

CONTENTS

<i>Preface</i>	xiii
<i>Acknowledgments</i>	xv
Chapter 1 Two Rules of Game Testing	1
Don't Panic.....	1
Unfamiliar	2
Unprepared	3
Under Pressure	3
Unrested.....	5
Late Night Testing Checklist.....	6
Pre-Test.....	6
Post-Test.....	6
Nearsighted	7
Trust No One	7
Balancing Act.....	8
Word Games	9
Last Chance	10
Trust Fund.....	11
Give and Take	11
The Rest of the Story.....	12
Summary	13
Chapter 2 Being a Game Tester	15
Playing Games	16
Identifying Bugs.....	21
Here Comes the Judge	21
Amplifying Problems	23
Early Bird.....	24
Places Everyone	24

Notifying the Team.....	25
Describe	26
Pick a Severity.....	28
Prioritize.....	29
Be Helpful.....	33
Pass or Fail?.....	35
Testify to Others.....	35
Verify the Fix	37
Exercises	37
References.....	39
Chapter 3 Why Testing is Important.....	41
Who Cares?	42
Defect Typing	43
Functions.....	45
Assignments.....	46
Checking	48
Timing.....	49
Build/Package/Merge	50
Algorithms	53
Documentation	57
Interfaces.....	59
Testing Happens	61
Exercises	62
Chapter 4 Software Quality	65
Game Quality Factors.....	65
Game Quality Appraisal.....	67
Walkthroughs.....	67
Reviews	70
Checklist-based Reviews.....	70
Inspections	71
Game Standards.....	73
User Interface Standards	73
Coding Standards	75
Game Quality Measurements.....	76
Six Sigma Software	77
Phase Containment	79
Quality Plans.....	82
QA Personnel.....	83

Standards.....	84
Reviews and Audits	84
Feedback and Reports	85
Problem Reporting and Corrective Action	85
Tools, Techniques, and Methods	86
Supplier Control	89
Training	89
Risk Management	90
Summary	90
Exercises	91
References.....	92
Chapter 5 Test Phases	93
Pre-Production	94
Planning Tasks	95
Determine the Scope of Testing the Project Will Require...	95
Assign a Lead Tester.....	97
Determine Phase Acceptance Criteria.....	97
Participate in Game Design Reviews	98
Set Up the Defect Tracking Database.....	98
Draft Test Plans and Design Tests	101
Testing Before Testing Begins	102
Test Kickoffs	102
Alpha Testing.....	108
Alpha Phase Entry Criteria	108
Beta Testing.....	110
Beta Phase Entry Criteria	110
Design Lock	111
Letting Bugs Go.....	112
Gold Testing	113
Last-Minute Defects	114
Release Certification	115
Post-Release Testing.....	116
“Live Teams”	116
Exercises	118
Chapter 6 The Game Testing Process	119
“Black Box” Testing.....	120
“White Box” Testing	122
The Life Cycle of a Build.....	124

Test Cases and Test Suites	125
Entry Criteria	127
Configuration Preparation	129
Smoke Testing.....	131
Regression Testing	132
Testing “Around” a Bug	133
On Writing Bugs Well.....	134
Just the Facts, Ma’am	135
Brief Description	135
Full Description.....	136
Great Expectations.....	138
Habits to Avoid	140
Exercises	141
Chapter 7 Testing by the Numbers.....	143
Testing Progress	143
Testing Effectiveness	147
Tester Performance	149
Exercises	152
Chapter 8 Combinatorial Testing	153
Parameters.....	154
Values.....	154
Defaults.....	154
Enumerations	155
Ranges.....	155
Boundaries.....	157
Constructing Tables.....	158
Combinatorial Templates.....	178
Combinatorial Test Generation	181
Combinatorial Economics.....	185
Exercises	186
Chapter 9 Test Flow Diagrams	189
TFD Elements.....	190
Flows.....	190
Events	190
Actions	191

States.....	191
Primitives	191
Terminators	192
TFD Design Activities.....	192
Preparation.....	192
Allocation	192
Construction	193
A TFD Example.....	195
Data Dictionary	203
Data Dictionary Application.....	203
Data Dictionary Reuse	203
Data Dictionary Example	204
TFD Paths.....	208
Minimum Path Generation	209
Baseline Path Method	210
Expert Constructed Paths	212
Combining Path Strategies.....	214
Producing Test Cases from Paths	214
TFD Templates.....	219
To TFD or Not to TFD?.....	219
Exercises	220
Chapter 10 Cleanroom Testing.....	223
Usage Probabilities.....	224
Mode-Based Usage	224
Player Type Usage.....	225
Real-Life Usage	227
Cleanroom Test Generation.....	229
Cleanroom Combinatorial Tables	229
Cleanroom Combinatorial Example.....	232
TFD Cleanroom Paths	237
TFD Cleanroom Path Example.....	238
Flow Usage Maintenance.....	241
Flow Usage Profiles.....	244
Inverted Usage.....	246
Calculating Inverted Usage.....	246
Combinatorial Table Usage Inversion	247
TFD Flow Usage Inversion.....	249
Exercises	252

Chapter 11	Test Trees	255
	Test Case Trees	255
	Tree Feature Tests	258
	Test Tree Designs	263
	Exercises	271
Chapter 12	Ad Hoc Testing and Gameplay Testing	273
	Ad Hoc Testing	273
	Free Testing Comes From the Right Side of Your Brain	274
	“Fresh Eyes”	275
	Directed Testing Makes Order Out of Chaos	276
	Set Goals and Stick to Them	276
	If You’re Not Recording, You’re Not Testing	278
	Avoid Groupthink	279
	Testing as Detective Work	281
	How to Be a Repro Man (or Woman)	281
	The Scientific Method	283
	Gameplay Testing	284
	A Balancing Act	285
	“It’s Just a Suggestion”	287
	Making a Game Easy Is Hard Work	288
	External Testing	289
	Subject Matter Testing	289
	External Beta Testing	290
	Who Decides?	292
	Exercises	292
Chapter 13	Defect Triggers	295
	Operating Regions	295
	Pre-Game Operating Region	296
	Game Start Operating Region	296
	In-Game Operating Region	297
	Post-Game Operating Region	297
	The Triggers	297
	The Configuration Trigger	297
	The Startup Trigger	299
	The Exception Trigger	300
	The Stress Trigger	301
	The Normal Trigger	301
	The Restart Trigger	302

Classifying Defects	302
Defect Triggers and Test Designs	305
Combinatorial Design Trigger Examples	306
TFD Trigger Examples	311
Exercises	318
Chapter 14 Regression Testing and Test Reuse	321
Regression Testing	321
A-B-C's	322
Defect Modeling	325
Time Keeps on Ticking	327
Expanding Possibilities	329
Test Reuse	330
TFD Design Patterns	330
Looking Back and Forth	334
Combinatorial Expansion	336
Exercises	343
Chapter 15 Exploratory Game Testing	345
Exploratory Testing Overview	345
Sports	346
Stadium Tour	346
Player Tour	346
Manager Tour	347
Combat	347
Military Tour	347
Side-Scroller Tour	347
Medic Tour	347
Energy Tour	348
The Couch Potato Tour	348
The Rained Out Tour	350
The Taxi Cab Tour	350
The Prior Version Tour	351
The Obsessive-Compulsive Tour	351
Recording Exploratory Tests	352
Exploration Tips	354
Reporting Exploratory Results	355
Filing Bug Reports	357
Session Based Testing	358
References	360

Appendix A	Odd-Numbered Answers to Exercises	361
Appendix B	Basic Test Plan Template	375
Appendix C	Combinatorial Test Templates.....	383
Appendix D	Test Flow Diagram (TFD) Templates.....	391
Appendix E	On the Companion Disc.....	401
Index		409