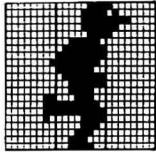


Graphics Guide to the COMMODORE 64™

Charles Platt





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Berkeley • Paris • Düsseldorf

Cover art by Patrice Larue
Design by Ingrid Owen

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***Graphics Guide
to the Commodore 64***

ACKNOWLEDGEMENTS

In 1983, having been commissioned to write some new educational video games, I spent two difficult weeks unravelling the quirks and complexities of an early model of the Commodore 64. I resolved to try to pass on my hard-won knowledge to others, so that they wouldn't have to go through the same trial-and-error learning process that I had experienced.

To do this properly, I needed the assistance of a good publisher; by which I mean one that would do more than merely buy the manuscript, print it, and distribute it, as is so often the case these days. A good publisher takes the time to edit, check, expand, and otherwise enhance an author's work.

Sybex is such a publisher, and I would like to thank the people there who helped to make this a better book. Specifically: Jonathan Kamin, my editor; Ingrid Owen, art and design; Valerie Brewster, typesetting; Valerie Robbins and Laura Meany, word processing; Ian Hughes and Dawn Amsberry, proofreading; and Guy Orcutt, photography. I have never before encountered such enthusiasm, attention to detail, and promptness.

All the program listings in this book are directly derived from my own working versions on disk, and should consequently be free from any typographical errors. If any errors are present, either in the programs or the text, the responsibility is mine.

—Charles Platt

INTRODUCTION

Why This Book Is Necessary

Commodore supplies two instruction texts for the Commodore 64. One of them, the *User's Guide*, is an introduction for beginners, included free with every computer. The other, the *Programmer's Reference Guide*, is sold as an optional extra. It assumes that the reader has some programming experience and describes every last little detail of the computer, in nearly 500 pages.

Why, then, is my *Graphics Guide* necessary?

For several reasons. First, the computer industry is so competitive that manufacturers are under great pressure to get their product on the market as quickly as possible. This gives them very little time to produce high quality, accurate instruction manuals. This is certainly true of the *User's Guide* supplied with the Commodore 64, which has many omissions and even errors. I had to figure out how to operate many aspects of the computer on my own.

Second, even though the *Programmer's Reference Guide* is very complete, it is not very easy to understand. The Commodore 64 contains some graphics features which are advanced and versatile, but they are not easy to program or to explain, and the *Programmer's Reference Guide* is virtually incomprehensible for any reader who lacks programming experience.

There's an obvious need for a book which explains all the complicated graphics features of the Commodore 64, without omissions, in a way that a beginner can understand. And that is exactly what this book tries to do.

The chapters take you step by step through writing a simple game program, making use of each graphics feature in turn. If you have never programmed a computer before, you will also need a reference book, such as Douglas Hergert's *Commodore 64/VIC 20 BASIC Handbook*, also published by SYBEX, for explanations of the most frequently used BASIC techniques: FOR/NEXT loops, DATA statements, and string variables, and the like. But you will not need any previous programming experience.

Once you understand the way the Commodore 64 works, you'll find this *Guide* a useful reference book. Its appendices summarize all the facts, including memory maps which I think are easier to use than the ones supplied by Commodore; a sprite-building guide which involves much less arithmetic than the Commodore system; a complete scale drawing of all the character sets (not available even in Commodore's own *Programmer's Reference Guide*); and some hints on how to handle the 1541 disk drive, which can be troublesome at times.

This *Guide* deals only with graphics. It is not a tutorial in general BASIC programming, and it doesn't deal with other specific subjects, such as sound. A thorough explanation of sound on the Commodore 64 would require two or three chapters, and there was not enough space for this additional material. Also, in my experience, it is seldom practical to control both graphics and sound in a BASIC video game, because the BASIC statements are executed quite slowly.

However, in the course of developing a sample game, I will describe some fundamental principles of memory management and some relatively advanced programming techniques. By the time you finish Chapter Eleven, you should have all the information you need to write ambitious video games of your own.

The pleasure in programming doesn't come from learning techniques out of a book. The real pleasure, I think, is in going off on your own and figuring out new ways of doing things for yourself. I hope my book will take you to the point where you can start doing exactly that.

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