

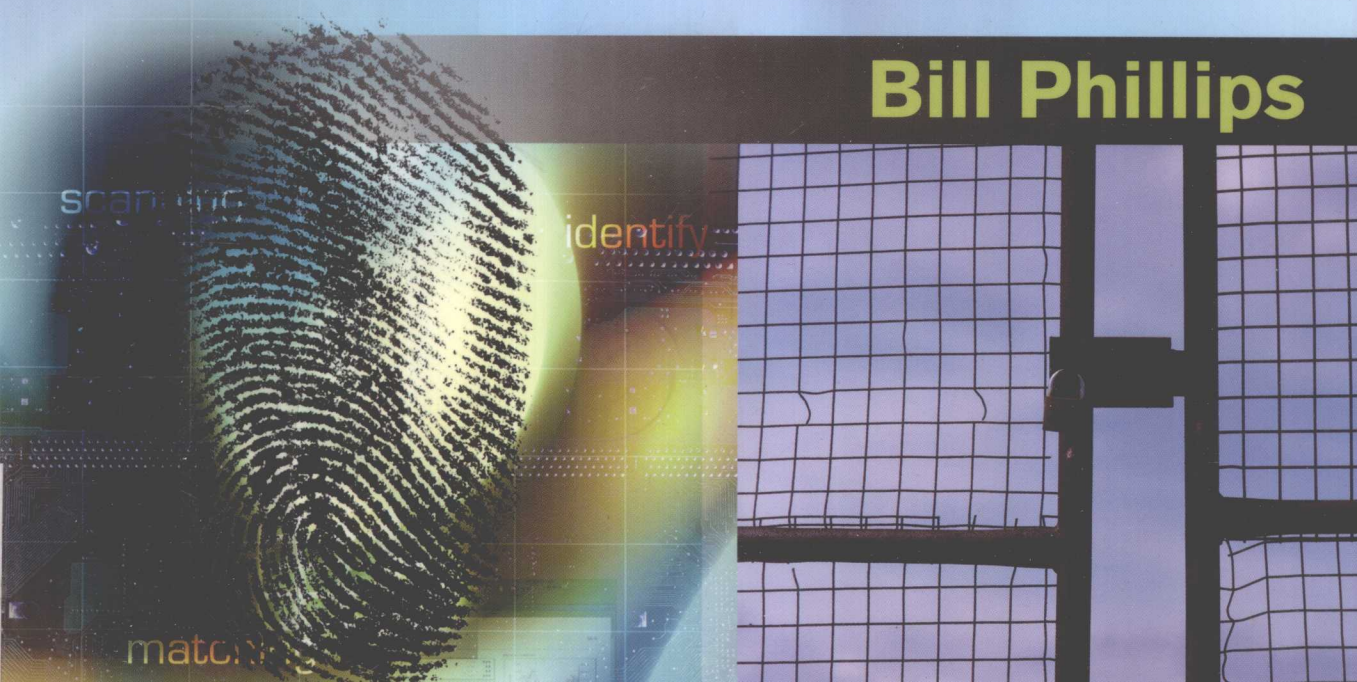


THE COMPLETE BOOK OF

HOME, SITE, AND OFFICE SECURITY

**Selecting, Installing, and Troubleshooting
Systems and Devices**

Bill Phillips



The Complete Book of Home, Site, and Office Security

Selecting, Installing, and Troubleshooting Systems and Devices

Bill Phillips

McGraw-Hill

New York Chicago San Francisco Lisbon London Madrid
Mexico City Milan New Delhi San Juan Seoul
Singapore Sydney Toronto

Library of Congress Cataloging-in-Publication Data

Phillips, Bill, date.

The complete book of home, site, and office security: selecting, installing, and troubleshooting systems and devices / Bill Phillips.

p. cm.

Includes index.

ISBN 0-07-146744-0 (alk. paper)

1. Security systems. 2. Dwellings—Security measures. I. Title.

TH9705.P485 2006

658.4'7—dc22

2006015534

Copyright © 2006 by Bill Phillips. All rights reserved. Printed in the United States of America. Except as permitted under the United States Copyright Act of 1976, no part of this publication may be reproduced or distributed in any form or by any means, or stored in a data base or retrieval system, without the prior written permission of the publisher.

2 3 4 5 6 7 8 9 0 DOC/DOC 0 1 3 2 1 0 9 8 7 6

ISBN 0-07-146744-0

The sponsoring editor for this book was Cary Sullivan, the editing supervisor was David E. Fogarty, and the production supervisor was Richard C. Ruzycka. It was set in Century Schoolbook by International Typesetting and Composition. The art director for the cover was Anthony Landi.

Printed and bound by RR Donnelley.

This book was printed on acid-free paper.

McGraw-Hill books are available at special quantity discounts to use as premiums and sales promotions, or for use in corporate training programs. For more information, please write to the Director of Special Sales, McGraw-Hill Professional, Two Penn Plaza, New York, NY 10121-2298. Or contact your local bookstore.

Information contained in this work has been obtained by The McGraw-Hill Companies, Inc. ("McGraw-Hill") from sources believed to be reliable. However, neither McGraw-Hill nor its authors guarantee the accuracy or completeness of any information published herein, and neither McGraw-Hill nor its authors shall be responsible for any errors, omissions, or damages arising out of use of this information. This work is published with the understanding that McGraw-Hill and its authors are supplying information but are not attempting to render engineering or other professional services. If such services are required, the assistance of an appropriate professional should be sought.

**The Complete Book of
Home, Site, and
Office Security**

A GIFT OF
THE ASIA FOUNDATION
DISTRIBUTED BY
SHANGHAI INTERNATIONAL STUDIES
UNIVERSITY LIBRARY

美國亞洲基金會贈書
上海外國語大學圖書館分發

NOT FOR SALE

Other Books by the Author

The Complete Book of Locks and Locksmithing, Sixth Edition

Locksmithing

The Complete Book of Electronic Security

To my sister and best friend Merlyn Smith-Coles

Preface

For about the last 20 years I've been writing books and articles about various aspects of physical and electronic security, including *The Complete Book of Locks and Locksmithing*, 6th edition, and *The Complete Book of Electronic Security*, both published by McGraw-Hill. But I haven't written a comprehensive book on home, office, and site security since 1994. A lot has changed since then, so I decided to write this book.

Whether you want to become a better security professional, improve the security of your own home, office, or site, or hire a security professional, this book can help you. You can use it to prepare for a variety of professional security certification and registration tests, including the certified protection professional (CPP), the registered professional locksmith (RPL), and the registered security professional (RSP). Copies of the RPL and RSP tests are included in Appendixes A and B, respectively.

This book covers a wide range of safety- and security-related topics, including strengthening doors and windows, choosing the best locks, using state-of-the-art access control systems, lighting for safety and security, using closed-circuit television systems, improving computer security, defending against terrorism, fire safety, and providing security consulting.

This book will teach you how to think like a security professional and not like a fire victim or burglar. That's because most burglars don't know a whole lot about security. They generally just take advantage of easy opportunities because most people aren't very security conscious.

You've probably heard these three myths:

1. If burglars want to get in badly enough, you can't keep them out.
2. The only way to keep burglars out is to use expensive high-tech devices.
3. Most home and office fires are unavoidable without taking expensive precautions.

Often such myths are perpetuated in books and articles written by well-meaning journalists who use crime or fire victims or "former burglars" as primary sources of information. But neither a burglar nor a crime victim is a security expert.

Contrary to movies and television crime dramas, the criminals who break into homes are not James Bond clones. Most home burglars know little about defeating locks or electronic security systems. Many rely on just one or two quick, quiet, and simple entry techniques, and they search for homes at which they can use those methods.

Home security articles and books that are based on advice from burglars often contain misleading, incomplete, and potentially dangerous information. In many cases the advice one burglar gives to thwart his or her favorite break-in technique can make it easier for other burglars to use their techniques.

Good security advice isn't based on scattered facts or personal anecdotes but rather on a comprehensive understanding of security measures, security hardware, and electronic systems. I've never been burglarized, attacked, or had a car stolen, nor have I ever been a criminal, but I have had years of training and experience in locksmithing, safe and vault work, alarm system installation, martial arts, and security consulting. I've also lived in some of the highest crime areas in the United States, including New York City and Detroit. I know that it is possible for people to stay safe and protect their property without spending a lot of money.

As you read this book, you'll learn how to assess intelligently safety and security needs and how best to meet those needs in a cost-effective way. If you or someone you know has been victimized by household crime or fire, you'll probably discover within these pages why the incident occurred and how it might have been prevented.

Each chapter includes do-it-yourself projects, money-saving tips, and practical advice that you can use right now, whether you live in a large city or a small town. Nearly every sentence of this book is written in nontechnical language, so you should have no trouble following the advice and instructions. However, I've included a Glossary that should be helpful if you find an unfamiliar word.

Chapter 16 includes a comprehensive home safety and security checklist to guide you in surveying a home. You may want to glance at it now, but you'll benefit more by using the checklist after you've read the whole book.

Because all the topics in this book are interrelated, you'll get the most out of it by reading it from beginning to end. Even if you skip around, you'll discover new ways to protect your home, your car, your family, and your business.

If you have questions or comments about this book, I'd love to hear from you. You can write to me at: Box 2044, Erie, PA 16512-2044, or e-mail me at LocksmithWriter@aol.com.

BILL PHILLIPS

Acknowledgments

I want to thank the following companies for helping me with this book: Adams Rite Manufacturing, Aiphone, Baldwin Hardware Corporation, Black & Decker Corporation, Black Widow Security Systems, eKey USA Systems, Gardall Safe Corporation, HighPower Security Products, LLC, Intermatic, Inc., Kaba Access Control, M.A.G. Manufacturing, Master Lock Company, Medeco Security Locks, Inc., Mul-T-Lock USA, Inc., NAPCO Security Systems, Inc., Progress Lighting, REDDCO, Inc., Securitron Magnalock Corp., and Visonic, Inc. Special thanks to my McGraw-Hill editor, Cary Sullivan, and to Patricia Bruce and Jonathan Gavin.

Contents

Preface	xv
Acknowledgments	xvii

Chapter 1. History of Loss Prevention	1
Early Civilizations	1
Ancient Greece	3
Ancient Rome	5
Europe in the Middle Age	5
The Eighteenth Century	7
Contemporary England	10
Peel's Reforms	10
The Growth of Policing	10
Early America	10
The Growth of Private Security in America	15
Railroads and Labor Unions	16
World Wars I and II	16
Twenty-First Century Security	17
 Chapter 2. Strengthening Doors	 21
How Burglars Can Get Through Doors	21
Removing the hinges	21
Prying off stop molding	22
Kicking doors down	22
Impersonating other people	23
Prying open sliding-glass doors	24
Breaking in through garage doors	25
Choosing a New Door	26
M.A.G. Manufacturing History and Products	27
 Chapter 3. Exit Door Devices	 33
Distinctive Exit Devices Also Provide Safety	35
Which Exit Device to Choose	35
Exit tests (grades 1 and 2)	36

Security test (grade 1)	36
Inside pull test (grade 1)	36
Push test (grade 1)	36
Torque to retract latchbolt test	36
Force to latch door test	37
Trim durability test	37
Cylinder test	37
Unlocked outside knob or lever torque test	37
Locked outside knob torque test	37
Locked outside thumbpiece test	37
Axial-load test	38
Vertical-load test	38
Outside knob or lever crush test	38
Outside rose and escutcheon dent test	38
Outside rose and escutcheon deformation test	38
Salt-spray test	39
Humidity test	39
Pencil hardness test	39
Ultraviolet (UV) light and condensation test	39
Tabor abrasion test	39
How a Fire Rating Is Determined	39
Pilfergard Model PG-10	40
Installation	41
Testing and operating	43
Pilfergard PG-20	43
Installation	43
Testing	44
Exitgard Models 35 and 70	44
Alarm Lock Models 250, 250L, 260, and 260L	46
Installation	46
Electronic Lock Model 265	47
Installation	47
Installing the control box	48
Wiring	48
Operating	49
Testing	49
Alarm Lock Models 700, 700L, 710, and 710L	50
Installation	50
Operation	52
Testing	52
Special operations	52
Alarm Lock Model 715	53
Installation	53
Installing the control box	54
Wiring	55
Operating	55
Testing	55
 Chapter 4. Securing Windows	 57
Glazing	58
Glass Blocks	59
A newer way to install glass blocks	60
Protecting Glass	60

Chapter 5. Lock Basics	63
Grades of Door Locks	63
Types of Door Locks	64
Choosing a Deadbolt	66
How deadbolts are defeated and what you can do about it	69
Installing a deadbolt	70
Choosing a Jimmy-Proof Deadlock	70
Choosing Multiple-Bolt Locks	71
Lock Cylinders	71
High-security cylinders	72
Making a standard cylinder more secure	73
Minimizing Your Keys	73
Simplex Mechanical Pushbutton Locks	74
Chapter 6. High-Security Mechanical Locks	75
Underwriters Laboratories' Listing	75
Key Control	76
Lock and Key Patents	76
Types of High-Security Mechanical Locks	77
Mul-T-Lock high-security system	77
Mul-T-Lock Integrator system key security	77
Schlage Primus	78
Kaba	79
Handing and key reading	79
Bitting notation	81
Identifying nonoriginal keys	81
Medeco locks	82
Chapter 7. Electronic Locks	87
Kaba 4000 Series	87
The Simplex and E-Plex 5000 Series	87
Electronic access control	88
Four-bolt installation	89
Chapter 8. Electromagnetic Locks	91
How They Work	91
Thunderbolt Electromagnetic Locks	92
Details about lock features	92
Powering the system	93
Controls for the locking system	93
Hooking the system up	94
Unusual applications	94
Thunderbolt 1500	95
Thunderbolt 1560	95
Chapter 9. Intruder Alarms and Home Automation	97
Burglar Alarms	97
Foil	99

Magnetic switches	99
Audio discriminators	100
Ultrasonic detectors	100
Microwave detectors	101
Passive infrared detectors	101
Quads	103
Dual techs	103
Professional versus Do-It-Yourself Alarms	103
What You Can Do That the Pros Won't	104
Tricks of Hardwiring	105
Home Automation Systems	105
Programmable controller	106
Smart House integrated system	106
Home automation controllers	107
X-10-compatible home automation systems	107
Alarm without wires	109
Wall outlets and modules	109
Troubleshooting	109
 Chapter 10. Access-Control Systems	 111
Access Control for an Apartment	113
Introduction to Biometrics (by eKeyUSA Systems)	113
What is biometric authentication?	115
What is applied biometric?	115
Where is biometric used nowadays?	115
How come that passwords and PINs decrease the level of security?	115
Why use biometric technology?	116
Which advantages does biometric recognition offer, as opposed to traditional security systems and methods?	116
How do biometric devices work?	116
How does biometrics protect personal information from unauthorized disclosure?	116
Is there a possible health risk?	117
Are there any predictions for the future of biometrics and fingerprint recognition?	117
Which measuring sizes can be used for verification of the performance potential of a biometric authentication system?	117
Why are not all biometric systems equally secure?	117
Trilogy Access-Control Locking System Features	118
 Chapter 11. Safety and Security Lighting	 121
Light Sources	121
Light Controllers	123
Preventing Accidents	123
Installing Motion-Activated Outdoor Lighting	124
120-Volt Lighting	124
 Chapter 12. Closed-Circuit Television Systems	 127
How CCTV Systems Work	128
Cameras	128
Monitors	129

Peripheral Devices	129
Installing a CCTV System	130
Video Intercoms	130
Lighting Considerations	131
Buying Tips	132
Installation Tips	132

Chapter 13. Safes and Vaults 133

Types of Safes	133
Safe Styles	135
Installing an In-Floor Safe	136
Moving Safes	137
Special Safe Features	137
Underwriters Laboratories Fire Safe Ratings	138
Underwriters Laboratories Burglary Safe Standard	139
Buying Safes	141

Chapter 14. Automobile Security 143

Antitheft Devices	143
Car Alarms	144
Special Features in Car Alarms	146
Warranties	146
Factory versus Custom Installation	147
Choosing an Installer	147
Stolen-Vehicle Retrieval Systems	148
Combating Carjackers	149

Chapter 15. Home and Office Insurance 151

Understanding Your Policy	151
How Much Building Protection Is Enough?	152
Personal or Home-Business Property	153
Special Disasters	153
Available Discounts	153
Federal Crime Insurance Program	154
Highlights	157
Response and recovery	157
Preparedness	157
Fire prevention and training	157
Operations support	158
Information technology services	158
Mitigation programs	158
Policy and regional operations	159
Executive direction	159
Disaster Relief Fund	159
Pre-Disaster Mitigation Fund	159
National Flood Insurance Fund	160
National Flood Mitigation Fund	160
Flood-Map Modernization Fund	160

Emergency food and shelter	160
Inspector General	160
National Insurance Development Fund	161
Chapter 16. Home and Office Security Basics	163
Surveying a House or Office	164
Home Safety and Security Checklist	165
Home exterior	165
Exterior doors and locks	166
Inside the home	166
People in the home	166
Surveying a Building	167
High-Rise Apartment Security	167
Chapter 17. Neighborhood Crime Watches	169
Basic Activities of a Neighborhood Crime Watch	169
What Is Neighborhood Crime Watch?	170
Why Neighborhood Crime Watch Works	170
Three Models for Crime Watch Programs	172
Block watch	172
Block watch with block captains	172
Citizen patrols	172
How to Start a Neighborhood Crime Watch	172
Block captain responsibilities	173
Chapter 18. Computer Security	175
Firewalls	175
Antispyware	176
Operating System Safeguards	177
Securing Your Web Browser	178
Mozilla Firefox	178
Apple Computer's Safari	179
Other Security Measures	179
Chapter 19. Choosing and Using Security Professionals	181
Locksmiths	182
Home Alarm Systems Installers	183
Physical Self-Defense Instructors	184
Security Consultants	185
Chapter 20. Preventing and Surviving Home Fires	187
Causes and Cures	187
Smoke Detectors	189
The KidSmart vocal smoke alarm	190
Fire Extinguishers	190

Escape Ladders	191
Fire Sprinkler Systems	191
Surviving a Home Fire	194
What to Do after a Fire	195
 Chapter 21. Terrorism	 197
What Is Suspicious Activity?	198
Who Should I Call to Make a Report?	198
Should I Give Police My Name and Contact Number?	198
Will My Identity Be Protected?	198
Do I Have to Talk to the News Media?	199
How Should I Focus My Attention?	199
What Should I Watch For?	199
Is My Awareness Really That Important?	199
Homeland Security Presidential Directive	199
Purpose	199
Homeland Security	200
Homeland Security Advisory System	200
Threat Conditions and Associated Protective Measures	202
Comment and Review Periods	203
 Chapter 22. Creating a Web Site	 205
Getting Ideas for Making a Web Site	205
Choosing a Web Site Host	206
Choosing a Domain Name	206
Creating Content	206
Sketching Out Your Web Site	207
Music	207
Graphics	207
Using Web Site Creation Software	207
Helping People Find Your Website	208
Using Search Engines	208
Name Your Pages	208
Use Meta Tags	209
Other Ways to Promote Your Site	209
 Appendix A. Registered Professional Locksmith Test	 211
 Appendix B. Registered Security Professional Test	 221
 Appendix C. Installing a Securitron Mortise Glass Lock	 231
 Appendix D. Finish Codes	 243

Appendix E. Trade Journals	247
-----------------------------------	------------

Appendix F. Installing Securitron Magnalock Devices	249
--	------------

Glossary	275
-----------------	------------

Index	299
--------------	------------