

# **TACTICAL HELICOPTER MISSIONS**

## ABOUT THE AUTHOR

**Kevin Means** learned to fly airplanes while attending high school and then joined the United States Navy in 1977. He spent four years as an Anti-Submarine Warfare Operator and Search and Rescue crewman aboard Kaman SH-2F helicopters and was assigned to helicopter squadron HSL-35 at Naval Air Station North Island.

Kevin remained in San Diego after his honorable discharge in 1981 and joined the San Diego Police Department. He worked as a patrol officer for five years; was assigned to the Border Crime Prevention Unit, whose mission was to prevent violent crime in the isolated canyon areas near the US/Mexican border; and was also a Narcotics and Gangs detective.

Kevin became a Tactical Flight Officer for the newly created San Diego Police Air Support Unit in 1989 and obtained his Commercial helicopter certificate in 1992. He is a Certified Flight Instructor in airplanes and helicopters and has logged more than 9000 hours of flight time. He is the unit's helicopter training officer, and is a night vision goggle check-airman and Tactical Flight Officer trainer.

Kevin has consulted with infrared manufacturers on the designs of their systems, and with other industries on the use of Night Vision Goggles and helicopter training procedures. He chaired the Education and Training Committee of the Airborne Law Enforcement Association and was the association's president from 2002 to 2003.

His wife, Cyndi Jo, is a Deputy District Attorney in San Diego, and they have two daughters, Erin Lynne and Andi Jo. They reside in Lakeside, California.

# TACTICAL HELICOPTER MISSIONS

**How to Fly Safe, Effective Airborne  
Law Enforcement Missions**

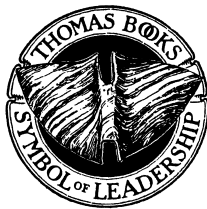
*By*

**KEVIN P. MEANS**

*With a Foreword by*

**Captain Jim Di Giovanna**

*Los Angeles County Sheriff's Department (Ret.)*



**CHARLES C THOMAS • PUBLISHER, LTD.**  
*Springfield • Illinois • U.S.A.*

*Published and Distributed Throughout the World by*

CHARLES C THOMAS • PUBLISHER, LTD.  
2600 South First Street  
Springfield, Illinois 62704

This book is protected by copyright. No part of  
it may be reproduced in any manner without  
written permission from the publisher.  
All rights reserved.

©2007 by CHARLES C THOMAS • PUBLISHER, LTD.

ISBN-13: 978-0-398-07738-9 (paper)  
ISBN-10: 0-398-07738-X (paper)

Library of Congress Catalog Card Number: 2006101702

*With THOMAS BOOKS careful attention is given to all details of manufacturing and design. It is the Publisher's desire to present books that are satisfactory as to their physical qualities and artistic possibilities and appropriate for their particular use. THOMAS BOOKS will be true to those laws of quality that assure a good name and good will.*

*Printed in the United States of America*  
*CR-R-3*

**Library of Congress Cataloging-in-Publication Data**

Means, Kevin P.

Tactical helicopter missions : how to fly safe, effective airborne law enforcement missions / by Kevin P. Means ; with a foreword by Captain Jim Di Giovanna.

p. cm.

Includes index.

ISBN-13: 978-0-398-07738-9 (paperbound)

ISBN-10: 0-398-07738-X (paperbound)

1. Aeronautics in police work. 2. Helicopters. I. Title.

HV8080.A3M43 2007

363.2'32--dc22

2006101702

*This book is dedicated to my lovely wife, Cyndi Jo and to my wonderful daughters, Erin Lynne and Andi Jo, who have had to live with my addiction to airborne law enforcement for many years. It is also dedicated to Mom, Dad, Betty and Daryl who have always been there for me.*



## FOREWORD

Fifteen years ago, I first met Kevin Means through our mutual affiliation with the Airborne Law Enforcement Association. Immediately I was impressed with his professionalism, passion for airborne law enforcement, and hunger to learn of more effective and efficient ways of catching crooks from the air. I knew right away that we shared common interests: Aviation safety and professionalism, a strong desire to advance the mission and capabilities of airborne law enforcement, and taking great pleasure from putting bad guys in jail.

Since Kevin and I met, technology has played a major role in evolving the use and tactics of airborne law enforcement. Prior to 1990, and, of course, prior to the release of several hundred military surplus aircraft, airborne law enforcement outside of major metropolitan areas had not fully matured. In fact, very few agencies throughout the United States even had an aviation unit. Thermal imagery and night vision goggles were in limited use, traffic enforcement was one of the primary missions, and the air unit was always under the budget knife. Unfortunately, the latter fact hasn't changed.

Today, over 400 law enforcement agencies in the U.S. alone employ aviation units, with many more in Canada, Europe, and Australia. The technological evolution has advanced airborne tactics and placed greater emphasis on night vision devices, making thermal imagery a mainstay while expanding the use of night vision goggles in many urban cities. Now, with such technological advances, air unit tactics can focus more on force protection, crime suppression and suspect searches and captures, with vehicle pursuits being a primary air support mission. Multiband digital communications, moving maps, and GPS tracking devices all have greatly assisted in making air support an indispensable crime fighting resource.

In this book, Kevin captures the intricate nuances of the unique and specialized profession of airborne law enforcement. He successfully

summarizes the tactical excellence needed to transform the science and technology of police air support into a masterful art.

Kevin's subject matter expertise comes after many successful years of experience as a tactical flight officer, pilot and flight instructor, along with some rather unsuccessful episodes of misinterpreted thermal images, losing crafty crooks, and enduring a few tough breaks, all of which served as valuable lessons. In writing this book, Kevin has shared each of these experiences, good and bad, and has provided a textbook by which all of us in this profession will benefit and become much better at what we do. For this, we are most grateful.

Captain Jim Di Giovanna  
*Los Angeles County Sheriff's Department, Retired*



## PREFACE

A well-trained aircrew that is proficient with their tactics, technology, and each other will significantly enhance the safety, efficiency, and effectiveness of officers on the ground. When an aircrew is overhead, providing patrol support, suspects are much less likely to continue their criminal activity or escape. The missions that aircrews perform, however, are only part of the equation; how they perform them is what makes the difference between an effective aircrew and one that is less effective. This book is about law enforcement helicopter tactics and strives to explain why certain tactics and procedures are safer and more effective than others.

It would be easy to use words like “right” and “wrong” when describing different tactics, but “safe” and “effective” are words that more accurately describe what we’re trying to accomplish: the safe and successful completion of our missions.

Most law enforcement helicopters are equipped with similar tactical equipment, but the tactics of aviation units often vary, sometimes significantly. After years of studying the tactics of various agencies, it became apparent that in some cases, crewmembers performed missions a certain way for one reason: “Because we’ve always done it that way.” Tactics were handed down from generation to generation and nothing ever changed—even with the acquisition of new technology.

It is unrealistic to assert that only one specific tactic would apply to all airborne law enforcement missions under all conditions. There are too many variables that might affect how a specific mission should be performed. The tactics described in this book, however, have proven to enhance the effectiveness, and in many cases the safety of aircrews and ground units. Some require a greater degree of crew coordination than others and a higher degree of technical proficiency, but the payoff is a safer and more effective aircrew.

It is no secret that suspects study the tactics of law enforcement, including airborne law enforcement. Criminals are aware of thermal imagers and other airborne technology, so it is incumbent upon aircrews to employ tactics that make it difficult or impossible for suspects to defeat that technology.

The duties of pilots and Tactical Flight Officers have become technical in nature and can be very demanding. It is impossible to know what skills each reader has, but make no mistake about it, when an aircrew is proficient with their tactics, technology, and each other, they are much more likely to be safe and more effective.

K.P.M.

## ACKNOWLEDGMENTS

Many airborne law enforcement professionals provided me with valuable insight into their operations, and it would be impossible to list them all. However, I would like to acknowledge and thank certain people who assisted me while researching this book: Officers Jack Schonely and Jim Weigh of the Los Angeles Police Air Support Unit, Sergeant Dave Douglas of the San Diego County Sheriff's ASTREA unit, George Dempsey of the Martin County Sheriff's Office Aviation Section, and Jeff Werblun of the Sacramento County Sheriff's Metro Air Bureau.

Many of the photos in this book were provided by some very talented photographers, including Glenn Grossman, Tony Zeljeznjak, and Dan Megna. Thank you very much for all of your help.

It is most important to acknowledge and thank the members of the San Diego Police Air Support Unit for their never ending patience and support. It is especially important to acknowledge the assistance of Officer Todd Jager who, for more than a decade, spent countless hours in helicopters with me evaluating, testing, and practicing the tactics and techniques described in this book.



## CONTENTS

	<i>Page</i>
<i>Foreword—Jim Di Giovanna</i> .....	vii
<i>Preface</i> .....	ix

### *Chapter*

1. CREW QUALIFICATIONS AND TACTICAL EQUIPMENT .....	3
Crew Qualifications .....	3
Tactical Flight Officers .....	3
Pilots .....	4
Crew Seating Arrangements .....	4
The Tactical Environment .....	5
Tactical Equipment .....	5
Forward Looking Infrared (FLIR) .....	6
Searchlights .....	7
Global Positioning Systems (GPS) Maps .....	9
Binoculars .....	9
Public Address Systems .....	10
Night Vision Goggles .....	14
2. RESPONDING TO CALLS .....	17
Patrol Philosophies .....	17
TFO'S—Monitoring the Radios .....	18
New Tactical Flight Officers .....	19
Pilots—Monitoring the Radios .....	20
Patrolling .....	20
Tactically Responding to Calls .....	21
Responding to Calls Quickly .....	24

Daytime Orbit Profiles .....	24
Watching Perimeters in the Daytime .....	28
Responding to Crimes in Progress .....	28
Crimes that Have Just Occurred .....	32
Reading License Plates .....	34
Responding to Urgent Calls .....	35
 3. COVERING OFFICERS ON THE STREET .....	 39
Alternative Orbit Profiles .....	40
Orbiting Tall Structures .....	42
Daytime, High-Risk Traffic Stops .....	45
Nighttime, High-Risk Traffic Stops .....	46
 4. FUNDAMENTALS OF THERMAL IMAGING .....	 49
Acquiring Objects with FLIR .....	51
Human Infrared Characteristics .....	51
 5. INFRARED SEARCHES .....	 55
FLIR Searches in Residential Areas .....	55
Aircraft Positioning During Residential Area FLIR Searches .....	56
Search Patterns in Residential Areas .....	62
Residential Area Hiding Locations .....	64
Directing Officers to Heat Sources .....	69
Canyon Searches .....	71
Aircraft Positioning During Canyon Searches .....	73
Canyon Search Tactics .....	74
Searching Dense Brush .....	75
Daytime FLIR Missions .....	76
Searching Commercial Rooftops .....	77
 6. INDOOR MARIJUANA CULTIVATION .....	 83
Legal Issues .....	84
Environmental Factors .....	84
The Briefing .....	86
Residential Area FLIR Scans .....	87

Aircraft Positioning During FLIR Scans .....	88
Conducting the FLIR Scan .....	89
Heat Anomalies .....	90
 7. VEHICLE PURSUITS .....	 93
Aircraft Positioning During Pursuits .....	93
Video Recording Pursuits in the Daytime .....	95
Aircraft Positioning During Freeway Pursuits .....	97
Aircraft Positioning During Residential Area Pursuits .....	99
Maneuvering During Residential Area Pursuits .....	100
Pursuing Motorcycles .....	102
Overrunning Vehicles .....	103
Nighttime Vehicle Pursuits .....	104
Tracking Vehicles .....	105
 8. FOOT PURSUITS .....	 109
Daytime Foot Pursuits .....	109
Nighttime Foot Pursuits .....	110
Conclusion .....	114
 <i>Index</i> .....	 117





# **TACTICAL HELICOPTER MISSIONS**



## **Chapter 1**

# **CREW QUALIFICATIONS AND TACTICAL EQUIPMENT**

### **CREW QUALIFICATIONS**

#### **Tactical Flight Officers**

**H**elicopter cockpits have traditionally been designed with only the pilot in mind. In the early days of airborne law enforcement, the crewmember who sat next to the pilot was essentially a passenger with a badge. They were often referred to as “spotters” or “observers” or occasionally by less flattering titles such as “self-loading baggage” or “mindless light shiners.” Their duties were generally limited to looking outside and telling ground units what they saw.

For the most part, those titles have been replaced with “Tactical Flight Officer” (TFO), a title which more accurately reflects the duties performed. Those duties are substantially more difficult than they were years ago. While it is still necessary for them to look outside and relay what they see, TFOs are also tasked with operating some very sophisticated equipment. They must work closely with pilots, monitor and operate multiple radios, operate and interpret thermal imagers, and coordinate the activities of ground units. They must be able to perform those duties quickly and effectively while applying good officer safety tactics during the day and night and oftentimes under intense pressure.

Some Law enforcement agencies rotate their TFOs in and out of the aviation unit with little understanding of how difficult their job can be, or how long it takes for them to become proficient. For the most part,

that practice is a holdover from the early days of airborne law enforcement, when crewmembers simply looked outside and *observed*. Essentially, if they didn't get airsick, anyone could do that job. Today, however, it takes a dedicated individual a considerable amount of time, effort and skill to become a good Tactical Flight Officer.

When an agency creates an air support unit, they invest a significant amount of money in aircraft, training, and technology, and the TFO is the link between those expensive resources and the officers on the ground. If the TFO is not technically proficient, or cannot communicate effectively, or apply good officer safety tactics, the potential benefits of the aircrew will be lost.

### **Pilots**

Pilots who fly airborne law enforcement missions can be civilians or sworn law enforcement personnel. Some feel that law enforcement officers have an advantage when flying certain missions, because their law enforcement experience gives them additional insight when assisting ground units.

No matter who flies the aircraft, the most important prerequisites are that they possess the necessary skills and qualifications and fly professionally. Professionalism equates to safety. Just as the TFO's duties have become more complex, so have those of the pilot. The integration of new technology affects not only how TFOs do their jobs, but how pilots fly missions.

### **Crew Seating Arrangements**

Unlike police cars, crew seating arrangements in law enforcement helicopters differ significantly. The most common seating arrangement is right-seat pilot and left-seat TFO, but some airframe manufacturers build helicopters that are flown from the left seat.

There is no overwhelming benefit of either design, because the mathematics and tactics of flying missions are the same. However, the direction the aircraft turns when orbiting a call is immensely important to the overall effectiveness of the aircrew. The aircraft's seating arrangement is the primary factor to consider when determining which direction to orbit.

To be as effective as possible, pilots flying from the right seat must turn to the left when orbiting calls, and pilots flying from the left seat must turn to the right. Orbiting calls in this manner is safer and more effective because both crewmembers will have a better view of the aircraft's instruments and direction of flight, as well as the tactical environment and tactical displays.

These concepts are explained in-depth throughout this book. Can an aircrew ignore this recommendation and reverse the direction of their orbits? Yes, and they can even operate safely when doing so, but they will not be as effective as they could be. Remember, the goal is to be safe and effective.

### **The Tactical Environment**

The term "tactical environment" is used throughout this book and refers to the location of a call or incident. In residential areas, for example, the tactical environment is the area around the house where the call originated. It is the area where suspects will likely be, or where activity related to an incident is likely to occur.

The size of a tactical environment will vary, depending on the type of call. If it is a traffic stop, for example, the tactical environment will be relatively small. If it is a foot pursuit through a shopping mall, however, it is going to be much larger.

### **TACTICAL EQUIPMENT**

Airborne law enforcement has experienced a technological revolution. Missions that used to be flown with only a searchlight and a police radio are now flown with thermal imagers, night vision goggles, and a variety of advanced avionics and sensors. Certain pieces of equipment have become standard in the industry and almost mandatory for effective airborne law enforcement operations.

Some of the most common technology found in law enforcement helicopters is discussed in this book. The use of that technology, in conjunction with good law enforcement skills, tactics, and judgment, are what enables an aircrew to provide effective air support to officers.