

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



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# The Art and Science of the Polygraph Technique

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*By*

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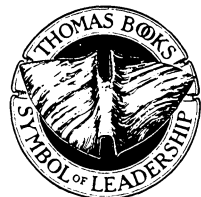
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to my son  
Gary



## 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**

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J.A.M.

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## 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,<sup>1</sup> 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."<sup>2</sup>

Consequently, the Department of Defense established an ad hoc committee to do research on the polygraph.<sup>3</sup> 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.

The second study consists of statistics collected on U.S. Army CID examinations during the calendar year 1972. The quantity of polygraph examinations in 1972 were more than three times the number conducted during 1966. In all the examinations conducted by the U.S. Army CID worldwide, there were no examinations in which the polygraphist reached a finding of truthful and the subject was later determined to be guilty of the crime. Furthermore, there was no instance in which a subject was found innocent by a court after the polygraphist reached a finding of deception.

In summary, this research revealed that the polygraph instruments in use by the Department of Defense are basically reliable when properly calibrated, and that the polygraph is reliable and is a valid tool for determining truth or deception when used by properly trained polygraphists. This research also revealed that the Army's standardization of polygraph procedures and quantification in chart analysis permits one polygraphist to read another polygraphist's charts, resulting in a quality control that has reduced the Army's yearly inconclusive rate from 5 percent to 1.8 percent.

The Department of Defense research report did not specifically address the aforementioned instances raised by the Moss Committee regarding physical and mental states that allegedly invalidate a polygraph examination. However, during the writing of this book, research was published on the *Validity and Reliability of Detection of Deception*.<sup>3</sup> Among other things, this research project investigated the common belief that psychopaths could "beat" the "lie detector." Twenty-four convicted felons clinically diagnosed as psychopathic (sociopathic) were administered polygraph examinations using the Backster zone of comparison technique and numerical quantification chart analysis system. Polygraph decisions resulted in 96 percent accuracy. The single error was a false positive; not a single guilty psychopath was able to produce a truthful polygraph outcome. In fact, there were indications that psychopaths were somewhat easier to detect than nonpsychopaths. This research further investigated the relationship between the variety of personality, biographical, and circumstantial factors and its effect on polygraph results. Comparisons were made for sex, education, number of previous arrests, religiousness, previous polygraph examinations, age, and the Minnesota Multiphasic Personality Inventory (MMPI) scores for the lie scale, K scale, psychopathic deviancy, hypochondriasis, and depression scales. It concluded that none of those variables affected polygraph results; thus in the absence of very low intelligence or an incapacitating psychological or physical illness, polygraph examinations are effective with a wide variety of persons with respect to the broad range of crimes typically investigated.

This research also dispelled the notion that polygraph examinations confidentially administered for defense attorneys exercising privileged