

**THE ART AND SCIENCE
OF THE
POLYGRAPH TECHNIQUE**

The Art and Science of the Polygraph Technique

By

JAMES ALLAN MATTÉ, B.S.

*President
Matté Polygraph Service, Inc.
Buffalo, New York*

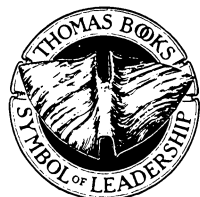
Member, American Polygraph Association

*Charter Member and Western N.Y. Representative
Empire State Polygraph Society*

Member, N.Y. State Polygraphists, Inc.

*Former Special Agent, USAF Office
of Special Investigations (OSI)*

Retired U.S. Army CID Agent



CHARLES C THOMAS • PUBLISHER
Springfield • Illinois • U.S.A.

Published and Distributed Throughout the World by
CHARLES C THOMAS • PUBLISHER
Bannerstone House
301-327 East Lawrence Avenue, Springfield, Illinois, U.S.A.

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

© 1980, by **CHARLES C THOMAS • PUBLISHER**
ISBN 0-398-04044-3 (cloth)
ISBN 0-398-06271-4 (paper)
Library of Congress Catalog Card Number: 79-27069

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.

Library of Congress Cataloging in Publication Data

Matté, James Allan.

The art and science of the polygraph technique.

Bibliography: p.

Includes index.

1. Lie detectors and detecting. I. Title.

HV8078.M34 363.2'54 79-27069

ISBN 0-398-04044-3.— ISBN 0-398-06271-4 (pbk.)

Printed in the United States of America

O-1

to my son
Gary

FOREWORD

I have known the author, James Allan Matté, for a number of years. In fact, while I was in the practice of law, I referred clients to him on a number of occasions for the purpose of polygraph examination. I have always been impressed by Mr. Matté's expertise and total professionalism.

It was apparent to me that he was dedicated to his work and fully convinced of the reliability of the results of any tests he administered. Accordingly, when Mr. Matté asked me to read this book and then decide if I would write a brief foreword to it, I readily accepted.

His well-written book is one of the best arguments for a reevaluation of the admissibility of the results of a "polygraph test" in a court of law. Mr. Matté has reviewed the history of this method of testing, and he has also dealt with modern day practices. The courts have been traditionally reluctant, absent a stipulation by both sides in a case, to admit testimony concerning a polygraph examination. This reluctance may well have a valid basis. There are many unqualified and even untrained persons who appear to be utilizing a "lie detector machine" for all types of questioning. It will certainly enhance the reliability of this device if, as Mr. Matté suggests, there is a process of certification of people who wish to call themselves polygraphists.

It is true that the courts have traditionally allowed opinion evidence in many cases. There is always an accompanying cautionary instruction that such evidence is only an opinion and a jury is free to accept or reject it. Where a key question for determination is the credibility or believability of a witness, the courts again traditionally seem to fear that if the results of a polygraph examination are admitted, jurors will blindly follow the determination made by "some mechanical device." In addition to that basic concern, the courts seem reluctant to believe that a polygraph machine is reliable and cannot be "fooled" by a good liar. This attitude persists in spite of the fact that law enforcement agencies regularly rely on the results of an administered polygraph test in screening out suspects and/or determining the truthfulness of a witness.

This book should be carefully read and its message considered. Much of what Mr. Matté has to say could result in a change in the present attitude of the courts.

The Honorable VINCENT E. DOYLE
Supreme Court Justice
State of New York
Buffalo, New York

FOREWORD

This book represents a comprehensive work that compiles and explains the scores of factors that are associated with the polygraph technique. Matté's objective is to show you the whys, hows, and wherefores of testing procedures, approved methods, legal ramifications, and ethical conduct that form the many facets of the polygraph technique.

One thing to remember: there is no substitute for knowledge. Polygraph technique is a continuous learning process. To emerge as an expert polygraphist requires post-polygraph school studies in related disciplines and extensive experience in the field.

This book introduces the student and the advanced polygraphist, as well as the interested lay person who may be in need of information for legal or research purposes, to current, comprehensive polygraph procedures and techniques. This book also includes some new techniques and developments by the author that supplement the Reid control and Backster tri-zone methods.

This book is not intended to be used as a "do-it-yourself" manual. The author strongly subscribes to the belief that there is no substitute for formal polygraph training, especially at a school accredited under the guidelines set forth by the American Polygraph Association. This volume, a most complete textbook, will complement that formal training and will serve as an explanatory reference text for the practicing polygraphist. This book is not intended as an independent study text for the practice of polygraphy. As its title indicates, it is an in-depth presentation of *The Art and Science of the Polygraph Technique*.

RENE MORENO

Chief Polygraph Examiner

Legal Aid Society of New York City

Chairman of the Board of Directors and President

Emeritus of Empire State Polygraph Society

Chairman of the Board of Directors and President

Emeritus of the National Law Enforcement

Associates, Inc.

ACKNOWLEDGMENTS

The author extends his sincere appreciation for the contributions made by the following persons:

Richard O. Arther, director of the National Training Center of Polygraph Science, New York City, New York, and to the following polygraphists who assisted Arther, in the development of the model polygraph agreement and stipulation (appended to this book): Bert Allmers, Bergen County, New Jersey Prosecutor's Office; Robert Bertalot, Portland, Oregon Police; David Cook, Contra Costa County, California, deceased; John Danberry, Indiana State Police; Donald Dunlap, Kansas City, Missouri Police; William Goin, Washington County, Oregon District Attorney's Office; Edward Goss, Michigan State Police (retired); William Hoff, Livonia, Michigan Police; George Locy, Riverside Sheriff's Department, California; Louis Palau, Bronx County, New York District Attorney's Office (retired); Lloyd Riegel, Oregon State Police; Kenneth Vanous, Cedar Rapids, Iowa Police; and Richard Wilcox, Ohio State Highway Patrol.

Norman Ansley, professor at the University of Baltimore and editor of *Polygraph, Journal of the American Polygraph Association*, whose vast knowledge of polygraph is perhaps unequaled, for his direction in the acquisition of materials for this book, and assistance with its bibliography.

David C. Raskin, Ph.D., Gordon H. Barland, Ph.D., and John A. Podlesny, Ph.D., whose combined effort resulted in a most comprehensive study on the validity and reliability of detection of deception reported by the Department of Psychology, University of Utah on 30 August 1976, a summary of which is reflected in this book.

Gordon H. Barland, Ph.D., Barland and Associates, Salt Lake City, Utah, for his invaluable assistance in the acquisition of information regarding physiology and his critical review of Chapters 3 and 5 of this book.

Robert Edelbert, Ph.D., professor, Rutgers Medical School, Piscataway, New Jersey, for his explanation of the physiology involved in the galvanic skin response reflected in Chapters 3 and 5 of this book.

Joseph A. Zizzi, M.D., president of the medical-dental staff and cardiologist at the Meyer Memorial Hospital, and associate clinical professor of medicine, State University of New York at Buffalo, for his assistance in explaining the physiology related in Chapter 6 of this book.

Clarence H.A. Romig, criminologist, Indiana State University, and associate editor, *Polygraph, Journal of the American Polygraph Association*, for his invaluable contribution of charts and information concerning the status of legislation affecting the polygraph.

Frank Horvath, Ph.D., professor, Michigan State University, and associate editor, *Polygraph, Journal of the American Polygraph Association*, for his critical review of the control question validation procedure (CQV test) reflected in Chapter 10 of this book.

Gloria L. Roblin, Ph.D., clinical professor, department of psychiatry, State University of New York at Buffalo, for her encouragement and faith in the author's research, which resulted in the creation of the polygraph quadri-zone comparison technique reflected in Chapter 4 and 5 and her critical review of Chapter 6 of this book.

William R. Fleming, B.S., pharmacist, North Tonawanda, New York, for his critical review of Chapter 15 of this book.

Charles J. Scibetta, attorney at law, Buffalo, New York, for his enlightening suggestions and critical review of Chapter 17 of this book.

Angela Gerst, J.D., for her encouragement and assistance in forming the introduction to this book (Chp. 1).

Reuben Garner, Ph.D., Empire State College, State University of New York at Buffalo, for his guidance and kind support throughout the writing of this book.

John A. Nash, M.A., assistant professor, English department, Erie Community College, for his enthusiastic support and critical review of certain portions of this book.

Diane Nash, M.S., Orchard Park, New York, for posing as the polygraph subject in Chapter 8 of this book.

Bruce E. Brinker, director, The New York School of Lie Detection, for his critical review of Chapter 2 of this book.

Karen P. Ross, J.D., for her legal research and assistance in the writing of Chapter 18 of this book.

Martha E. Manning, M.L.S., Associate Librarian, Health Sciences Library, State University of New York at Buffalo, for her assistance in the preparation and production of the index to this book.

Sylvia M. Keohane, Polygraphist and member of the staff at Matté Polygraph Service, Inc., for her faith and untiring assistance in the multiple proofreadings required in the completion of this book.

Cleve Backster, Backster School of Lie Detection, San Diego, California, for providing me with the scientific foundation that propelled me into polygraph research and development. His genius is an inspiration to all of us who seek improvement in the polygraph technique.

J.A.M.

CONTENTS

	<i>Page</i>
<i>Foreword</i> — Vincent E. Doyle	vii
<i>Foreword</i> — Rene Moreno	ix
<i>Acknowledgments</i>	xi
<i>Chapter</i>	
1 Introduction	3
2 Brief history of the polygraph	26
3 The modern polygraph instrument and the autonomic nervous system	37
4 Evolution of polygraph technique	50
5 Polygraph chart interpretation and numerical quantification system	79
6 A classification system for polygraph subjects	112
7 Identification of problem areas through basic principles of psychology	117
8 The required setting for a polygraph test: A controlled environment	130
9 The stimulation test	135
10 A control question validation procedure	141
11 The quinque-zone comparison technique	161
12 The suspicion-knowledge-guilt test	169
13 The known-solution and the probing peak-of-tension tests	176
14 The silent answer test	184
15 Drugs and the polygraph	189
16 Hypnosis and the polygraph	197
17 Selection of an expert polygraphist and use of the results by the attorney/at/law	202
18 Application of privileged communication between attorney-client-polygraphist	214
19 Application of the polygraph technique in private business and industry	225
<i>Appendices</i>	
A Model polygraph report for specific type test	240
B Model polygraph report for preemployment test	242
C Model polygraph report for periodic test	244
D Model permission form for attorney-client	246
E Model agreement and stipulation form	247
F Model permission form for specific test	251
G Model permission form for preemployment and periodic polygraph tests	253
H Model polygraph licensing act	254
<i>Bibliography</i>	262
<i>Index</i>	272

**THE ART AND SCIENCE
OF THE
POLYGRAPH TECHNIQUE**

Chapter 1

INTRODUCTION

During a lecture on searches and seizures at the U.S. Air Force Office of Special Investigations School many years ago, our law professor stated that man's dignity should not be violated in order to obtain evidence against him. He further stated that he would rather see nine guilty men go free than see one innocent man convicted. Those words were in such consonance with my own feelings that they became emblazoned in my memory throughout my career as a federal agent.

As a certified polygraphist in private practice, I still maintain those same convictions, as do many of my colleagues, but I am alarmed at the ever-increasing adverse publicity afforded our profession by the misinformed, the misguided, the victims of incompetent practitioners, and those who have reason to fear the truth.

The incompetent and the unethical polygraphist is largely responsible for the abuses and unprofessional conduct that are plaguing the polygraph profession today. Initially, the polygraph profession was at fault for its failure to provide legislators with polygraph validation data that would have enabled them to enact laws restraining this conduct. Since 1965 when the Committee on Government Operations, known as the Moss Committee,¹ submitted a report to the 89th Congress (based on a study conducted by the Foreign Operations and Government Information subcommittee on the *Use of Polygraphs as "Lie Detectors" by the Federal Government*), the polygraph community has been working feverishly with scientists in all related disciplines to validate the polygraph technique, correct the report's justified criticisms, and disprove the unfounded ones. Since the Committee's report reflects most of the criticisms voiced by both the public and private sectors, a summary of its contents is in order.

The Moss Committee concluded that —
there is no "lie detector" neither machine nor human. People have been

deceived by a myth that a metal box in the hands of an investigator can detect truth or falsehood. The polygraph machine is not a “lie detector” nor does the operator who interprets the graphs detect “lies”. The machine records physical responses which may or may not be connected with an emotional reaction, and that reaction may or may not be related to guilt or innocence. Many, many physical and psychological factors make it possible for an individual to ‘beat’ the polygraph without detection by the machine or its operator.

The report cites the following conditions which would invalidate a polygraph examination:

Extreme nervousness . . .

Physiological abnormalities . . . excessively high or low blood pressure, heart diseases . . . respiratory disorders (even the common cold), toothaches, severe headaches, or practically any painful ailment.

Mental abnormalities . . . pronounced neuroses, psychoses . . . abnormally low intelligence . . . state of self-hypnosis or temporary amnesia . . . pathological liars . . .

Unresponsiveness. A lack of emotional response can seriously hamper accurate testing. Extreme fatigue or mental exhaustion . . . A person under the influence of alcohol . . . drugs . . .

Bodily movement. Physical movement or muscular activity can lead to misleading blood pressure readings. . .

The report continued that “Federal investigators have given thousands upon thousands of polygraph tests, yet there has been no attempt to determine the validity of the procedure and no attempt to find out whether the polygraph operator really can detect falsehoods. No statistical proof has been compiled despite thousands of cases; no scientific proof has been produced despite thousands of opportunities.”

The report did admit that “*There is some evidence that the polygraph technique works in the laboratory. Dr. Joseph E. Kubis and Dr. Martin T. Orne* testified they have achieved as much as 80 to 90 percent accuracy in their laboratory studies.* But the scientists admitted this does not mean the machine works in actual practice.” (Italics added.)

The report further indicates that “The polygraph technique forces an individual to incriminate himself and confess to past actions which are not pertinent to the current investigation. He must dredge up his past so he can approach the polygraph machine with an untroubled soul.”

Finally, the Committee recommended that the federal government:

*See Bibliography.

Initiate comprehensive research to determine the validity and reliability of polygraph examinations.

Prohibit the use of polygraphs in all but the most serious national security and criminal cases.

Improve the training and qualifications of Federal polygraph operators.

Restrict the use of two-way mirrors and recording devices during polygraph examinations.

Guarantee that polygraph examinations be, in fact, voluntary.

Insure that refusal to take a polygraph examination will not constitute prejudice or be made a part of an individual's records except in the most serious national security cases.

In the words of Robert A. Brisentine, Jr. (American Polygraph Association Vice-President for Government Polygraphists), "the Moss Committee more or less decreed that the polygraph examiner was his own worst enemy, as he had failed to keep statistics on his work and there had not been very much documented research to depict the reliability and validity of the Polygraph technique."²

Consequently, the Department of Defense established an ad hoc committee to do research on the polygraph.³ The two general areas of research consisted of a study to determine the reliability and validity of the polygraph examination, and a study of the instrumentation to determine if better instrumentation could be adopted. From this research, two of seven validation studies merit special mention here; the other five are not deemed relevant to this book.

The first validation study consisted of an independent comparison of polygraph results with the investigative file, by comparing polygraph results in criminal cases against judgments of guilt or innocence made by a panel of lawyers having access to the complete investigative file from which all reference to the polygraph examination were removed. Cases were selected at random from the period 1963 to 1966, and of an initial 323 case files, a final number of 157 cases that were complete enough to permit a lawyer to judge guilt or innocence were selected. Seventy-two of the aforementioned cases had been interpreted by the polygraphists as deceptive and eighty-five as truthful. The attorneys had been instructed to disregard all legal technicalities and to judge each case solely on the evidence in the file. The results revealed that the polygraphists and the panel of lawyers agreed on 92 percent of all cases. A breakdown of the statistics reflects deception indicated 90 percent agreement; no deception indicated 94 percent agreement.