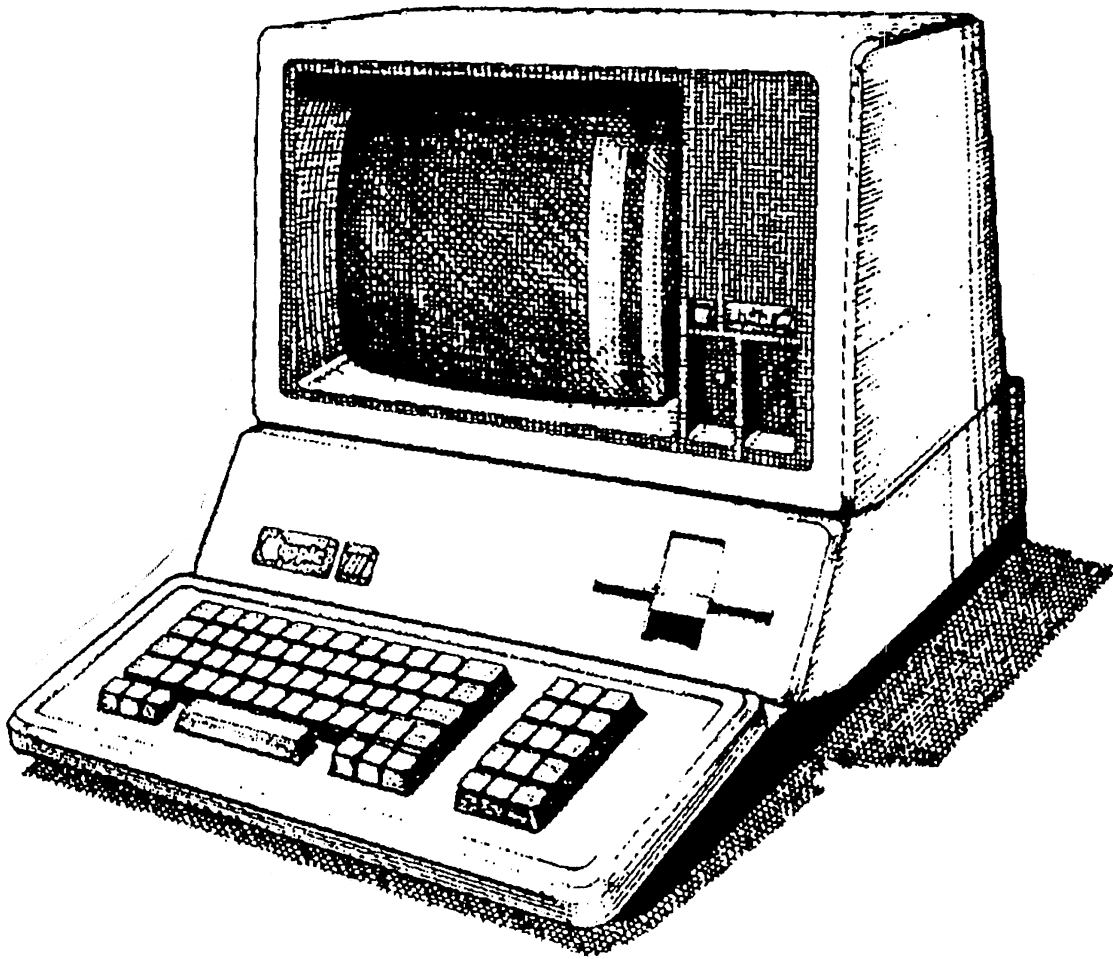




# Apple /// Computer Information



DOCUMENT NAME	#
<i>SPECIFICATION: APPLE /// PASCAL</i>	<i>7</i>

**Ex Libris David T. Craig**

<b>Apple III Pascal</b>										<b>Languages and Utilities</b>			
A Powerful Language and Development Environment													

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*Apple III Pascal is a fully integrated software development environment. It incorporates an Apple III adaptation of the UCSD Pascal™ Operating System with the Apple III's Sophisticated Operating System (SOS). Because it offers a compiled language, the Apple III Pascal system enables programs to execute quickly in minimal space.*

*The discipline imposed by structured programming facilities and extensive data structures helps programmers work more efficiently, thus making Apple III Pascal the language of choice for large business, scientific, and educational programs.*

**Benefits**

**Apple III Pascal...**

- *increases programmer productivity because it provides a total software development facility...*
- *simplifies program design through Pascal's structured programming environment and rich variety of data types...*
- *lowers software development costs because it is a powerful, high-level language...*
- *is source-program compatible with routines written in Apple II Pascal, so programs can be easily transported without being redeveloped...*
- *cuts maintenance costs because Pascal's modular design helps the programmer write well-structured, easy-to-understand programs...*
- *expands your programming workspace, because it enables adaptation to available memory...*
- *optimizes your use of available memory, because its command processor allows each application to use only as much graphics space as needed...*
- *includes a powerful, easy-to-use text editor that affords documentation and source code maintenance...*
- *provides flexible input/output through its user-transparent access to Apple III's SOS.*

**Apple III Pascal—  
A Closer Look**

Apple III Pascal meets the programming requirements of a wide range of users. Its variety of data types, control functions, and powerful utility routines can dramatically improve a programmer's productivity on large projects. This is one reason why Apple Computer has selected Pascal as a standard vehicle for most system and applications development.

**Why UCSD Pascal?**

Apple III Pascal provides the programmer with a high level of portability because it's based on UCSD Pascal, the microcomputer industry standard. Users can access large existing libraries of Pascal programs, and can run Apple III Pascal programs with minimum conversion on most computer systems offering Pascal.

UCSD Pascal is more than a language. Compiler, Assembler, Editor, Linker, and Filer are all integrated within a single, powerful system. Built-in procedures and functions enhance the string, byte, and I/O capabilities. This total package provides the user with a comprehensive set of software tools for program development, and the ability to create and maintain program libraries.

**Why Pascal For Apple III?**

Apple has taken advantage of all of UCSD Pascal's features while offering additional capabilities. They include:

- up to 64K bytes of memory for data;
- code space limited only by total memory size of the machine;
- conformance to the IEEE Proposed Standard for 32-bit Binary

**Apple III Pascal**

Floating-Point Arithmetic (this standard specifies special optional treatment of exceptions like overflow, configurable arithmetic under program control, and accuracy of arithmetic, I/O conversions, remainder, and square root);

- easy access to Apple III's human interface features—color graphics, speaker, joysticks, and keyboard;
- transcendental functions;
- extensive documentation.

**System Configuration**

To use Apple III Pascal, you will need the following system:

- an Apple III system with 128K bytes RAM;
- a suitable high-resolution video display device (Monitor III recommended);
- one Disk III expansion drive.

**Technical Specifications**

**Format:**

16-sector diskettes, 140K (143,360) bytes per diskette.

**Editor:**

Editing functions include cursor control, text modification, formatting, searching and marking capabilities. The Editor offers:

- fast, screen-oriented editing for program development and text editing;
- 80-character lines;
- upper and lower case;
- editing capabilities for Apple Business BASIC ASCII data files.

**Compiler:**

- Translates Pascal source text into P-code.
- Source language procedures or functions can be compiled separately as UNITS, allowing a large program to be subdivided into smaller, more manageable parts. Commonly used procedures and functions can be compiled once, stored in a library file, and accessed by other programs through the Linker.
- EXTERNAL routines can be declared and later linked into the host program by the Linker.
- Compiler option specifications can be embedded in the source text in order to control listings, suppress screen messages, generate range-checking code, allow GOTO statements, or include separate source files.

**Assembler:**

The Apple III Pascal Assembler converts assembly language routines into code files that can be linked with a Pascal host program. The Apple III Pascal Assembler is a version of the UCSD Adaptable Assembler, implemented specifically for the 6502 microprocessor used in the Apple III computer.

**Linker:**

The Apple III Pascal Linker lets you combine code files (which may be compiled P-code or assembled machine code) into a specified code file. This lets you incorporate useful routines into programs without having to rewrite, recompile, or reassemble these routines.

**Filer:**

The Filer handles chores, such as storing and retrieving data on disk, moving and deleting disk files, and creating or modifying diskette directories. It also:

- provides complete control over all SOS file facilities, including directories, sub-directories, and data transfer;
- sets or changes prefix so that long filenames can be entered easily;
- manages the assignment of system workfiles.

**System Library:**

The Apple III Pascal system includes a utility program that will collect separately compiled or assembled routines into a library file. The System Library contains:

- The PGRAF intrinsic unit, which provides easy access to Apple III's high-resolution color capability. PGRAF provides a set of procedures for plotting dots and lines, setting colors, and defining the viewport. A

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feature of the display is an invisible cursor which is used as a position reference in certain operations. Procedures exist for moving the cursor without affecting the display.

- The APPLESTUFF intrinsic unit, which contains routines to generate random numbers, interface with joysticks, and generate sound on the Apple ///'s speaker.
- The TRANSCEND intrinsic unit, which contains transcendental functions useful for mathematical calculations.
- The CHAINSTUFF intrinsic unit, which allows one program to "chain to" another program.

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**The Apple ///  
Pascal Package  
Order No.  
A3D0005**

With your Apple /// Pascal order, you will receive:

- three Apple /// Pascal System diskettes;
- one blank diskette;
- Apple /// Pascal Introduction, Filer, and Editor manual;
- Apple /// Pascal Program Preparation Tools manual;
- Apple /// Pascal Programmer's Manual (Volumes I and II).