

APPLE // // //



A Closer Look

# Introduction

- Announced on May 19, 1980 at the National Computer Conference in Anaheim, California and shipped to dealers in June
- Became available in limited quantities at retail in the fall of 1980, but it wasn't until spring 1981 that volume shipments began
- A revised 5-volt edition was introduced in the fall of 1981, intended to address numerous problems
- A redesigned and greatly improved model, the Apple III+ was introduced in December 1983

# Specs

- SynerTek 6502A processor at 2 MHz
- 128K RAM (later 256K), supporting up to 512K
- Display: Color Composite, Digital XRGB
- 16 Colors at 280 x 192, 16 Shades at 560 x 192 (same in B/W)
- 3 text modes: 40 column, 80 column, 40 column colored text (each letter, and each background could be any of 16 colors)
- 1 Internal 140K 5.25" floppy drive
- Minimal ROM code
- User-definable character sets

- Ports: 2 Serial, 1 external floppy supporting up to 3 external Disk /// floppy drives
- Sound: 6-bit audio out
- Internal Expansion: 4 slots, electrically compatible with Apple II slots
- Apple II mode: emulates a 48K Apple II
- \$7800 (initial price), revised III: \$3495, III+: \$2995

# Worst. Apple. Ever.

(AppleMatters.com This Week in Apple History  
Podcast: Worst. Apple. Ever.)

# What did Apple think?

"It just wasn't a good enough machine and it had so many flaws from the start that when we reintroduced it we should have called it the Apple IV."

- Woz

"[We lost] infinite, incalculable amounts."

- Steve Jobs

"The Apple III was kind of like a baby conceived during a group orgy, and [later] everybody had this bad headache and there's this bastard child, and everyone says, 'It's not mine.'"

- Randy Wigginton

"It would be dishonest for me to sit here and say it's perfect."

- Mike Markkula

# Case Design

- Heavy cast aluminum case intended to act as a heat sink
- Designed by Steve Jobs without consulting the engineering team
- Fan-free design because Jobs felt fans were "noisy and inelegant"
  - Led to board failure brought on by overheating.
- Forced the engineers to redesign the board layout to fit the case
- Manufactured by a company that normally made engine blocks for automobiles



# Board Design

- Due to the redesign forced by Jobs, board traces were too close together, leading to shorting
- Non-gold connectors
- Flaw in manufacturer's flux washing process led to corrosion
- Problems with sockets led to chips loosening during transport
  - 20% of all Apple ///'s shipped in 1980 arrived DOA

# Clock Chip

(AppleMatters.com This Week in Apple History  
Podcast: "What Time Is It? I Have No Idea - I  
Use An Apple III")

- National Semiconductor clock/calendar chip began failing
- Month would show as "???", hour would often go to "30" or "40" before rolling over
- Apple removed the chip on all ///'s after February 1981, offered rebates
- Later started selling a separate "upgrade kit" for \$50
- No explanation was ever given

# Software

- Very little software was ready when the /// shipped
  - VisiCalc /// was the only third-party application available for several months.
  - Apple's own word processor, Apple Writer /// didn't ship until Fall 1981
- Early versions of SOS and Business BASIC were buggy. SOS was a memory hog

- Pascal wasn't released until late 1981. COBOL and Fortran repeatedly missed ship dates
- The "Developer Problem" - who wants to develop for a buggy machine?
- SOS was considered complicated and hard to use
  - Users took to pronouncing it "S-O-S" rather than "sauce" as Apple had hoped

# Underpowered?

- Missing features users felt should come in a business-class personal computer
- No internal hard drive
- No Pascal or other high-level language in ROM
- No high-resolution color monitor to take advantage of improved graphical specs and in-built RGB
- No 68000 chip

# When is emulation not emulation?

- An emulation mode was included to allow users access to the Apple II's software library
- Emulation requirement seriously limited Sander's options for development (6502 vs 68000, etc)
- Additional circuitry was added to limit emulation capability
  - No access to extended memory, improved graphics or 80-column modes
- Apple wanted users to think of the /// as a "serious" computer
- Didn't want to cut into Apple II sales
- Want to play games? Get an Apple II

# SOS and ProDOS

- Many concepts and techniques introduced in SOS live on in ProDOS
  - Prefixes and Pathnames
- Second block of a ProDOS boot disk contains Apple /// SOS boot loader
- Everything is viewed as a device
  - Most expansion cards made for the II can be made to work with the ///
  - Device driver and fit



# Discontinuation

- Apple tried to revive the /// with the ///+ but sales remained flat
- Steve Jobs had already decided that Macintosh represented the future of Apple
- Apple /// line quietly discontinued on April 24, 1984
- Final estimated installed base was 75,000 (65,000 Apple ///'s plus 10,000 ///+ machines)

# Life After Death

- User groups and magazines
  - Washington Apple Pi, Call-A.P.P.L.E., On Three continued to provide support long after Apple killed the ///
  - On Three was the only source for the 512K memory boards and other /// add-ons and hardware post-Apple
- Sun Remarketing
  - Did the same thing they would do later with Lisa hardware
  - As late as 1995, you could get a nicely outfitted /// for less than \$500

# Today's Apple ///

- Emulation
  - MESS and SARA
- Hardware Projects
  - Apple3 List
  - CFFA
  - Disk II on a ///

# Recommended Reading And Online Resources

- Washington Apple Pi
  - <http://www.wap.org/a3>
  - Apple /// Archive DVD and Apple /// in 10 EZ Lessons DVD
- Apple3.org
- Apple3-L mailing list
  - <http://news.altair.com/mailman/listinfo/apple3-l>
- Call-A.P.P.L.E.
  - <http://applearchives.org/apple/>