## AIRPORT, AIRCRAFT & AIRLINE SECURITY

KENNETH C. MOORE

# AIRPORT, AIRCRAFT & AIRLINE SECURITY

KENNETH C. MOORE



Copyright © 1976 by Security World Publishing Co., Inc.

All rights reserved. No part of this book may be used or reproduced in any manner without written permission except in the case of brief quotations embodied in critical articles and reviews.

First Edition 1976

Security World Publishing Co., Inc. 2639 South La Cienega Boulevard Los Angeles, California 90034

Printed in the United States of America

Library of Congress Cataloging in Publication Data

Moore, Kenneth C 1934-Airport, aircraft & airline security.

Includes index.

1. Airports--Security measures. 2. Hijacking of aircraft--Prevention. 3. Aeronautics, Commercial--Freight--Security measures. I. Title. HE 9797.4.S4M66 387.7'364 76-45104 ISBN 0-913708-26-7

#### To my wife, Betty

If you can find a truly good wife,
she is worth more than precious gems! . . .
Her children stand and bless her;
so does her husband. He praises her
with these words:
"There are many fine women in the world,
but you are the best of them all!"

Proverbs 31:10, 28-29

#### Foreword

The rapid growth of the security industry in the United States has been accompanied by an equally rapid acceptance of security managers as professionals. However, to be truly regarded as an industry of professionals, security people must develop a solid library of value to the professional and non-professional alike.

There are many excellent books on various disciplines of security, as well as on the management of the security function of a company or government department. The field of airline, aircraft and airport security has been noticeably delinquent in its failure to contribute a "Blackstone" to the library. There have been legal treatises and bibliographies on aircraft hijackings, but very little on the anti-hijacking security system. There have been many articles on cargo security which are usually oriented to policy or legislation, but there has been very little on the practical steps to follow to defeat the cargo thief, and baggage security has been almost completely ignored.

Ken Moore has filled many voids with this honest, authoritative and complete text on Airport, Aircraft and Airline Security. Security problems and solutions in preventing hijacking and in protecting cargo and baggage are covered in considerable detail. He uses the same thorough approach in dealing with credit card frauds and the security of ticket stock.

There are some professionals in aviation security who will not agree completely with what has been written here. There are those who will say that the government role has been understated or overstated, depending on individual viewpoints.

I believe Ken Moore has been able to strike a good balance

between government and industry input, particularly in the anti-hijacking program. In nearly all programs involving several elements of industry and government, cooperation is something to be hoped for; but it is not always something you have. Ken makes the point that, despite occasional bureaucratic intransigence and airline or airport recalcitrance, government and industry can work together to produce a highly successful program.

Those who have the firm belief that security is a profession will be encouraged by this fine addition to authoritative information in the security field.

Harry J. Murphy Director of Security Air Transport Association of America

#### Preface and Acknowledgements

The decision to write a book on security presents the concerned security professional with a dilemma. He must first decide whether the book should be written at all, and—if so—how it should be done. He wants to pass on information which may be of assistance to his colleagues, but he cannot overlook the possibility that the information might fall into the wrong hands. Thus, the specialist on alarms must write in such a way as to assist those seeking to protect their premises without inadvertently giving away information that would teach the unscrupulous how to circumvent an alarm.

With the advent of air piracy, this dilemma has been particularly evident in the field of airport and airline security. Each detailed description in the news media of how a hijacker was able to get past security, or perhaps of what slip-up led to his capture, seemed to provide an instructive lesson for future hijackings. Of necessity, then, this book must remain silent in some of these sensitive areas. Other facets of the anti-hijacking program, however, such as the predeparture screening required of all U.S. carriers, are dealt with in detail.

The entire security industry has changed dramatically in recent years. What started out in many firms as an Investigations Department often evolved into the Security Department. Industrial security, once synonymous with "plant protection," has expanded to encompass the broader but also more specialized loss-prevention function in many companies. This expansion came naturally from wider recognition of security's basic task, the protection of company assets. Security responsibilities grew from basic job description requirements to include such areas as cash

control procedures, protection of proprietary information, and auditing functions. And it is no longer enough to specialize only in industrial security. Present-day challenges have created a need for specialized expertise in more narrowly defined fields such as campus security, hotel security, bank security, hospital security, government security—and airline and airport security.

As yet, however, college-level courses even in the general subject of industrial security, although growing in number, are still relatively few. Those who seek training in one of the more specialized security fields must usually find someone willing to hire and train them on the job in an apprentice capacity until such time as they have earned their spurs.

From this need came the concept of this book. It is written for those in the aviation security field who might profit from the ideas and information of a co-worker who faces the same problems on a daily basis. It might also assist law enforcement personnel posted to airport security duty, as well as those airline or airport employees who have been assigned to security as an extra hat to wear or a new responsibility for which their background and experience have not prepared them. Finally, because the scope of airline and airport security has been changing too rapidly, it is hoped that this book will be of value even to some of the "old timers" in the field who grew up with air transportation.

Our goal, air safety and security, is a common one. We can and should share ideas and work together to achieve it.

As a fledgling author, I have come to the conclusion that the most important part of any book is the acknowledgements. Perhaps only another author can know the genuine gratitude one feels toward all those who have given so willingly and generously of their time, knowledge and experience.

The genesis of this book was a Master's thesis submitted as a requirement toward a degree in Criminal Justice Administration at San Jose State University, San Jose, California. Dr. Peter C. Unsinger, Chairman of my thesis committee, was of great help, especially in assisting me to write the thesis "long distance" after I moved to Illinois. Also serving on my thesis committee were Glen A. Hill and Dr. Harry W. More, the latter then Chairman of the Department of Administration of Justice at San Jose State, whose encouragement in my studies was significantly helpful.

It cannot be overlooked that every book, and most certainly a specialized text, must have a publisher. Much appreciation is due to Ray Farber, President of Security World Publishing Company, for his recognition of the need for such a book, his faith in an unpublished author, and his willingness to commit the resources of his company and his people to the effort. Mary Margaret Hughes served as editor of the book, contributing polish and organization to the manuscript. Louis Charbonneau coordinated the entire editing and publishing task.

Several persons were of help in reading the manuscript and offering comments and suggestions. Joseph A. Sullivan, formerly Executive Director of the Airport Security Council and now Vice President of Audits and Security for Pan American World Airways, has personally contributed much to the betterment of aviation security. I was extremely pleased that Joe agreed to review the manuscript, and his suggestions contributed to clarification and balance. Harry J. Murphy, Director of Security for the Air Transport Association of America and an author himself, encouraged me in the writing of this book and his comments on the final draft were particularly helpful. I also appreciate his consenting to write the Foreword.

Although this book has no FAA stamp of approval, since none can be given, I am grateful to Richard F. Lally, Director, Civil Aviation Security Service, and to Joseph Blank, Deputy Director, for consenting to review the manuscript and for their valuable comments. These two gentlemen endeavor to make a reality of "Compliance through cooperation and understanding."

James M. Miles has been both a source of encouragement and a valuable resource person during the writing of this book. It has been my good fortune to work under Jim's tutelage and supervision for most of my airline security career. I am grateful for his review of the manuscript but more importantly for his friendship and wise counsel over the months and years.

The opinions expressed in this book are those of the author and do not necessarily represent the opinions of United Air Lines, Inc. Many others assisted, however, by sharing thoughts and ideas, in some cases letting me "pick their brains" in areas of expertise where their knowledge was vastly superior to mine. Particular thanks for such help are due to Michael P. Baxter, Jane K. Fine, Edward A. Hunter, Herb Ingram, Robert L. Jones, Joe Lehnen, R.

Lee Littiken, Kevin S. Malanaphy, Dale Medland, Niles Nelson, George L. Niemeyer, Bill Salo, J.D. Smith, and J.W. "Wes" Thomas.

For additional assistance, appreciation is expressed to all of the following:

To James Given, Chief, Technical Security Division, FAA; John P. Battema, Torr X-ray Corporation; Dr. David Haas, Philips Electronic Instruments, Inc.; David E. Calhoun and Ben Madallena, Bendix Aerospace Systems Division; Raymond G. Yates, Astrophysics Research Company; Frank A. Cardman, New Security Concept; Art Retzke, Vice President, Ticket Division, Rand McNally; Maurice Fitzgerald, Director, Fraud Prevention, Pan American World Airways; and Hugh E. Smith, President, Transportation Security Services.

To Birch Doran, Chief, Air Transportation Security Division; James O. Taylor, Chief, Air Security Branch; Rufus Henton, Jr., Principal Security Inspector; and to Jim Souder and Joe Meehan, all of FAA's Great Lakes Region, for their willingness to work with carriers in a cooperative spirit toward our common goal of air safety.

To General Benjamin O. Davis, Jr. (USAF, Retired), for his unequaled contribution to the safety and security of civil aviation. General Davis was so involved in every aspect of aviation security during his "second career" with the Federal Government that some portions of this book were difficult to write without appearing to be his biography. His retirement was a loss to the industry.

To Daniel A. Ward, Director of Transportation Security, who continues to work effectively with the Department of Transportation, making a significant contribution to the security of cargo generally.

And special thanks must go to my wife, Betty, for her typing skills and for her patience, support and encouragement. Steve and Mary Kay, my children, are also entitled to a word of appreciation for too many evenings spent alone while Dad was closeted in the study with the typewriter.

Finally, I try—not always successfully—to avoid separating my spiritual life from my daily activities. During the writing of this book, two verses from the Scriptures found new meaning for me, particularly when pressures became heavy. One (Psalm 37:5)

was "Commit everything you do to the Lord. Trust Him to help you do it and He will." The other (*Proverbs 16:3*) was "Commit your work to the Lord; then it will succeed." If my thanks for all the help I have been given are to be complete, then this final acknowledgement is most important.

Kenneth C. Moore Arlington Heights, Illinois For I dipped into the future, far as human eye could see, Saw the Vision of the world, and all the wonder that would be;

Saw the heavens fill with commerce, argosies of magic sails, Pilots of the purple twilight, dropping down with costly bales.

"Locksley Hall" Alfred, Lord Tennyson

### **CONTENTS**

Contents
Foreword xiii
Preface and Acknowledgements
SECTION I ATTACKS AGAINST AIR TRAFFIC
Chapter 1 The Skyjacking Threat 3
Evolution of Skyjacking • Motivation • Government Involvement • Passenger Identification Cards • Other Suggestions • Development of the "Profile" • The Sky Marshal Program • Airport and Airline Security Proposed • New Carrier Rules • New Airport Rules • The Last Straw • The End Begins • Problems of Implementation • Carrier Problems • Training • Funding • Growing Pains • The Standard Security Program
Chapter 2 Skyjacking Counteraction
Decline in U.S. Hijackings • World-Wide Problems • New "Teeth" in U.S. Law • What Ended U.S. Hijacking? • When Is An Attempt? • Overseas Screening Security
SECTION II AIRCRAFT SECURITY
Chapter 3 Predeparture Screening
Sterile Concourse • Sterile Boarding Area • Departure Gate Plan • The Law Enforcement Officer • Screening Passengers • The Body Search • Special Situations • Screening Airport and Airline

Personnel • Screening Diplomats • Screening Carry-on Luggage • Undetected Weapons • X-Ray Inspection of Carry-on Luggage • Special Search Situations • Selection and Training of Contract Security Services
Chapter 4 Screening and the Law
Fourth Amendment Provisions • Legal Authority of Private Persons to Search • Police Participation • Who Is a Law Enforcement Officer? • Legality of Airport Screening Searches • Contraband
Chapter 5 Metal Detectors and X-Ray Inspection
Selection of a Metal Detector • Testing the Metal Detector • X-Ray Inspection Units • X-Ray Unit Selection • The X-Ray Safety Controversy • Further Rule Revision • Radiation Studies • Radiation Badges • X-Ray and Photographic Film • X-Ray and Magnetic Tape • X-Ray Unit Testing
Chapter 6 Weapons, Prisoners and Restricted Articles 97
Dangerous Weapons • Other Restricted Articles • Handling Weapons Accepted as Baggage • Persons Authorized to Carry Weapons in Flight • Armed Police Officers in the Sterile Concourse • Arming Flight Crews • Carriage of Prisoners
Chapter 7 Baggage, Cargo and Exempt Flights109
Baggage Handling Procedures • Explosives and Screening • Cargo and Screening • Charter Flight Security • Security of Parked Aircraft • Alarm Systems for Parked Aircraft • Aircraft Security Survey
Chapter 8 Bomb Threat Response
Incidence of Threats and Explosives • Handling the Bomb Threat • Bomb Threat Search Procedures • Deplaning Passengers • Search of Baggage and Freight • Search of Aircraft • Use of Dogs for Search

SECTION III	AIRPORT SECURITY
Chapter 9	Government Regulations and Airport Security
	d • Government Intervention • Financial Limits • nding • Assessing Security
Chapter 10	Perimeter Security and Lighting
	encing • Gates and Other Openings • Lighting • Light and Protection
Chapter 11	Identification for Security147
<ul> <li>Badging</li> </ul>	equirement • Badge System Selection • FAA Standards of Visitors and Contractor Employees • Lost Badges • nt of Identification Program • Vehicle Identification
Chapter 12	Terminal and Ramp Security
Ramp Doo Door Hard Sensors •	Terminal from Air Operations Area • Jetway Access • rs • Locks and Keys • Re-Keying • Master Keys • Other dware • Intrusion Alarm Systems • Alarm System Fire Protection • Fire Sensors • Sprinklers • Special rs • Pre-Planning Essential
Chapter 13	Law Enforcement, Communications and Contingency Planning
<ul> <li>Airport (</li> <li>Communic</li> </ul>	cement Functions at Airports • Jurisdictional Problems Communications • Telephone Communications • Radio ations • Emergency Power • Bomb Threat Contingency Evacuation • Planned Response • Search Procedures
Chapter 14	General Aviation Security
	viation Traffic Volume • Security Problems • Com- aft • In-Transit Ramp Security • Aircraft and Avionics lijacking

SECTION IV AIRLINE SECURITY
Chapter 15 Investigation Management
Prosecution Not the Only Object • Credit-and-Criminal Checks • Federal Restrictions on Records Checks • Credit Checks • Surveillances • Legality of Searches • Locker Searches • Interviews and Interrogations • Recording Interviews • Truth Verification Devices • Prosecution • Restitution
Chapter 16 Ticket Fraud
Ticket Theft Problems • Ticket Thefts Declining • Use of Stolen Tickets • Unreported Ticket Sales • Counterfeit Tickets • Altered Tickets • Miscellaneous Charges Orders (MCOs) • Tickets-by-Mail (TBM) Fraud • Pre-Paid Ticket Authorization (PTA) Fraud • Do-It-Yourself Tickets • Refund Fraud • Prosecution and Legislation
Chapter 17 Ticket Stock Security
Printing Plant Security • Access Control • Internal Procedures • Employees • Ticket Warehouses and Distribution Centers • City Ticket Offices • Control of Inventory Exposure • Airport Ticket Counters • Travel Agencies
Chapter 18 Credit Card Fraud
Stolen and Altered Credit Cards • Methods of Fraud • Card Embossing and Mailing Risks
Chapter 19 Baggage Handling and Security
Baggage Check-in • Tag Controls • Requirement for ID Tags • Baggage Handling • Damaged Bags • Theft Deterrence • Baggage Claim • Baggage Claims Investigation • Disposition of Unclaimed Baggage
Chapter 20 Misappropriation
Flight Kitchens and Commissaries • Food Controls • Utensils and Other Equipment • In-Flight Sales • Liquor Sales • Airline Ticket

Sales • Headset Rentals • Whose Responsibility? • The Few Rather Than the Many

SECTION V AIR FREIGHT SECURITY
Chapter 21 Air Cargo Security Problems
Growth of Cargo Carriage • What Cargo Goes by Air? • Inherent Security Problems • Emergence of Cargo Theft Problems • Government Response • Publication of DOT Standards • Cargo Security Working Groups • Legislation Passed • Primary Prevention
Chapter 22 Physical Security of the Freight Terminal 269
Perimeter Protection • Employee Parking • Dock Area • Terminal Access • Security Review of New Construction • Closed Circuit Television • Guard Force Operations • Conclusion
Chapter 23 Security Procedures for Air Cargo Handling279
Accountability • Deterrents to "Pilferage by Count" • Truck Seals • Collusion • Fraudulent Pickups • Protection of Documentation • Containerization and Security • Packaging • Damaged Cartons • Carrier Transfer Vehicle Supervision • Container Seals • Seal Accountability • Rough Handling and Delay
Chapter 24 High-Value Shipments
Articles of Extraordinary Value (AEV) • Procedures Required by Tariff • Carrier AEV Procedures • Attractive Merchandise • High-Value Security Cage
Chapter 25 The "People Factor" in Cargo Theft
Personnel Screening • Promotion on Seniority • Employee Intake Procedures • Supervision • Supervisor Job Description
Chapter 26 A Management Approach to Cargo Security313
Selling Cargo Security to Management • Selling by the Numbers •