# What's Where in the APPLE

**Enhanced Edition** 

A Complete Guide to the Apple II Computer

Volume 2: Atlas & Gazetteer

Original Edition:

William F. Luebbert & Phil Daley

Featuring Publishing Legend:

Robert Tripp

Enhanced Edition:

Brian Wiser & Bill Martens



# What's Where in the Apple - Enhanced Edition: A Complete Guide to the Apple II Computer - "Volume 2: Atlas & Gazetteer"

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#### **PRODUCTION**

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Bill Martens → Proofreading, Chapter Revisions, Additional IIe/IIc Chapters

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Professor Luebbert, a U.S. Army retired Colonel, served on the faculty of the U.S. Military Academy, West Point, New York, from 1960 to 1978, where he taught Electrical Engineering and headed the Academic Computer Center.

## **Phil Daley**

Phil Daley is a software engineer who was the technical editor and in-house Apple specialist for Micro Ink, Inc., the publisher of *MICRO – The 6502 Journal* and the original publisher of *What's Where in the Apple*. He was a high school math and music teacher in Hillsborough, New Hampshire as well as an activist for the Boston Computer Society. In 1984, he created the Apple IIe Appendix (now a revised Chapter 21) for *What's Where in the Apple*. He holds a Bachelor of Science and a Master of Arts degree from the University of Connecticut.

### **Robert Tripp**

Robert Tripp started The Computerist in 1976 and Micro Ink in 1979. As an original Apple-1 owner, he is in the unique position of having received technical support from both Steve Jobs and Steve Wozniak, the founders of Apple, Inc. He published *MICRO – The 6502 Journal* from 1978 through 1984, along with a dozen 6502-related technical books. The magazine was a programming mainstay with coverage of many 6502 computing platforms of the time.

Because of Robert's interest and perseverance, he convinced author Dr. William F. Luebbert to expand the original *What's Where in the Apple* 7-page article into a highly-detailed, complete book. It was this resulting book, with its accompanying Atlas and Gazetteer, that became such an important resource in Apple II programmer's libraries. From 1982 to 1984, he published several versions of *What's Where in the Apple*, selling over 40,000 copies before it went out of print. He revisited that book with the *eWWA* released as a PDF in 2012. Robert has also developed computer-based medical products, including the first FDA-approved device for measuring human tremors, and was an Adjunct Professor at Arizona State University.

#### **Brian Wiser**

Brian Wiser is a producer of books, films, games, and events, as well as a long-time consultant, enthusiast and historian of Apple, the Apple II and Macintosh. Steve Wozniak and Steve Jobs, as well as *Creative Computing*, *Nibble*, *InCider*, and *A*+ magazines were early influences.

Brian designed, edited, and co-produced dozens of books including: *Nibble Viewpoints*: Business Insights From The Computing Revolution, Cyber Jack: The Adventures of Robert Clardy and Synergistic Software, Synergistic Software: The Early Games, The Colossal Computer Cartoon Book: Enhanced Edition, All About Applesoft: Enhanced Edition, Graphically Speaking: Enhanced Edition, What's Where in the Apple: Enhanced Edition, and The WOZPAK: Special Edition – an important Apple II historical book with Steve Wozniak's restored original, technical handwritten notes. Brian is also the author of *The Etch-a-Sketch and Other Fun Programs*.

He passionately preserves and archives all facets of Apple's history, and noteworthy companies such as Beagle Bros and Applied Engineering, featured on AppleArchives.com. His writing, interviews and books are featured on the technology news site CallApple.org and in *Call-A.P.P.L.E.* magazine that he co-produces as an A.P.P.L.E. board member. Brian also co-produced the retro iOS game *Structris*.

In 2005, Brian was cast as an extra in Joss Whedon's movie *Serenity*, leading him to being a producer and director for the documentary film *Done The Impossible: The Fans' Tale of Firefly & Serenity*. He brought some of the *Firefly* cast aboard his Browncoat Cruise and recruited several of the *Firefly* cast to appear in a film for charity. Throughout these experiences, he develops close personal relationships with many actors, authors, and computer industry luminaries. Brian speaks about his adventures to large audiences at conventions around the country.

#### **Bill Martens**

Bill Martens is a systems engineer specializing in office infrastructures and has been programming since 1976. The DEC PDP 11/40 with ASR-33 Teletypes and CRT's were his first computing platforms with his first forays in the Apple world coming with the Apple II computer.

Influences in Bill's computing life came from *Byte* magazine, *Creative Computing* magazine, and *Call-A.P.P.L.E.* magazine as well as his mentors Samuel Perkins, Don Williams, Joff Morgan, and Mike Christensen.

Bill is the author of *ApPilot/W1*, *Beyond Quest*, *The Anatomy of an EAMON*, and multiple EAMon adventure games, as well as a co-producer of many books including *What's Where in the Apple: Enhanced Edition, The WOZPAK: Special Edition, Nibble Viewpoints: Business Insights From The Computing Revolution*, and co-programmer for the iOS version of the retro game *Structris*. He has written many articles which have appeared in user group newsletters and magazines such as *Call-A.P.P.L.E.*.

Bill worked for Apple Pugetsound Program Library Exchange (A.P.P.L.E.) under Val Golding and Dick Hubert as a data manager and programmer in the 1980s, and is the current president of the A.P.P.L.E. user group established in 1978. He reorganized A.P.P.L.E. and restarted *Call-A.P.P.L.E.* magazine in 2002. He is the production editor for the A.P.P.L.E. website CallApple.org, writes science fiction novels in his spare time, and is a retired semi-pro football player.



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#### **Preface**

What's Where in the Apple is an incredible resource with a long history, and the monumental efforts of the original publishers and volunteers should not be overlooked. For the Enhanced Edition, we wanted to return the book to print, significantly improve upon it, and have something beautiful to hold.

The cover was designed by Brian Wiser, including redrawing and enhancing the original stylized apple. The new back cover has enhanced, hybrid text from the original publication and ads.

Wanting to make this invaluable reference even better, Brian designed the book with revised formatting to improve readability. Among other things like larger headers and better spacing, the descriptions in the Atlas and Gazetteer sections were converted from uppercase to sentence case, while keeping specific statements and routines all uppercase or title case. This was no small undertaking. Additionally, the Atlas, Gazetteer, and all program listings are now in a monospaced font that makes them more readable, and better distinguishes differences between characters like 0 and 0.

With any work of this complexity, especially one that was OCR converted for the 2012 *eWWA* edition, there were many lingering errors to be found and fixed in the production files we received. Bill Marten's programming background enabled us to identify and correct many errors and restore missing data, including data missing in the original *WWA*. All pages were proofread numerous times over many months by Brian and Bill, using an original *WWA* for comparison. Countless spelling, OCR and formatting mistakes were corrected, abbreviations were expanded, and wording was improved.

With the Atlas/Gazetteer (in Volume 2), we've also clarified descriptions and added hexadecimal addresses to routine names, resulting in improvements to almost every line. Using multiple references, including Apple II ROM source code and the *Apple II Reference Manual*, we added missing addresses and expanded overly simplistic descriptions, resulting in a much more thorough and accurate Atlas/Gazetteer.

Additional material is included throughout the book. With the Guide (in Volume 1), we added an overview of Apple II models to Chapter 1 and updated the Apple IIe Appendix as Chapter 21. Bill wrote new Apple IIe and IIc chapters and their accompanying Atlas/Gazetteer, incorporating ProDOS updates. The Index was restored and updated, and we added new Appendices. In an effort to be historically complete, we've included the publisher acknowledgements from previous editions, and an article by William F. Luebbert that originally appeared in *MICRO*. This new *Enhanced Edition* is the most complete and accurate edition ever created.

Lastly, we want to acknowledge Robert Tripp who we had the pleasure of working with on the *MICRO* magazine archive, *eWWA*, and again with this new edition. He provided his *eWWA* production files that made this edition possible and gave us a starting point. Additionally for this edition, Robert has generously written *The Evolution of WWA* and a *Foreword* highlighting his personal computing history. Thank you Robert for originally bringing *WWA* to life and helping preserve a tangible and important piece of the Apple II's legacy.

As we are passionate about preserving and enhancing all that is Apple, we hope everyone enjoys our *Enhanced Edition* and that it serves to aid and inspire the next generation of Apple II programmers.

Brian Wiser and Bill Martens Apple Pugetsound Program Library Exchange (A.P.P.L.E.) March 2016