

# ACT Apricot

*A Good Look At The Future*



## John J. Anderson

The British are most definitely coming. Over the course of the past three years, we have reported as much. Machines such as the BBC educational micro are destined to have an impact not only in the United Kingdom, but worldwide.

This very much includes the "States," as the Brits call us. While we have managed to maintain a technological lead, the British have had something of an edge on the U.S., at the least in their acceptance and interest in microcomputing for the last couple of years. That has lately translated into a design edge and has now begun to show in a new generation of innovative entries that compete quite well with American machines. And nowhere is that edge more evident than in the Apricot from ACT.

Before we get into trouble with some of our friends across the sea, let us clarify: ACT (for Applied Computer Techniques) is headquartered in Birmingham, England, does its research and development at Dudley in the Midlands, but manufactures computers in Scotland. So perhaps English would be a better term than British to use in describing ACT.

ACT is the distributor of the Victor 9000, a machine that has had a limited impact on our shores, but has become quite popular in the U.K. and on the Continent as the Sirius 1.

The Apricot is not just another fruit. Its mass of features makes it a sure thing

***The Apricot is not just another fruit.***

### **HARDWARE PROFILE**

**Name:** ACT Apricot  
**Type:** Transportable business system  
**CPU:** 16-bit 8086 5MHz  
**RAM:** 256K, expandable to 768K.  
**Keyboard:** 96 keys, full-stroke, fully programmable  
**Text Resolution:** 80 x 24  
**Graphics Resolution:** 800 x 400 pixels.  
**Color/sound:** Monochrome/TI 76489 sound chip, large built-in speaker.  
**Ports:** RS-232 serial, Centronics parallel.

to put a dent in the jaded U.S. market. At \$2895, it sports a true 16-bit 8086 processor, clocked at 5MHz, and 256K standard RAM, expandable to a whopping 768K. It makes use of dual state-of-the-art Sony 3 $\frac{1}{2}$ " microfloppy drives. It runs MS-DOS 2.0, CP/M-86, and

**Dimensions:** CPU 17" x 12" x 5";  
CRT 11" x 10" x 9";

**Keyboard:** 16" x 7" x 2"

**Documentation:** Excellent. Five manuals.

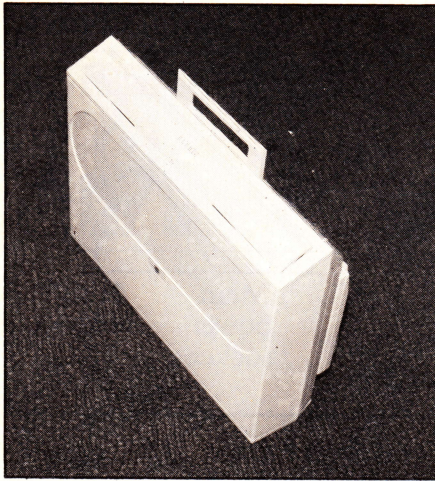
**Price:** \$2895 with dual, single-density drives.

**Summary:** An innovative, high quality machine, setting a new standard in the "transportable" category. LCD microscreen capability is novel and useful.

#### **Manufacturer:**

ACT (North America) Inc.  
3375 Scott Blvd., Suite 342  
Santa Clara, CA 95051  
(408) 727-8090





*The Apricot in attaché mode.*

Concurrent CP/M-86.

Its keyboard is unmatched by any machine on the market today. It includes a ground-breaking 40-character two-line LCD display, which can define a row of special function keys below it, or be used independently. The keyboard also features a battery-powered internal clock/calendar, the contents of which read out on the LCD but can also be piped to the CPU under MS-DOS. On deck for the unit is an add-on internal autodial modem, and co-processor capability.

Now picture this: all of these features are packed into a case no bigger than an attaché. Unpacked, the unit CPU case measures 17" x 12" x 5". Its CRT, with pedestal, measures in at 11" x 10" x 9", and when seated in place above the main box, brings the total height to only 15". The tapered, detachable keyboard, which clicks solidly into the bottom of the main case for transport, measures 16" x 7" x 2" at its widest points. Pull out the hidden handle, push down the handsome shutter that protects the microdrives, and you're ready to shove off. The packed system weighs 17½ lbs. in one hand, with the CRT 9 lbs. in the other.

The Apricot is not labeled a portable but rather a "transportable," as the CRT for the unit is external, and you must be near a power socket (mains, as the British say) to use the computer. Still, you are getting a full-size display in the trade-off, and for our money it is much easier to carry a packed-up Apricot with CRT than to lug around a Kaypro or Compaq—and certainly more desirable.

Cosmetically, the Apricot is just about the best looking micro you are apt to see. At least two members of our art department stopped dead in their tracks when they saw the thing, and said "wow." The Apricot is a knockout. It looks exactly the way a next-generation microcomputer ought to look, and then some. Everything about it signals "quality."

1985 Creative Computing Buyer's Guide

And its beauty is far more than skin deep, as you shall see.

## **The Keyboard**

One look at the detached keyboard and you know you are on to something special. It has 96 fully programmable keys, and is laid out in the IBM-Selectric style. It includes dedicated HELP, UNDO, PRINT, MENU, and FINISH keys to make life easier although each and every key on the keyboard can be easily redefined. The CAPS LOCK and STOP keys are LED illuminated to indicate their activation. There is a full numeric keypad and nearly directional cursor movement keys (see photo). The angle of the keyboard is not adjustable, but seems to be set at a very acceptable rake.

The "feel" of the keyboard is excellent. It has a tight but full-travel action and no bounce whatsoever. At first we felt the keyboard was a bit spongy,

---

## **One look at the detached keyboard and you know you are on to something special.**

---

but we were pressing too hard. Upon letting up a bit, we realized the keyboard design accounts for all tastes. There is no feeling of having "hit bottom" during a keypress, so angry typists can vent their frustrations without spraining fingers. Hence the feeling of sponginess. At the same time, feather-touch typists will notice the keyboard response is fantastically swift. By the time the key has traveled a millimeter or so, the keypress has registered.

The autorepeat start time, repeat rate, and keyclick volume of the keyboard can be simply controlled through software. More about that up ahead.

Then there is the "microscreen." This is a two-line, 40-character LCD display on the upper righthand side of the keyboard. Upon power-up, it displays the date and time (see photo). It is also used to label six touch-sensitive function keys just below it. Each function key has its own LED, to indicate when it is activated. One very nice use of this feature is the ability to redefine these key labels throughout the levels of a program. The keys can change function without muss or fuss, and remain clearly labeled at all times. It takes more pressure to activate the touch-sensitive keys, but this is perhaps a desirable feature for the special function keys—they cannot be accidentally invoked.

Another feature of the microscreen is the calculator mode. Press the CALC key in the top row of permanently assigned function keys, and the LCD becomes a full-blown calculator with memory. You may perform all the operations you desire, then return to whatever spot you were in before you entered the calculator. You can even send the results to the current program. There is a percent key, too, which is very handy.

As on the TRS-80 Model 100, the angle of the LCD can be adjusted with a thumbwheel on the righthand side of the keyboard. This ensures that the display will be legible from any conceivable posture. Next to the thumbwheel is a recessed reset button. To prevent accidents, it must be held in the depressed position for one full second before the Apricot resets.

When the unit is on and the keyboard is plugged in, the LED dot on the "i" of the Apricot logo is illuminated—very stylish.

On the rear of the keyboard is a mysterious DB-9 jack, which will soon add mouse capability to the Apricot as well. With its LCD-defined function keys, the need for a mouse is questionable, but thoughtfully, ACT has put the capability there anyway.



*The best keyboard we've ever seen or touched.*



## The Disk Drives

When a company goes OEM for drives, it has to keep quality and availability in mind. To go OEM for a new technology, such as microdrives, the criteria become even more critical. For ACT, the decision was obvious: the Sony microdrive. Proven performance, proven reliability, and proven availability are hallmarks of the Sony name. The new Sony  $3\frac{1}{2}$ " drives are a look at the future of disk storage. The drives supplied with the unit we tested in the lab were single-sided, limiting storage to a mere 315K per drive. On deck for the Apricot, are new double-sided drives, which will more than double this capacity, bringing the total disk storage capacity to well over 1Mb.

The Sony drives are a joy. They are noiseless but for a click when activated and are very, very fast. We watched full-blown hi-res screens load from disk in

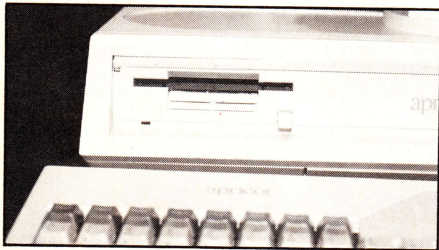
---

**The Sony drives are a joy. They are noiseless but for a click when activated and are very, very fast.**

---

under five seconds. Spring-loaded metal shutters in the disks protect head access holes from wandering thumbprints, and as a recent innovation, are automatically opened and reclosed within the drive. The user need never (and should never) see the magnetic medium itself. There is no need for doors on the drives, and the disks themselves can take a great deal of abuse.

Also in the on deck circle from ACT is a  $3\frac{1}{2}$ " hard disk option, which will fit in place of drive B. If the 10Mb offered



Doorless microdrive.

by this option is still not enough for you, you will have to look to external storage methods.

## The CPU and Environs

The computer inside the main case of Apricot is on a single board, maximizing reliability and ease of service when it is

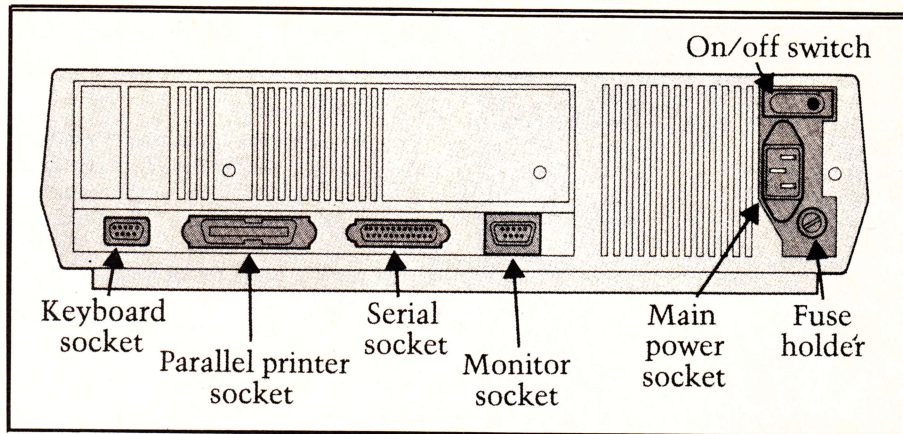


Figure 1. The rear end.

needed. Built around the 8086 CPU, a separate 8089 input/output processor handles I/O operations to and from the drives and the asynchronous link. Room for an optional 8087 mathematics processor is also available on the board, although use of this add-on chip will require software written specially for it.

The 8086 CPU is a twin to the 8088, but has a true 16-bit bus, as opposed to the 8-bit data bus of the 8088, as found in the IBM PC. This speeds its benchmark, as shown up ahead. The advantage of the 16-bit software approach has yet to surface, but we remain patient. If and when it does, the Apricot will exhibit it.

For the purpose of comparison, we ran the David H. Ahl Quickie Benchmark Test on the Apricot, as a measure of CPU speed and accuracy from Basic (for a full description of the test, see the November issue of *Creative Computing*). The Apricot scored in the top five machines tested as of this writing: the answer came back in 17.6 seconds, with an accuracy of 0.005859375, and a sum random of 7.18416. Like EPA mileage statistics, the benchmark should be taken with a grain of salt. Still, the Apricot outperformed many of its more-touted rivals. For example, the IBM PC took 24 seconds in the same test, returning an accuracy of only 0.01159668.

Also on the CPU board are two expansion slots. Whether these are going to be enough for the serious user remains to be seen. One will be taken in nearly all cases by the modem card. The other will in all probability have to lead to an external expansion box, if the user desires the full 768K RAM and co-processor or IEEE-488 capability. Third party hardware manufacturers take note: the expansion slots are fully documented and just waiting for Apricot-compatible goodies.

At the rear of the unit are sockets for the power cable, keyboard, and monitor (see Figure 1). In addition there are a Centronics parallel printer port and an

RS-232 serial port. The keyboard input uses a male DB-9 plug, while the monitor uses a female DB-9 socket, so there is no way to hook up incorrectly. The parallel port uses exactly the same jack

---

**The CRT for the Apricot is one of the sleekest we have ever seen.**

---

as those found on Centronics parallel printers themselves—this is quickly becoming the de facto standard configuration. The RS-232 plug is the standard DB-25 male. These configurations make hooking up the Apricot to external devices as straightforward as possible.

## The Display

The CRT for the Apricot is one of the sleekest we have ever seen. It tilts and swivels, and can be moved across the width of a shallow groove in the top of the main box. This allows the display to be positioned extremely flexibly.

Although the display is only 9" measured diagonally, it provides crisp, clear, easy-to-read characters and very serviceable hi-res capability. It has a non-reflective green-screen coating, and a resolution of up to 800 x 400 pixels. The only necessary external control is a brightness knob.

As far as we are concerned, the CRT arrangement of the Apricot is much preferable to an internal monitor of smaller size, such as is found on the Kaypro. An indented handle makes carrying the CRT as convenient as possible, though in most cases it would probably be boxed for transport. Another possibility would be to have a CRT at each location the Apricot is to be used, such as at work and at home. Then the Apricot, sans CRT, would

1985 Creative Computing Buyer's Guide



truly qualify as a portable.

The custom CRT plugs only into the Apricot, from which it receives not only a video signal but its power supply. This makes cabling a breeze, but pre-empts the possibility of hook-up to conventional, and less expensive, monitors. Extra Apricot CRTs cost about \$300 each.

## Modus Operandi

The decision to supply fully three operating systems with the Apricot is another good example of ACT's savvy in positioning its machine, and should not be overlooked when assessing the total cost of the system. The flexibility of the Apricot is unbeatable on this score: the user may choose CP/M-86, Concurrent CP/M-86, or MS-DOS 2.0 to operate the machine. Each system has its own advantages, and the ability to pick and choose between them allows the user to skirt the disadvantages of each.

Digital Research CP/M-86 is a fine operating system, proven over time and offering a vast array of software. Concurrent CP/M-86, also from Digital Research, enhances the versatility of plain old CP/M-86, and offers the capability of multi-tasking, wherein more than one program may be executed simultaneously.

Using Concurrent CP/M-86, you can create up to four "virtual consoles." These are channels that you can switch between, just like channels on a TV. You may perform word processing on channel 0, while running a spreadsheet on channel 1, a database on channel 2, and a telecommunications program on channel 3. Multi-tasking is necessarily memory intensive and, therefore, most powerful under the maximum RAM configuration.

In the buffered mode, characters generated within a running program are saved to a temporary disk file during switching between consoles. When you return to the original console, the saved file is re-established within it. In this manner you may let one program turn out pages of text while you work on another project, then return to see how the first program is doing whenever you like.

Concurrent CP/M-86 also supports passwords, user numbers, and file attributes, which are not supported by CP/M-86. Additionally, Apricot Concurrent supports date- and time-stamping of files from the internal clock/calendar, and several other commands which combine to make CP/M-86 more powerful and easier to use. There is even a windowing capability a la Lisa, but we must be careful about comparing Apples with Apricots.

Then there is MS-DOS 2.0, which offers some very provocative potentials.

First off, and very importantly, it is fully compatible with MS-DOS as it appears on the IBM-PC: using the serial port and telecommunications drivers on each end, programs can be downloaded directly from the PC. Then, using a supplied IBM emulator program, they can be run on the Apricot (let us pause to reflect that commission of such transmission might infringe on copyright laws). In the U.S. later this year we may see a 5 $\frac{1}{4}$ " outboard add-on disk drive that reads IBM disks. We have stressed to ACT the advisability of such a peripheral, at least on this side of the Atlantic.

## The Manager

But there is much more than IBM-compatibility to the advantage of Apricot MS-DOS as an operating system. Foremost of these is the Manager, a beautifully designed user interface program that makes working with the Apricot

---

### ***You may wish to bypass the Manager shell and interact directly with MS-DOS.***

---

easy for even the utter novice. If you so desire, you need never face MS-DOS to use it—just use the Manager to get where you are going.

Upon power-up, the Apricot runs a self-test, the microscreen reads out date and time, and the CRT indicates readiness for insertion of a disk. When you insert the system master, the Manager module autoruns. It provides a handsome and easy-to-use menu of the programs available. The microscreen function keys will be activated, making selection of the desired program as simple as a single, clearly labeled keystroke. Alternatively, you can use the cursor keys to move through the menu, then hit the RETURN key when your choice is highlighted. And if you had a mouse, you could use it to choose your selection.

As you move the cursor horizontally through the five possible "ladders" of the menu, that bank of choices automatically appears on the microscreen, and the function keys automatically toggle to reflect the new set of choices. At the same time, a brief help note describing the nature of each program appears at the bottom of the main display as its name is highlighted.

If more detailed helps are needed, they are available all along the way. Help can be chosen from the lefthand ladder at any menu point along a decision-tree, or the HELP key itself can be

pressed. In this way more information can be called up without (horrors!) reference to documentation.

Backing out of any selection along the trees and subtrees of the Manager returns you to the previous step. Although this can become tedious during complex operations, it ensures that you will never lose track of just where you are. The Manager has an index which can hold up to 29 programs plus the Tools program, which allows for easy execution of housekeeping chores.

The programs you wish to hold in an index must be assigned using one of the utilities of the toolkit, along with a single sentence help description you provide. Adding, deleting, or changing the index of the Manager, is extremely simple, using the OPTION utility.

If an attempt is made to execute a program that is in the index but not on the same disk as the Manager a prompt asks you to insert the correct disk. Then press the spacebar, and if present, the desired program will load.

You may wish to bypass the Manager shell and interact directly with MS-DOS. Simply choose the FINISH option from the main menu, and the all-too-familiar >A prompt comes right up on the screen. Purists relax: the Manager in no way obscures MS-DOS from those who choose to access it directly. We can't imagine, however, even the most seasoned user rejecting the convenience of the Manager program for routine access to the powers of the Apricot.

Other Configurator utilities available from the Tool module or directly from MS-DOS are the following:

- Disk, which allows the setting up and erasure of directories and supported subdirectories; copying, renaming, verifying, and deletion of files, formatting and back-up of disks.

- Alter, which allows on-the-fly configuration of the serial port, on-the-fly selection of serial and parallel output, and setting the date and time on the clock.

- Tailor, which allows for the editing and entry of foreign characters and special fonts, programming of the keyboard, entry of a custom logo to replace the "Apricot" banner on the upper right-hand side of the main display, and modification of the Manager.

- Setup, which allows keyclick and bell volume adjustment, keypress autorepeat and delay-rate adjustment, customization of LCD default display, and customization of system defaults.

- Miscreen, which allows the microscreen to be programmed.

- Spooler, which allows files to be queued to a printer while the Apricot moves on to another task.

Special fonts, logos, keyboard configu-



rations, disk and overall system defaults may all be saved as disk files and retrieved when and where necessary. Most of the programs for creating these use ladder-based menus as does the Manager, and are quite painless to use. The font, logo, and keyboard editors, for example, are totally self-prompting, and make customization much easier than on any other system we have seen. Settings of keyclick and bell are aided by barcharts graphing volume. Everywhere, it seems, care has been exercised to make Apricot housekeeping as easy as possible on the user.

This capability comes at a price, however. When MS-DOS is invoked on a 256K system, free RAM memory is chopped in half to 128K. A 48K chunk of RAM is, however, enclosed in the BIOS (Basic Input/Output Section) to hold special fonts, bit-mapped screen RAM, or even act as a file buffer—like a

---

***The folks at ACT acknowledge that the choice of a word processor is an extremely personal one.***

---

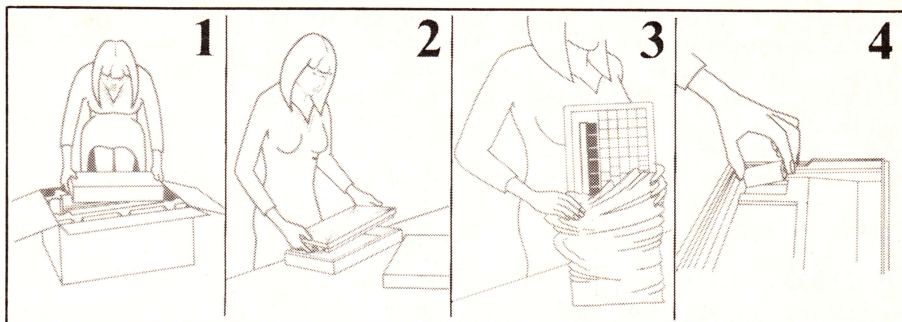
miniature RAM-disk. As programmers learn to use this feature, it will become more significant.

So don't hold your breath for Concurrent Apricot MS-DOS—we guess you would need 512K just to get off the ground with such an option. You are free to dream, however. And from what we have seen already, who knows *what* these folks are capable of.

### **Bundled Software**

For the base sticker price of the Apricot, these three operating systems might have been enough, but ACT has not stopped there. On the disks supplied with the unit (in a cute snap-pocket case), you also get the GSX Graphics System from Digital Research, which allows transportability of graphics standards across CP/M, Concurrent, and, believe it or not, MS-DOS. You get two versions of Basic, from Microsoft and Digital Research (the DR package, called Personal Basic, was not available at the time of this evaluation). You get *SuperCalc* and *SuperPlanner*, from Sorcim, which are the familiar spreadsheet package and a new address book/calendar planning package, respectively.

Originally, the folks at ACT chose not to bundle a word processor with the Apricot, acknowledging that the choice



*Please keep your seatbelt fastened during unpacking.*

of a word processor is a personal one. However, now *Superwriter*, from Sorcim, is bundled in the base sticker price.

ACT has announced that it will be releasing a bevy of business software, initially from its Pulsar line, in Apricot microfloppy format. It has announced Fortran, Pascal, and a Macro86 assembler. We took a quick look at run-time Cobol, and like *WordStar*, it did run. What more can you say about Cobol?

Anyone with access to a Victor 9000 or Sirius computer should know that the Apricot is Sirius-compatible as well, via the asynchronous port. Software downloaded in this manner will run without any problem. The only ramifications to the process are legal, not technical.

### **The Documentation**

The documentation accompanying the Apricot is superlative. It consists of five manuals: an Owner's Handbook, with general instructions and an introduction to the Manager; a Configurator Guide, documenting the many utility programs available; a CP/M and Concurrent User's guide; an MS-DOS User's Guide; and a *SuperCalc/SuperPlanner* manual.

The operating system manuals are based on the original documentation from Digital Research and Microsoft, and are quite readable. The MS-DOS guide is indexed, while the CP/M guide is not. The owner's handbook is a very general introduction, designed to prime the user without intimidation for what is to come. It is nicely indexed and includes a very helpful glossary. The Configurator Guide is one of the most important pieces of documentation in the package, and is quite clear, though unindexed, and a bit terse at times. The *SuperCalc/SuperPlanner* manual we received had no documentation concerning *SuperPlanner*—just a page outlining the functional structure of the program, and indicating that "information about this product is currently under production." We trust this will be remedied by the time you read this.

In total, the job documenting this new machine has been exceptional. Though it is generally accepted that English English and American English are two dif-

ferent languages, the documentation has not been rewritten for its U.S. debut, and save for minor problems, it does not suffer for it. An example of the severity of the situation: "If you think of Basic as a 'family saloon' programming language, then C is a 'sports car' language." A family saloon? Not even in Dodge City, guys. Full stop.

---

***The Apricot was an open-and-shut case of love at first sight—and lasting, true love upon further inspection.***

---

One of the biggest kicks we got out of the documentation was the international unpacking instruction card. It is an oversized fold-out pictorial and has been drawn by the same person who draws the escape instructions for passenger airplanes. It breaks the Apricot unpacking procedure into 15 easy steps, not counting inflation of your life jacket. For all its amusement, it does provide a guide for the petrified. Next to having your machine unpacked by a stewardess, it is unparalleled in its helpfulness.

### **The Bottom Line**

The Apricot was an open-and-shut case of love at first sight—and lasting, true love upon further inspection. From the outset, however, we felt it was a bit pricey. At \$2895, other options may beckon, clouding the issue. After thoroughly putting it through its paces, however, we changed our tune. The Apricot offers a great deal of value for the cost, considering the quality of its keyboard, drives, CRT, circuit design, and bundled software. It is truly a gem of a system.

Still, if it were to come down a thousand dollars or so, it might do more than just enchant us, and give us a good look at the future of the transportable market. It might just turn the whole U.S. micro market on its ear. We're keeping our fingers crossed. END

1985 Creative Computing Buyer's Guide