

SUDOKU STRATEGIES AND THE SUDOKERSON MATRIX

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PREFACE

This book had its origin in the fall of 2006, and was intended originally as a Christmas gift for two grandchildren who had become fascinated by Sudoku. When it was begun, I had encountered Sudoku puzzles only in newspapers. I had never heard of "X-wings", or "swordfish", or "naked pairs" (at least not in this context) or "jellyfish". Hence the book represents what I found to work best by trial and error. In retrospect it turns out to be quite different from other books on Sudoku strategy, but I still prefer it for its simplicity and its power. To date I have never found a published Sudoku puzzle that could not be solved in a straightforward manner by the four-step methods in this book. They also are powerful enough to let you take a Sudoku puzzle apart, see how it is put together, and create your own variations, some of which can be quite interesting.

The analyses in this book are carried out on what I have modestly called the "Sudokerson Matrix". This is strictly a pencil-and-paper process, with occasional recourse to a xerox machine to save time making multiple copies. A friend, Bill Chapin, showed me how to put the Sudokerson Matrix onto a laptop computer using the *Excel* program. This makes life easier and eliminates the need for a photocopier, but it must be emphasized that the computer is not "solving" the puzzle for you in any sense of the term. It merely is a more efficient kind of pencil and paper and photocopier; you still do all of the analysis and all of the solving.

The methods in this book are four in number:

- (1) In honor of our local Hollywood culture I have called the simplest strategy the '*Snow Trouble* method, or "*Cancel while you work!*" This will get you through Sudokus classed variously as *Easy*, *Gentle* or *Mild*.
- (2) The search for twofold, threefold and fourfold ambiguities. This will carry you onward through *Medium* or *Moderate* puzzles.
- (3) The search for digits that can only occupy only one cell in a given row, column or box. This very powerful technique gets you through puzzles rated *Hard* or *Tough*.
- (4) The method of parallel analysis. This approach is enough to defeat even those Sudokus that are classed as *Diabolical* or *Fiendish*. It also gives you a fascinating window into the structure and construction of Sudoku puzzles, and may tempt you into designing your own.

Of course claiming infallibility for a solution strategy is a Clarion Call for skeptics to design *Super-fiendish-diabolical* Sudokus that cannot be solved by these methods. I have seen a few of these, usually involving substantially fewer starting digits than is customary. So I will not claim that these methods are all-powerful; I will only say that to date they have never failed to solve any Sudoku encountered in the published media.

Enjoy!