

FUN & GAMES HOLIDAY GIFT GUIDE

TAKING FLIGHT—HISTORY, FUNDAMENTALS AND APPLICATIONS OF FLIGHT SIMULATION

Written By: Christopher Watkins and Stephen Marenka

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Reviewed By: Kevin Savetz

Flight simulators have always fascinated me. From the first time I played with Flight Simulator II on an Apple II (featuring chunky wire-frame buildings and runways) to the colorful, high-speed animated version that lives on my Mac today, the idea of flying through a simulated world is captivating. Flight simulation buffs will enjoy this book

Taking Flight—History, Fundamentals and Applications of Flight Simulation begins with a short history of (real) flight, and then takes off into a history of flight simulators. It focuses on military applications of flight simulation—"real" flight simulation—rather than the software toys I played with on the Apple computer. Next, the book gets serious, explaining concepts such as fluid mechanics, aerodynamic drag, propellers, rocket engines, and cockpit resource management. *Taking Flight* serves as a good introduction to the basics of flying in real life as well as in virtual space. These subjects can be a bit dry, but authors Watkins and Marenka have made them rather intriguing.

The bulk of the book looks at flight simulators themselves and the theory behind them. Again, the authors pull no punches in explaining concepts from polygon projection and antialiasing to hidden surface removal and simulation of controls and gauges. The accompanying disk includes source code for a simple flight simulation program for PCs and an explanation of how it works.

Although I am disappointed it deals almost entirely with high-end flight simulators rather than more pedestrian ones (like on my Mac), *Taking Flight* provides a detailed look into the history, present and future, of flight simulation, heavy on theory but remarkably readable nonetheless. (M&T Books, a subsidiary of Henry Holt and Co., 115 W. 18th St., New York, NY 10011. 212/886-9200)

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