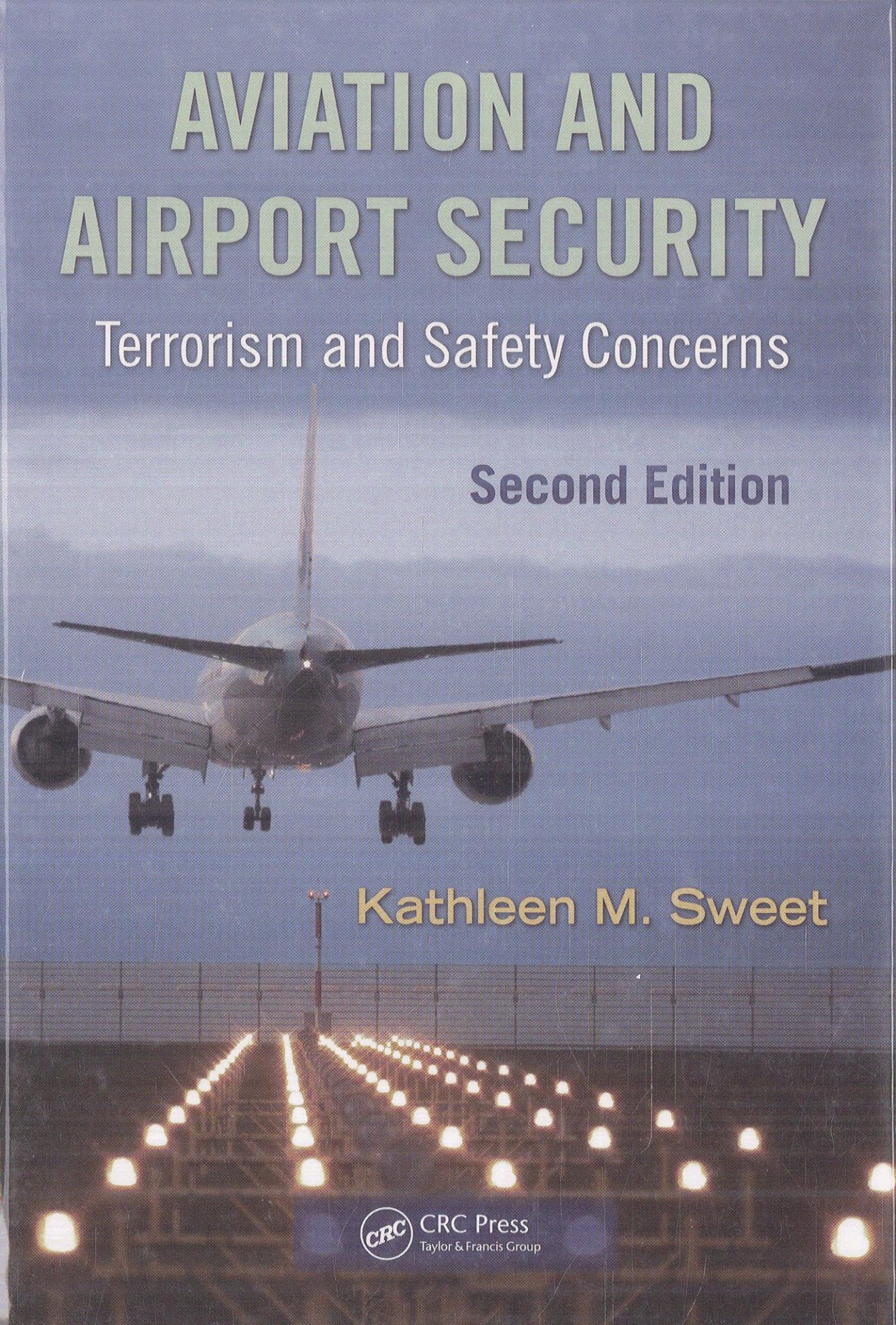


# AVIATION AND AIRPORT SECURITY

Terrorism and Safety Concerns

Second Edition



Kathleen M. Sweet



CRC Press  
Taylor & Francis Group

# Contents

Foreword .....	xvii
About the Author .....	xix
Introduction.....	xxi

## Chapter 1

The Aviation Industry: A National Security Asset.....	1
News .....	1
Importance of Air Transportation.....	1
Airways .....	2
Development of the Aviation Industry .....	2
Airlines .....	4
Facilities .....	4
Airway Routes .....	5
Deregulation .....	7
Consequences of 11 September to the Industry .....	8
Emergency Funding .....	9
Protecting Public Air Transportation.....	10
Conclusion .....	11
References .....	12

## Chapter 2

The Historical Hijacking Threat and Government Response: A Persistent Problem.....	13
News .....	13
Hijacking .....	13
Legal Responses to Expanding Security Measures .....	15
International Perspectives .....	17
The Trend Begins .....	17
Early Federal Aviation Regulations .....	18
Airport Security Programs.....	19
New Carrier Rules 1972 .....	19
New Airport Operator Rules 1972 .....	21
Resistance Fades.....	22
How to Implement the New Rules .....	23
Public Law 93–366.....	24
Dissemination of Threat Warnings .....	24
Recommendations of the President's Commission .....	24
Aviation Security Improvement Act of 1990.....	26
The Federal Aviation Reauthorization Act of 1996 .....	27
Civil Aviation Security.....	28
Aviation Security Research and Development Division .....	31
Costs .....	31
White House Commission on Aviation Safety and Security—The Department of Transportation Status Report .....	32

Aviation and Transportation Security Act—P.L. 107-71.....	32
Implementing Recommendations of the 9/11 Commission Act of 2007 (H.R. 110-1, P. L. No:110-53).....	33
The National Strategy for Aviation Security.....	33
The White House, March 26, 2007.....	33
Security Guidelines for General Aviation Airports .....	34
Transportation Security Administration, May 17, 2004.....	34
Conclusion .....	34
References .....	35
 <b>Chapter 3</b>	
International Solutions and Reactions .....	37
News .....	37
Crimes Against Humanity.....	38
The Tokyo Convention .....	39
Hijacking Convention: Convention for the Suppression of Unlawful Seizure of Aircraft.....	40
Montreal Convention.....	41
The Convention on the Prevention and Punishment of Crimes Against Internationally Protected Persons .....	41
Bonn Agreement 1978.....	42
International Convention Against the Taking of Hostages .....	43
Tokyo Summit 1986 .....	44
Further Efforts.....	44
Montreal Protocol of 1988.....	45
Diplomatic Conference on Air Law 1991 .....	45
Convention on the Physical Protection of Nuclear Material 1980 .....	45
G-7 Summit 1995 .....	46
Lyon Summit 1996 .....	46
Ministerial Conference on Terrorism 1996.....	46
Convention for the Suppression of Terrorist Bombings 1997 .....	47
International Convention for the Suppression of the Financing of Terrorism 1999... <td>47</td>	47
United Nations.....	47
The International Civil Aviation Organization (ICAO) and The European Civil Aviation Conference.....	49
Post July 2005 British Legislation.....	50
International Convention for the Suppression of Acts of Nuclear Terrorism.....	51
Conclusion .....	53
References .....	53
 <b>Chapter 4</b>	
Growth and Change: Aircraft as Missiles .....	55
News .....	55
Early Criminal Hijackings .....	55
Terrorist Hijackings Spread.....	56
Initial Public Responses .....	57
Cockpit Doors .....	58
Passenger Photo IDs.....	60

Crew Training .....	60
Profiling .....	61
CAPPS II .....	62
Secure Flight .....	62
No Fly List .....	63
Sky Marshal Program, Federal Air Marshal Program .....	64
History of Significant Air Hijackings Since 1972 .....	66
31 May 1972: Lod Airport .....	67
27 June 1976: Entebbe, Uganda .....	67
14 June 1985: Trans World Airlines Flight 847 .....	68
21 December 1988: Pan American Flight 103 .....	69
11 September 2001 .....	71
Other Hijackings in Recent Decades .....	72
Conclusion .....	73
References .....	74

## Chapter 5

Terrorism: The Roots Remain .....	75
News .....	75
Introduction .....	75
Causes of Terrorism .....	76
Middle East .....	77
Rival Claims .....	78
Palestinian Liberation Organization (PLO) .....	79
Abu Nidal .....	80
Hamas .....	81
Iranian Support of Terrorism .....	82
Hezbollah .....	84
Afghanistan: Usama Bin Laden .....	85
Europe .....	87
Germany .....	87
Italy .....	89
Spain .....	90
Northern Ireland .....	91
Japan .....	93
Aum Shinrikyo .....	94
Latin America .....	94
Tupac Amaru (MRTA) .....	94
Shining Path (Sendero Luminoso) .....	95
Russia .....	96
U.S. Domestic Terrorism .....	97
The Order .....	98
Nuclear Terrorism .....	99
A Dirty Bomb .....	100
Attack on Nuclear Power Plants .....	100
Diversion of Nuclear Material or Weapons .....	100
Biological and Chemical Warfare .....	100
Conclusion .....	101
References .....	102

## **Chapter 6**

International Major CounterTerrorism Units, Law Enforcement, and Intelligence Agencies — The Best Defense.....	105
News .....	105
Introduction .....	105
CounterTerrorist Units .....	107
Austrian Special CounterTerrorist Intervention Unit.....	107
Canadian Armed Forces Joint Task Force 2 .....	108
Great Britain: SAS.....	109
Germany: GSG-9.....	111
Israel: Sarayat Mat'Kal.....	112
Civil Guard .....	114
Border Guard Force .....	115
Ireland: Army Ranger Wing.....	115
France: Groupement d'intervention de la Gendarmerie Nationale (GIGN).....	115
Spain: Grupo Especial de Operaciones (GEO) .....	116
United States: Special Forces Teams.....	117
Operation Ice Eagle .....	118
Local Law Enforcement .....	119
Training .....	120
The U.S. Customs Service .....	121
Customs and Border Protection Bureau .....	122
Drug Enforcement Agency .....	123
Federal Bureau of Investigation.....	124
The U.S. Marshals .....	127
Department of Homeland Security.....	128
Transportation Security Administration.....	129
The Immigration and Naturalization Service, U.S. Citizen and Immigration Service .....	130
The Border Fence and The Real ID Card Program.....	132
9-11 Commission .....	133
Director of National Intelligence .....	135
The Intelligence Community .....	136
Terrorist Screening Center (TSC).....	137
United States Postal Inspection Service .....	139
Interpol .....	141
Conclusion .....	142
References .....	143

## **Chapter 7**

Screening—The Last Line of Defense.....	145
News .....	145
Introduction .....	145
Sterile Concourse .....	146
Sterile Boarding Areas.....	149
Departure-Gate Screening .....	150
Screening Checkpoint Augmentation .....	150
Law Enforcement Officers at the Gate .....	151

Flexible Law Enforcement Response Program .....	152
Airport Categories.....	152
Public and Private Security Interface.....	153
Criminal Case Law Examples.....	155
<i>U.S. v. James Edward Ware</i> , U. S. District Court, Western District of Oklahoma, August 1970.....	155
<i>U.S. v. Feldman</i> , U.S. District Court, Eastern District of New York, 1 May 1969 .....	155
<i>U.S. v. Benrus Eugene Brown</i> , United States District Court, Western District of Texas, October 1969 .....	155
<i>Lawrence Havelock v. the U.S. Court of Appeals</i> , Tenth Circuit June 1970.....	156
<i>U.S. v. Reid</i> 2003 (Shoe Bomber).....	156
<i>U.S. v. John Walker Lindh</i> .....	157
Case Law Summary .....	158
Initial Screening .....	158
Screening Procedures.....	158
Screening Baggage .....	160
Threat Assessment .....	161
3-1-1 Rule .....	162
Screening Computers and Laptops .....	163
Discovered Contraband .....	163
Battery Restriction .....	164
Screening Passengers .....	164
Cast Scope .....	166
Rating Hand-Held Metal Detectors.....	166
Body Search.....	167
Screening Airport and Airline Employees.....	168
Screening Diplomats .....	169
Registered Traveler Program.....	169
No Fly List.....	170
Federal Behavior Detection Officers.....	171
Theft .....	171
Potential TSA Ethics Issues .....	172
Public Relations.....	172
Airborne Aircraft Security.....	173
Federal Flight Deck Officers.....	173
Training .....	173
Conclusion .....	174
References .....	175

## **Chapter 8**

Private Security Personnel versus Transportation Administration Security Personnel— Increased Supervision?.....	177
News .....	177
Introduction .....	177
Criminal Guards: Foxes Guarding the Chickens .....	179
Ergonomic Solutions .....	181
Potential Operator Concerns with Specific Screening Technologies.....	182
Measuring Operator Performance.....	182

Operator Selection.....	183
Tougher Than They Thought.....	185
The Opt Out Program.....	186
Conclusion .....	188
References .....	189

## **Chapter 9**

Metal Detectors, X-Ray Inspection, Explosive Detection, and Trace Detection Devices:	
Will the Public Tolerate the Intrusion?.....	191
News .....	191
Introduction .....	191
Metal Detectors .....	192
Selecting a Metal Detector.....	193
Hand-Held Body Scanners .....	196
Testing .....	197
Metal Detectors, Computers, and Personal Medical Devices.....	197
X-Ray Inspection Units .....	198
Passive Millimeter-Wave Imaging .....	198
Active Millimeter-Wave Imaging.....	199
Selecting an X-ray Unit .....	199
Sizers .....	200
Film and Laptops.....	200
Passenger X-Ray Screening Devices.....	201
Portable Digital X-Ray Imaging Systems .....	202
Testing X-ray Equipment.....	202
Detection Capabilities .....	203
Prior X-Ray Explosive Detection Devices .....	203
U.S. Standard on Radiation Protection .....	205
New Computer Software .....	205
Explosive-Detection Systems .....	206
Three-Dimensional Imaging: Explosive Assessment Computed Tomography.....	208
Bottled Liquid Scanners.....	209
Trace Detection Technology Today.....	210
Explosive Detection Devices for Baggage .....	211
Enhancing ETD Capability .....	212
Thermedics EGIS 3000, EGIS II, EGIS III .....	212
Barringer IONSCAN 400B, Centurion, Sentinel II.....	212
ION Track ITEMISER 3, Entry Scan .....	213
Taggants .....	213
Project Hostile Intent.....	214
Conclusion .....	214
References .....	214

## **Chapter 10**

Cargo Security: A Loose End.....	217
News .....	217
Introduction .....	217
Cargo Carrier Responsibility .....	219

Report to Congress on Air Cargo Security .....	220
Arming Cargo Pilots .....	221
Suicides .....	222
Baggage Tags.....	223
Passenger and Baggage Reconciliation .....	224
Airport Lockers.....	225
Container Hardening .....	226
Blast Containment versus Blast Management .....	226
Airmail Security.....	227
Indirect Air Carriers .....	228
Known Shipper.....	229
Unknown Shipper.....	229
GAO Status Report on Cargo Security 2002 .....	230
Strategic Plan of TSA.....	230
Enhanced Measures .....	232
Summary of Airforwarder's Association Objections.....	234
The Latest.....	234
Vacuum Chambers .....	235
Inspection of Hazardous Cargo.....	235
International Cargo Standards .....	236
TSA Inspection of Airports.....	236
Conclusion .....	237
References .....	238

## **Chapter 11**

Security and the Rules of Law—A Slippery Slope .....	239
News .....	239
Introduction .....	239
Fourth Amendment .....	241
Administrative Search Exception.....	242
Balancing Approach.....	243
Less Intrusive Alternatives.....	244
Individual Stop and Frisk Searches.....	245
Selectee Class Stop and Frisk Search.....	246
Consent Exception.....	246
Other Exceptions to Fourth Amendment Requirements .....	249
Border Searches.....	249
Exigent Circumstances .....	250
Reasonableness.....	250
Probable Cause.....	251
The Exclusionary Rule .....	251
The Legal Authority of Private Persons to Search.....	252
Exceptions to the Exclusionary Rule.....	253
Inevitable Discovery.....	253
Good Faith Exception.....	254
Police Participation .....	255
NonViolent Threats? .....	256
Airport Administrative Screening Searches at Airports .....	258
Passenger's Right to Terminate a Search .....	260

Alternate Viewpoint .....	261
The War on Drugs .....	262
Passenger Rights .....	263
New Law in the Area of Searches .....	264
New Technologies and the Law .....	265
Conclusion .....	268
References .....	269

## **Chapter 12**

Foreign Airport Security: Comparison of U.S. Law and Foreign Domestic Law—Lessons Learned .....	271
News .....	271
Introduction .....	271
Ground Security .....	272
American Assessments .....	273
Diversion Airports .....	274
Legal Remedies .....	276
Legislation after 11 September 2001 .....	277
AntiTerrorism Legislation in the United Kingdom .....	279
Post 2005 London Bombings .....	280
Canada's War with the FLQ .....	282
Germany .....	282
Italy .....	283
Profiling .....	283
International Views of Profiling .....	286
SAFEE .....	286
Bomb Sniffing Dogs .....	286
Conclusion .....	287
References .....	288

## **Chapter 13**

Technological Improvements: Some Intrusive, Some Not .....	289
News .....	289
Introduction .....	289
Gore Commission .....	290
Homeland Security: Science and Technology Directorate .....	292
Antimissile Defense Systems .....	292
Microwave Holographic Imaging .....	295
Triggered Spark Gap .....	296
BOSS <sup>TM</sup> .....	296
Flight VUT <sup>TM</sup> .....	296
BiosimMER <sup>TM</sup> .....	297
Quadrupole Resonance Devices .....	298
Intelliscan <sup>TM</sup> 12000 Metal Detector .....	299
Biometric Systems .....	299
FACE IT <sup>TM</sup> Access Controls .....	300
Imaging Technologies .....	301
Trace-Detection Technologies .....	302

Fuel Flammability .....	302
Remote-Controlled Aircraft.....	303
Improved Closed-Circuit Television Technology.....	303
Cockpit Doors .....	304
Conclusion .....	305
References .....	305

## **Chapter 14**

Airport Operator Concerns and Other Safety and Security Issues: The Foundations of Security .....	307
News .....	307
Introduction .....	307
Airport Runway Incursions .....	308
Passenger Interference.....	309
Air Rage and Passenger Involvement.....	312
Air Rage and Civil Liability .....	313
Civil Remedies .....	314
Conventional Weapons .....	314
Explosives.....	315
Nuclear and Biological Weapons .....	316
Embracing Risk Management.....	319
Assessing the Threat .....	319
Law Enforcement .....	320
Federal Resources.....	320
Private Intelligence Services .....	320
Stratfor Strategic Forecasting, Inc .....	321
Jane's Information Group .....	321
Economist Intelligence Unit .....	322
Flight Crew Involvement.....	322
Conclusion .....	323
References .....	324

## **Chapter 15**

Access Controls, Perimeter Security: Another Foundation.....	325
News .....	325
Introduction .....	325
Access Control .....	326
Locks .....	326
Access Cards .....	327
Electronic Locks.....	328
Sensors.....	328
Biometric Security Systems .....	328
Retinal Scans .....	329
Fingerprint Verification Readers .....	329
Voiceprint Identification .....	329
Hand Geometry .....	329
Facial Scan.....	329
Signs .....	329

Perimeter Fencing and Lighting.....	330
Exterior Alarm Sensors.....	331
Motion Detectors .....	332
Microwave .....	332
Charged Coupled Devices .....	333
Portal Coaxial Cables .....	333
Electric Field.....	333
Vibration and Stress Detectors .....	333
Closed Circuit Television.....	333
Infrared Motion Detectors.....	334
Active Infrared.....	334
Passive Infrared .....	334
Glass-Break Detectors.....	334
The Control Room.....	334
Alarms .....	335
No Power, No Security .....	335
Media Intrusion .....	335
Computer Security.....	336
Kiosks .....	337
Conclusion .....	337
Epilogue.....	337
Changes .....	338
The More Things Change, The More They Remain the Same—Screeners Are Screeners.....	338
Arming Pilots .....	339
The Federal Air Marshal Program.....	340
Emerging Technology.....	340
Civil Liberties.....	341
Summary .....	341
References .....	342
Selected Bibliography.....	342
<b>Index .....</b>	<b>347</b>