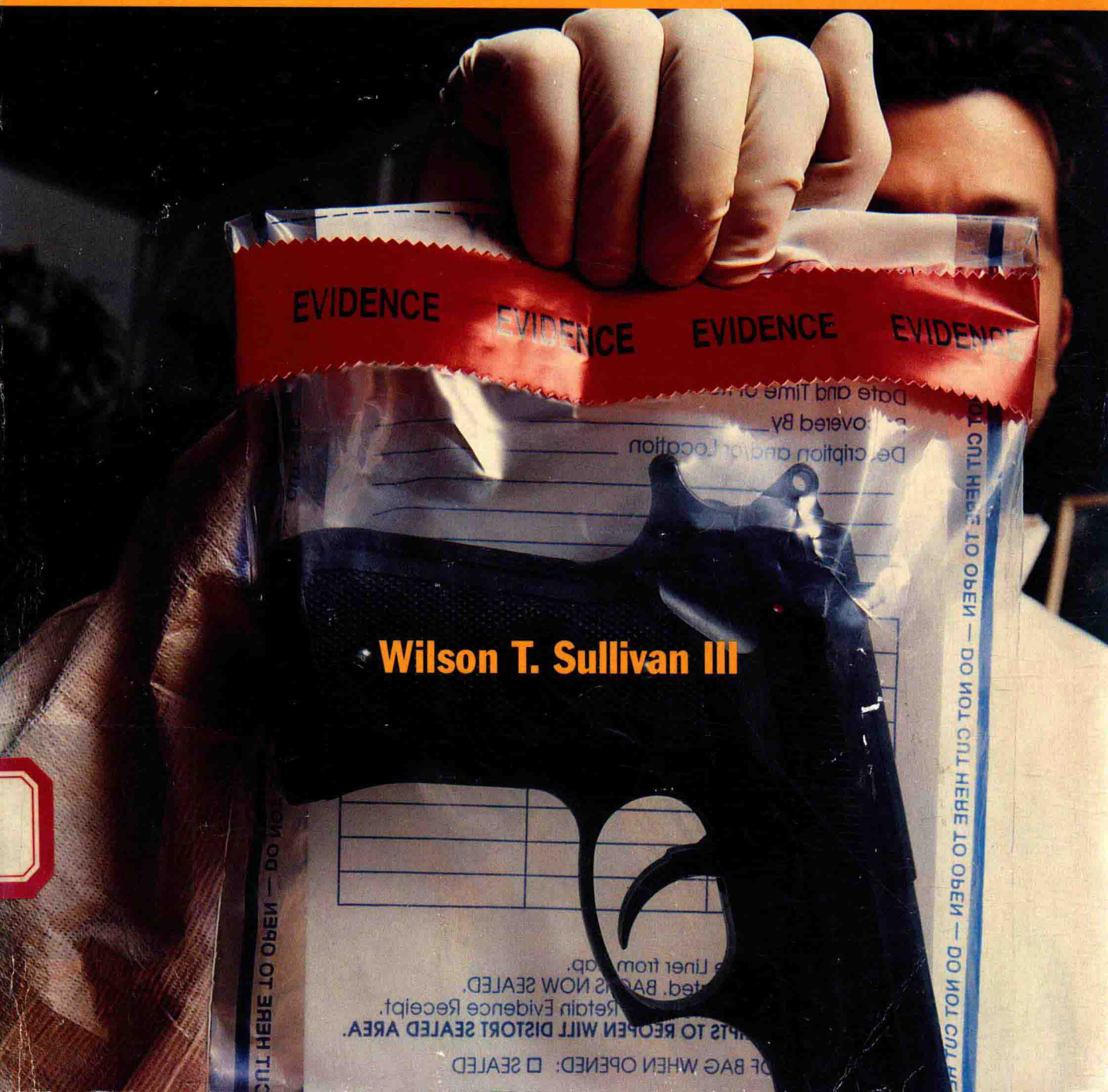


CRIME SCENE ANALYSIS

Practical Procedures and Techniques



Wilson T. Sullivan III

Crime Scene Analysis

Practical Procedures and Techniques

WILSON T. SULLIVAN III



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Preface

There are many books available today covering forensic science and crime scene investigation. The availability of these books has expanded along with the interest in forensics programs on television, such as “CSI.” There are some very good books that cover the introductory aspects of forensic science. So why would anyone want to read this book? What makes this book so different from all the others on the market today?

What really makes this text different is that it is a textbook and a reference book containing actual procedures and techniques. It addresses the *how to, when to, and in what order* to use the various procedures discussed. In other words, this book can be used in the field as a guide covering procedures in a step-by-step format. This is an especially valuable tool when you are faced with a procedure that you use only occasionally and might not remember exactly how to complete, or you are new and have never actually used it in the field. Other books tell you what can be done, but not how or when to do it.

This book was written by someone who has worked in the forensics field in one way or another since 1966. Every technique discussed in this text is one that is current and something you must know. It is written from the experience of not just the author, but also many associates. The author and these associates teach forensics at the college level, and are all still active in their fields as investigators, analysts, and consultants.

The structure of the text is such that it can be used as a teaching tool not only for college classes, but to train new crime scene investigators as well. Classes can be structured to follow the book for the various classes of evidence, and laboratory and field exercises can be conducted simultaneously so that the student actually performs the tasks as they read about them. The text can be used on the laboratory table as a reference for the new practitioner.

In addition, tips are provided throughout the book, not only to make the task as understandable and as simple as possible, but also to allow the reader to find these important bits of information rapidly. It is written in simple lay terms as much as possible to allow it to be of value both to detectives and other investigators who do not have the benefit of a formal forensic science background and to the beginning student, who is not yet familiar with the procedures. Too often, procedures are not used because the investigators are not aware that they even exist, or they have no idea

of how or when to use them. They do not know or understand the critical interaction of these procedures. For example, luminol, a presumptive blood test, is usually used only after all sampling is done. Although luminol might not damage blood samples destined for DNA profiling, it is held back until samples of blood are recovered because there are other detrimental reactions of this and other chemicals with biological fluids.

Some of the many forensic organizations that the reader might be interested in joining are included and are a valuable tool used to seek further knowledge. These are of particular interest to the new investigator and to students because many of these organizations have student sections that are very well organized. Some, such as the American Academy of Forensic Sciences (AAFS) have very active student divisions and have programs at their annual training conferences. The training conferences are great for learning new techniques, but also for meeting those experts who might have an influence at some point in your career.

Some of the smaller agencies and colleges may not be aware of where to obtain many of the specialty supplies and instruments. To address that problem, many of these suppliers and their addresses, telephone and fax numbers, and e-mail addresses are included for your convenience. These supply houses are a wonderful source for detailed instructions concerning their kits, along with instructions and Manufacturers Safety Data Sheets (MSDS). Some of these kits are discussed in this text because they are often a viable answer for those agencies that either do not have staff trained to make their reagents or choose not to for whatever reason. Although these kits may add some cost to your operations, they may actually be cheaper because there is no need for a lot of laboratory glassware, chemicals, and apparatus. Another benefit is the lack of "left overs" or wastes to dispose of.

We also discuss methods that can be used if you cannot get the kit or supplies, for various reasons. We suggest sources that are not usually considered and substitutes for various pieces of equipment that you might not possess. These, of course, are meant to be used in an urgent situation.

This text contains safety points in each chapter to address those concerns that might result in not only injury, but also loss of evidence as a result of improper technique.

Mentioned earlier was the availability of MSDS from the supply houses. We suggest here that these documents not only be available as required by law in the laboratories, but that they also are available in the field. Should an employee need to go to the hospital because of an exposure, the emergency room staff will be able to address medical emergencies more rapidly if the MSDS is accompanying the injured person.

The intent of this book is not to make you an expert. Only the court can do that. The intended purpose of this book is to teach you as much as is feasible about the basics of crime scene procedures so you have the foundation to proceed at a competent level. From that point, you can strive to really master your profession.

Acknowledgments

This book could not have been written without the help of numerous people, and I attempt to acknowledge them here with the sincere hope that I miss no one. This must begin at a logical point—the beginning. Detective Sergeant Francis (Buster) Williams (ret.), Honolulu Police Department, took me under his wing when I was promoted to Detective Evidence Specialist. He taught me the basics and more. He encouraged me to experiment and try many new techniques, and he helped me at each step. Mr. Gilbert Chang (ret.), Crime Laboratory Director, Honolulu Police Department, who taught me crime lab procedures that I did not have to know, but wanted to know. Firearm/Tool Mark Examiner Sergeant Charles Davis (ret.), Honolulu Police Department and Forensic Ballistics Technology, who helped with photography and the firearms portion of this book. Dr. Anthony (Tony) Russo, Professor, University of Hawaii (ret.), who reviewed portions of the draft and gave me advice and encouragement. Dr. Robert (Bob) Mann, Deputy Director of Scientific Operations for the Central Identification Laboratory, Hawaii, who was always available to talk to and discuss anthropology and life. Mr. Max Leaver, Marketing Director for Forensics at Armor Forensics, who kindly allowed me to use their Sequential Processing Chart Reprint for this book. I promise never to mention the “fax” again.

A special thanks to Dr. Kanthi DeAlwis, Chief Medical Examiner of the City & County of Honolulu, who supported this effort because she believes we must educate the next generation of forensic scientists so they will not have to repeat what we have had to endure. Dr. M. Lee Goff, Dean of Math and Natural Sciences, Chair of the Forensic Science Department, Chaminade University of Honolulu, for his encouragement, direction, and guidance in allowing me to constantly pick his brain on entomology. He kept me sane—then again, maybe not. He allowed me time to work on this project and was always available to provide advice and work with me. Dr. Henry Lee, who needs no introduction. I learned something each time we met. He and Dr. Goff also reinforced my belief that we must keep a sense of humor and not take ourselves too seriously while maintaining a strict sense of professionalism and service.

My son-in-law, Sean, helped me with photography cases and my daughter, Masako Omine, helped with the drawings. Stephanie Ah Sam, Bryan Johnson, and Sharyse Hagino, who worked with me on some fingerprint

cases and helped with photography, forms, and reading my manuscript for about the tenth time to date. We went through many gallons of coffee together and spent countless hours cramped in a small office or in the laboratory. And certainly this would not have happened without my wife, Kimiko, and the rest of my family, Chris, Maria, Elijah, Zachary, and Puna, who put up with me during the writing of this book.

Wilson Sullivan III
Honolulu, Hawaii Date

About the Author

Wilson T. Sullivan is a graduate of the University of Hawaii system with degrees in Police Science, Psychology, and Public Administration. He began his career in law enforcement as a military policeman in 1964. He joined the Honolulu Police Department in 1966, where he started in the Identification Section, fingerprinting persons and searching the fingerprint files. He was later promoted to detective, where he was a crime scene investigator and also did latent fingerprint examinations. After promotion to lieutenant, he headed the fingerprint unit, photo laboratory, and crime scene unit. On being promoted to captain, he headed the Scientific Investigation Section, which had been proposed as a new unit. After promotion to major, he headed the Research and Development Division of the department. On retiring, he worked for the Department of the Medical Examiner in Honolulu as a death investigator as well as starting and running a private company, Forensic Services. Today, Mr. Sullivan is an assistant professor of forensic science at Chaminade University of Honolulu, where he teaches forensic photography, crime scene investigation, and physical forensic science, as well as teamwork in seminars and internships. He continues to operate Forensic Services, where he uses advanced students when possible. He also teaches seminars in crime scene investigation and other related matters.

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