Federal Psychophysiological

Detection of Deception

Examiner Handbook

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Chapter I

Introduction

A. Concept of Federal Psychophysiological Detection of Deception.

1. Psychophysiological detection of deception (PDD) is accepted as a valuable forensic application within the federal government. As with any discipline, established, standardized methodologies must be implemented to assure proper application. The procedures in this handbook detail PDD standards as taught by the Department of Defense Polygraph Institute.

2. To ensure standardization consistent with the unique requirements of individual agencies, the procedures in this handbook should be followed as closely as operational requirements allow. These standards will help to ensure that the PDD discipline is utilized in the most professional manner possible while maintaining an effective investigative aid.

B. Scope.

Nothing in this handbook or the referenced guidelines should be construed to limit the authority of individual agency heads to manage their PDD programs in the manner best suited to their individual agencies. Failure to abide by any or all parts of this handbook shall not give rise to any claim cognizable in a court of law. This handbook is intended only to improve the internal management of federal PDD programs. It is not intended and does not create any right to administrative or judicial review, or any other right, or benefit, or trust, responsibility, substantive or procedurals enforceable by a party against the Unites States, its agencies or instrumentalities, its officers or employees or any other person.

C. Policies and Procedures for the Conduct of Examinations.

1. Agency heads should establish procedures for the supervision of PDD programs to insure the highest ethical, professional, and technical standards. General principles for PDD examinations are contained in the Federal Guidelines for Psychophysiological Detection of Deception.

2. Requests to modify the handbook should be made through the Director, DoDPI. Requests received by the director will be forwarded for review at a meeting of the federal PDD program managers. If a consensus opinion accepting the modification is achieved, the modification will be added to the handbook.

D. Definitions.

1. Forensic Psychophysiological Detection of Deception (PDD). The science that deals with the relationship and applications of PDD tests within the legal system. It is the academic discipline that provides the student, the practitioner, and the researcher with the theoretical and applied psychological, physiological, and psychophysiological fundamentals for a thorough understanding of PDD tests, and the skills and qualifications for conducting PDD examinations. The modifier “forensic” delineates and delimits this discipline from the broader discipline of psychophysiology.

2. Personnel Screening PDD Examination. A PDD examination conducted to aid in determining an individual’s eligibility for initial or continued access to designated programs, or an examination conducted to aid in determining an individual’s eligibility for initial access to sensitive law enforcement positions.

3. Polygraph Instrument. A diagnostic instrument used during a PDD examination which is capable of monitoring, recording and/or measuring at a minimum, respiratory, electrodermal, and cardiovascular activity as a response to verbal or visual stimuli.

4. Psychophysiological Detection of Deception (PDD). The academic discipline that provides the student, the practitioner, and the researcher with the theoretical and applied psychological, physiological, and psychophysiological fundamentals for a thorough understanding of PDD tests, and the skills and qualifications for conducting PDD examinations.

5. PDD Examination. A process that encompasses all activities that take place between a PDD examiner and an examinee during a specific series of interactions. These interactions may include the pretest interview, the use of the polygraph instrument to collect physiological data from the examinee while presenting a series of tests, the test data analysis phase, and the post-test phase, which may include the interrogation of the examinee.

6. PDD Examiner. Someone who has successfully completed formal education and training in conducting PDD examinations and is certified by their agency to conduct such examinations.

7. PDD Report. A PDD document that may contain identifying data of the examinee, a synopsis of the basis for which the examination was conducted, the relevant questions utilized, and the examiner’s conclusion.

8. Specific Issue PDD Examination. A PDD examination conducted to resolve a specific issue, e.g., criminal, espionage, sabotage, or source validation.

Chapter II

Quality Control

A. Scope.

This guide establishes the essential elements for quality control (QC) within the federal government.

B. Background.

In order to develop minimum standards for the conduct of QC within the federal government, the federal psychophysiological detection of deception (PDD) program managers and the Department of Defense Polygraph Institute established the Quality Assurance Working Group which developed the basis for these QC standards.

C. Administration of QC.

1. QC Program. Each agency within the federal government with a PDD capability shall maintain a QC program, or obtain a cooperative agreement with another federal agency which has an adequate existing QC program.

2. Technical Supervision of PDD Examiners. QC procedures for the technical supervision of PDD examiners should ensure ethical, professional, and technical standards are maintained.

3. QC Supervision. The QC of PDD examinations should be under the supervision of the PDD program manager.

4. QC Personnel. QC procedures should only be accomplished by designated, experienced, certified PDD examiners.

a. Personnel assigned responsibilities of QC should have a minimum of two years experience as a PDD examiner.

b. QC personnel should have a grade level commensurate with their authority, responsibility, and technical abilities.

c. QC personnel should have technical authority over PDD examiners and should have input into their performance ratings.

5. Centralized QC. To ensure consistent implementation of agency policy, QC procedures should be as centralized as possible.

D. QC Procedures.

1. Operating Procedures. Each agency should have standard operating procedures for the conduct of their QC program.

2. Independent and Objective QC. QC procedures shall be independent and objective, without undue influence of the original examiner or other sources.

3. QC Review. All PDD reports, technical documents and charts shall undergo a QC review to ensure satisfactory tracing quality and correctness of opinion rendered.

4. QC Authority. QC should have the authority to direct reexamination.

5. Examination Results. Agency policy should be established to ensure that the results of an examination are not considered final until the examination has been subjected to the agency's QC program.

6. QC Review Indicated. Each PDD file should indicate that a QC review of the examination has been completed.

E. PDD Approval Procedures.

1. Approval Authority. Each agency will identify those persons authorized to approve the conduct of a PDD examination. The approval authority within each agency should be as centralized as possible. All PDD examinations should be approved prior to being conducted.

2. Accounting Procedures. An accounting procedure for the approval and conduct of specific issue PDD examinations that are requested individually should be established.

3. Approval of Personnel Screening PDD Examinations. Personnel screening examinations are authorized by public law, directive, regulation, and agency policy.

Chapter III

Quality Assurance Procedures

A. Scope.

This guide establishes the essential elements for quality assurance oversight within the federal government.

B. Background.

In order to implement federal minimum quality assurance standards, federal psychophysiological detection of deception (PDD) program managers and the Department of Defense Polygraph Institute (DoDPI) developed the Quality Assurance Program (QAP).

C. Responsibilities.

The DoDPI is responsible for maintaining a QAP. The QAP should inspect the procedures of all federal PDD agencies to ensure ethical, professional and technical standards are maintained.

D. Standards.

The QAP inspections will be based upon the standards established in the Federal PDD Handbook, and the policies and procedures established by the inspected agency. The scope of an inspection may be expanded only upon a request from the inspected agency. The scope of an expanded inspection shall be agreed upon beforehand with the program manager.

E. Inspection Format.

1. Inspection Pre-briefing. QAP will brief agency quality control (QC) personnel at least 30 days prior to their scheduled inspection date. During this pre-briefing, the areas to be inspected and the scope of the inspection will be addressed.

2. On-site Inspection. Inspections will involve an on-site inspection of agency quality control procedures, interviews of agency personnel, and a review of policies, procedures and statistics. A detailed review of a representative sample of PDD examinations will be completed to ascertain adherence to these standards. This review, when appropriate, will entail a thorough review of PDD reports, technical documents, charts and allied documents.

3. Exit Briefing. At the completion of the on-site inspection by the QAP, a draft report will be provided to the agency during an exit briefing.

F. Inspection Report.

1. Response to Recommendations. A final report of inspection will be forwarded to the supervisor of the PDD program manager. The inspected agency shall respond, in writing, to the Director, DoDPI, to recommendations noted in the final inspection report.

2. Final Disposition--Concur. In those instances wherein the QAP and the inspected agency concur that all recommendations have been satisfied, the compliance with these standards will be attested to, in writing, by the Director, DoDPI.

3. Final Disposition--Non-concur. In those instances in which the QAP and the inspected agency do not concur on the findings of the inspection, the issues of disagreement will be forwarded, through the Director, DoDPI to the program manager's supervisor.

G. Reinspection.

When necessary, a reinspection will occur within approximately six months unless specifically declined by the agency.

H. Biennial Inspections.

The QAP will inspect the PDD program quality control procedures of each federal PDD agency biennially.

I. Personnel.

Personnel assigned to the QAP will be experienced criminal investigators and/or security professionals/special agents trained in counterintelligence matters. Criminal investigators will be experienced in conducting criminal specific issue examinations, and counterintelligence/security personnel will be experienced in conducting screening and other intelligence related examinations. Personnel will be experienced certified PDD examiners with a minimum of five years PDD experience with at least two years QC or supervisory experience.

Chapter IV

Education Guidelines

A. Introduction.

1. Core Curriculum. This curriculum represents the minimum standards for the education and training of federal psychophysiological detection of deception (PDD) examiners.

a. A PDD course curriculum will be composed of a core program, and clinical laboratory activities.

b. All PDD students will be required to take the core curriculum described below. The two important aspects of the core curriculum are the didactic portion, which includes traditional classroom work, and the clinical laboratory activities during which the student applies the knowledge gained in the classroom.

2. Basic Course Curriculum Concept.

a. A PDD curriculum will emphasize enduring educational principles in common with all institutions of higher learning. The PDD curriculum will focus on forensic psychophysiology in its subject matter. Rapidly evolving technologies along with research findings in psychology and physiology have produced a great need for federal examiners who are broadly educated and thus intellectually equipped to deal effectively and competently with the complexity of the PDD processes.

b. Inevitable resource constraints in the years immediately ahead mandate that the United States achieve maximum efficiency regarding investigations and security concerns within all the various agencies. A PDD curriculum will be configured to meet these two converging requirements by providing a superior quality graduate-level education in forensic psychophysiology which ensures competency when utilizing the government's most effective case-resolving forensic science.

c. A PDD curriculum should build on its historical role and the research of forensic psychophysiology, and continuously evolve with a long-range strategy of enhancement of this science.

3. Interdisciplinary Approach to Curriculum.

a. A PDD curriculum will be both multidisciplinary and interdisciplinary. It will contain a core program, a scientific research component and a clinical aspect.

b. Each part of the curriculum will be based on the intricate interplay of the parent disciplines, including forensic science, the legal system, physiology and psychology.

c. The academic program will engage the student in a variety of teaching methodologies, including seminars, individual study, research, clinical practica and group exercises.

d. Student comprehension and achievement will be measured in a variety of ways, including written examinations and laboratory performance evaluations.

B. PDD Curriculum Objectives.

1. Broad Objectives. The general objectives of a PDD curriculum will be to:

a. Produce broadly educated students who possess in-depth knowledge and experience in PDD.

b. Develop in military, career civil service special agents and others competency to conduct valid examinations and to make effective decisions and policies regarding PDD application in complex, rapidly changing criminal justice and national security environments.

2. General Learning Objectives.

a. Understand critical theories, concepts and principles related to PDD.

b. Be able to apply these theories, concepts and principles through the conduct of PDD examinations which address a wide range of issues, both specific and general in nature, regarding criminal, intelligence, counterintelligence and screening situations.

c. Analyze physiological data to identify psychological attention to stimuli at a level in which highly valid inferences regarding truth and deception can be made.

d. Synthesize a broad range of theories and concepts suggested from research material, lectures and other acquired knowledge; think critically and creatively about the relevance and applicability of the ideas, and formulate effective strategies and examination approaches to address national security, criminal and intelligence issues.

e. Incorporate ethical considerations; evaluate the propriety of various alternative methodology designed to address national security, criminal and intelligence issues; and defend decisions regarding the selection or rejection of alternatives.

f. Participate effectively in laboratory practica and live field applications of various PDD approaches in which learned theories, concepts and principles are utilized in solving problems and making decisions.

g. Demonstrate professional-level competency and capability in forensic psychophysiology through technical application, oral presentation and written communication.

C. Basic PDD Course Curriculum.

1. PDD Operations.

120 Total Hours - The objectives of this course will be to provide students with an understanding of and the ability to conduct PDD examinations utilizing forensic psychophysiology concepts. Emphasis is focused on test question formulation, the psychological aspects of pretest and posttest interviews and the analysis of physiological test data.

2. PDD Methods.

80 Total Hours - This course will focus on history, ethical considerations and methods. Students will be introduced to the various PDD formats. Class work will include the theoretical and applied aspects of each testing format. Specialized lectures and experiential opportunities will be provided to expose the students to countermeasures and the use of interpreters.

3. PDD Clinical Laboratory Activities.

140 Total Hours - Students apply academic instruction of PDD operations and methods in laboratory environment through the actual conduct of detection of deception examinations using state-of-the-art polygraph instrumentation. A two-to-one student-to-instructor ratio will routinely be maintained during all laboratory practica to ensure constant and immediate instruction and guidance to students regarding proper application. All laboratory

practica should be video recorded. The laboratory setting will exclude outside distractions and ensure privacy. A minimum of 30 examinations shall be conducted during each basic course on a non-student/faculty population to simulate real life conditions.

4. Physiological Principles in the Detection of Deception.

40 Total Hours - Students should receive a graduate level understanding of the anatomical and physiological systems associated with the detection of deception. Emphasis is placed on the nervous system, selected muscle systems, cardiovascular system, respiratory system and the endocrine system (sweat gland activity) as these functions relate to the detection of deception.

5. Psychological Principles in the Detection of Deception.

40 Total Hours - In this course, students will be instructed in the various psychological theories supporting psychophysiological detection of deception methodology, concepts of attention, significance, rapport building, communication, and ego defense mechanisms. Instruction will include the psychological aspects of classification, prediction, and modification of behavior associated with the detection of deception.

6. Research Theories and Issues.

20 Total Hours - The objective of this course will be to introduce students to the scientific literature so that they may read, understand, and critically evaluate relevant research studies and literature. The lectures will focus on basic psychometric principles, basic research design, and issues involved with establishing the reliability and validity of PDD methods. Students will be introduced to a variety of computerized systems, equipment, technologies, and sensors frequently used in the conduct of psychophysiological research.

D. Faculty

1. Faculty Composition.

a. Instructor positions may be full-time, or adjunct faculty members may be used when the instruction falls within their particular expertise.

b. Instructors will have at least a baccalaureate degree from an accredited university. At least 50 percent of the instructors will have an advanced degree in a discipline related to the field of PDD.

c. Instructors will be senior PDD examiners, or will have a doctoral degree in their particular area of instruction, or have recognized expertise in their particular area of instruction.

2. Faculty Organization.

a. The school will be organized around a core faculty to ensure continuity, stability, and scholarly substance for the curriculum.

b. With the exception of adjunct and academician faculty members, the school director and/or Chief of Instruction will have direct input into the evaluations of all faculty members.

c. Because the quality of an institution of higher learning can be no greater than the quality of its faculty, the school will develop a multifaceted approach to faculty development to attract and retain high-quality members.

d. Faculty members will be encouraged to participate in the full range of professional associations and to do extensive outreach activities with federal agencies and other professional groups.

e. All faculty members will receive 40 hours of formal training in instructional methods prior to being certified as instructors.

E. Learning Resources System.

1. Traditional Library.

a. Publications in the area of forensic psychophysiology will be available for student use. This includes periodicals published by such organizations as the American Polygraph Association.

b. Publications in related areas such as physiology, psychology, and criminal justice will also be available for student use.

2. Electronic Information Capability.

a. Access to the Internet and electronic access to bibliographic records, book listings, and periodicals relating to PDD will be available to students.

b. Access to computer systems will be available to students and faculty members to conduct research, facilitate in the preparation of lesson plans, and to interface with the use of the computerized polygraph equipment.

F. Admission Requirements.

All student candidates must meet the following minimum requirements:

1. Be a US citizen.

2. Be at least 25 years of age.

3. Hold an earned baccalaureate degree from an accredited four-year college.

4. Have at least two years experience as an investigator with a US Federal Government agency, Department of Defense agency, or local or state law enforcement agency.

5. Be of high moral character and sound emotional temperament, based on a background investigation.

6. Be judged suitable for the position after taking a PDD examination to ensure that he or she fully realizes the impact of such an examination on persons. This examination shall be given before the beginning of the course of instruction.

Chapter V

Test Question Construction

A. Scope.

This guide establishes essential elements for test question construction for the federal government as taught by the Department of Defense Polygraph Institute.

B. Background.

A test question is a specifically designed sentence posed to an examinee during the data collection phase of a psychophysiological detection of deception (PDD) examination. Test questions are designed to maximize differences in the elicited response patterns between truthful and deceptive examinees. There are several types of test questions used in PDD testing.

C. Question Types.

1. Relevant Question. This question pertains directly to the matter under investigation or to the issue(s) for which the examinee is being tested. Primary and secondary questions are the two types of relevant questions used in most PDD test formats. The following guidelines provide the generally recognized process by which a relevant question should be constructed. Relevant questions should:

a. Be clear and concise.

b. Avoid legal terms, if possible.

c. Be constructed in such a manner that they may be answered yes or no.

d. Not be worded in the form of an accusation or contain an inference which presupposes knowledge or guilt. e. In specific issue tests, when testing for multiple items or amounts of money, use the phrase, "any of", e.g., "Did you steal <u>any of</u> that money?"

f. In specific issue tests, only address one issue in each question.

g. In specific issue tests, only address one incident in each series.

2. Primary Relevant. This question tests the possible direct involvement of the examinee. In PDD screening questioning formats, all relevant questions are considered primary relevant questions.

3. Secondary Relevant. This question tests the examinee's possible involvement in the offense under investigation. A secondary relevant question should be constructed to address a secondary issue such as help, plan, or participate; test for secondary involvement in, such as seeing, hearing, or knowing; or focus on the nature or location of evidence and/or physical acts that support the primary offense. There are three types of secondary relevant questions:

a. Evidence connecting. An evidence connecting question is designed to determine if the examinee was involved with any of the evidence of the crime, or is aware of the nature or location of various items of evidence, for example:

Do you know where any of that money is now?

b. Guilty Knowledge. This question is used to determine if the examinee has any knowledge of who committed the incident under investigation, for example:

Do you know for sure who shot that man?
Do you know who stole any of that money?

c. Secondary Involvement. This question tests for secondary involvement such as seeing or hearing, or focuses on physical acts that support the primary offense. An example is:

Did you participate in the theft of any of that money?

4. Comparison Question. Physiological responses of comparison questions are compared to physiological responses of relevant questions. The comparison question is designed to produce a greater physiological response for the non-deceptive person. The probable lie and directed lie questions are the two types of comparison questions utilized within the federal government.

a. Probable Lie Comparison (PLC) Question. This question is designed to be a probable lie for the examinee. The PLC question should be similar in nature but unrelated to the specific crime or issue being tested. The question should be separated from the relevant issue by either time, place or category. The comparison question should use the same action verb or similar in nature action verb as that of the relevant issue. A comparison question should

be broad in scope and time so that it captures as many of the examinee's past life experiences as possible. An example is:

Theft issue: Before 1997, did you ever steal anything?

b. Directed Lie Comparison (DLC) Question. The DLC question is a specialized comparison question. A properly constructed DLC question involves a minor transgression which should have some personal significance to the examinee. Upon acknowledging having committed such a transgression, the examinee is directed to lie when asked that question on the test. The question is separated from the relevant issue by category. An example is:

Did you ever commit a minor traffic violation?

5. Sacrifice Relevant Question. When utilized, this is the first question that refers to the relevant issue, and it prepares the examinee for the introduction of the relevant questions. Sacrifice relevant questions are not scored during the test data analysis phase of a PDD examination. Examples are:

Regarding whether you stole that car, do you intend to answer truthfully each question about that? (you phase ZCT)
Regarding the theft of that car, do you intend to answer each question truthfully?

6. Symptomatic Question. This question is designed to test for an outside issue that could be more significant for an examinee than the relevant and comparison issues. Symptomatic question responses are evaluated, though not numerically scored, during the test data analysis phase of a PDD examination. Examples are:

Do you believe I will only ask you the questions we reviewed?
Is there something else you are afraid I will ask you a question about?

7. Irrelevant Questions in Comparison Question Formats. The irrelevant question is the first question asked during the data collection phase. It may also be asked in other positions on the chart. It is designed to allow the orienting response to habituate before a scoreable question is asked, and it can be used to establish homeostasis when an artifact occurs on the chart. Irrelevant questions should be unrelated to the issue being tested. Irrelevant questions are not scored. Several irrelevant questions may be reviewed and used as needed. Examples are:

Are you now in Alabama?
Are you sometimes called Tom?

8. Irrelevant Questions in Relevant/Irrelevant (R/I) Formats. In R/I formats the irrelevant question is designed to allow the orienting response to habituate before a relevant question is asked, and as well, has special applications in the R/I question format. They are designed to be neutral, but should appear to be meaningful to the examinee. Irrelevant questions should be non-emotion evoking and unrelated to the issue under investigation. Several irrelevant questions may be reviewed and used as needed. Irrelevant questions are not scored against relevant test questions during the data analysis phase. Examples are:

Is today Friday?
Are you now in Alabama?
Do you live in MD?

9. Overall Truth Question. This is an optional question which may be utilized in an R/I question format. It is similar to the sacrifice relevant question in comparison question formats. It is intended to elicit a physiological response which may be indicative of the examinee's overall response capability. This question may be asked near the beginning and/or at the end of a PDD chart. Examples are:

Do you intend to answer truthfully all of the questions on this test?
Have you truthfully answered all of the questions on this test?

10. Stimulus Question. This question is an optional question which may be utilized in an R/I question format to determine the examinee's overall capacity for response. It is only used when the examinee exhibits a consistent lack of response. The two types of stimulus questions taught by DoDPI are the math and the specific issue R/I stimulus questions. The specific issue R/I stimulus question is used only in the specific issue R/I format.

a. Math Question. The examinee is told that a math question may be asked during the examination but the exact wording of the question is not reviewed. Examples are:

Does 10 + 9 = 19?
Does 7 + 5 = 12?

b. Specific Issue R/I Stimulus Question. This question is utilized to determine the examinee's overall capacity for response. It is used primarily when the examinee exhibits a consistent lack of response. When utilized in this R/I format, the stimulus question can be directed at specific thoughts, beliefs or actions of the examinee as it relates to the issue under investigation.

Responses to stimulus questions will not be utilized as comparison questions. An example is:

Were you on that bridge that night?

D. References.

1. Abrams, S. (1989). The complete polygraph handbook. Lexington, MA: Lexington Books.

2. Janniro, M. J. (1993). Effects of computer-based instruction on student learning of psychophysiological detection of deception test question formulation. Journal of Computer-Based Instruction, 20 (2, Spring), 58-62.

3. Matte, J. A. (1980). The art and science of the polygraph technique. Springfield, IL: Charles C. Thomas Publisher.

4. Matte, J. A. (1996). Forensic psychophysiology using the polygraph: Scientific truth verification-lie detection. Williamsville, NJ: J.A.M. Publications.

5. Weinstein, D. A. (1994). Anatomy and physiology for the forensic psychophysiologist. Fort McClellan, AL: Department of Defense Polygraph Institute.

Chapter VI

Test Data Analysis

A. Scope.

1. This guide establishes essential elements for test data analysis for the federal government as taught by the Department of Defense Polygraph Institute (DoDPI).

2. The physiological recordings which comprise a psychophysiological detection of deception (PDD) examination are addressed in this standard. The respiratory, electrodermal, and cardiovascular are the three currently accepted channels for collecting PDD data.

B. Background.

1. Relevant/Irrelevant (R/I). The R/I test data analysis process was in large part developed by Leonard Keeler. The basic tenants of that evaluation process were adopted by the DoDPI from the United States Army Military Police School (USAMPS) and were subsequently adopted by agencies of the federal government.

2. Numerical Test Data Analysis. The numerical evaluation procedure in large part was developed by Cleve Backster. A variation of that procedure was adopted by the USAMPS, DoDPI, and subsequently utilized by agencies of the federal government.

C. Test Data Analysis.

1. Evaluation Procedures. There are four methods used to analyze PDD test data in the federal government: the three-position and seven-position scales, global test data analysis, and the rank order scoring system (ROSS). In the three-position and seven-position scales, numerical values are assigned to the test data. Global test data analysis does not utilize a numerical system. ROSS may be used to help support conclusions based on a global analysis of the R/I test technique. While scoring methods differ, the evaluation criteria used in analyzing the data collected on the charts are standard among each method.

2. Numerical Evaluation. The three-position and seven-position numerical evaluation procedures are used to evaluate comparison question formats. The responses to the relevant questions are compared to the responses at the comparison questions. For the three-position scale, a plus (+) value is assigned when the physiological responses are greater to the comparison questions. A minus (-) value is assigned when the physiological responses are greater to the

relevant questions. A value of zero (0) is assigned when the responses to the comparison and relevant questions appear to have no apparent difference in magnitude. An "A" is assigned when the question is unable to be evaluated due to artifacts. For the seven-position scale, numerical values ranging from plus three (+3) to minus three (-3) are assigned to each independent physiological tracing at each relevant test question position.

3. Global Analysis. This analysis method is a system of rendering an opinion by viewing the PDD chart as a whole. This approach does not employ the use of numerical values. This method is used in the R/I and peak of tension question formats. Since there are no comparison questions in this technique, the presence or absence of responses to a question is compared with the rest of the chart tracings in their entirety.

4. ROSS. The ROSS ranks the questions on the charts from greatest to least responsiveness. In ROSS, each physiological parameter, i.e., respiration, electrodermal, and cardiovascular, is evaluated separately. ROSS provides the examiner with a cumulative picture of the consistent, significant and timely responses on the PDD charts. This method of evaluation is used exclusively to evaluate the R/I questioning formats.

5. Evaluative Criteria. Only data that is timely with the applied stimulus and free of artifacts and unwanted noise on the signal of interest can be evaluated. What is evaluated is the response or lack thereof when a stimulus is applied by the examiner. PDD test data consists of the signal of interest which may contain unwanted noise, artifact, homeostatic change, or response. Not all test data is evaluated. If unwanted noise, an artifact, or homeostatic change occurs at the time of an applied stimulus, the evaluation of that test data may not be achieved. In comparison question formats, physiological response can only be compared against physiological response. A question spacing of 20 to 25 seconds from onset of applied stimulus should be maintained throughout the examination.

6. Evaluation Criteria for Each Component. Only that physiological criteria taught by DoDPI will be utilized to evaluate test data.

7. Test Data Analysis Opinions. The following six opinions are those that may be rendered when sufficient test data is collected during a PDD examination: deception indicated (DI), significant responses (SR), no deception indicated (NDI), no significant responses (NSR), no opinion (NO).

a. Opinions of DI and NDI are appropriate in a specific issue series.

b. Opinions of NSR and SR are appropriate in screening examinations.

8. Administrative Opinions. These opinions reflect the results of a series or an examination that are not based upon physiological responses to the applied stimuli, such as when the examinee terminates an examination or is practicing countermeasures. In such instances, administrative opinions such as inconclusive, purposeful non-cooperation, etc., are appropriate.

D. Reference Documents.

1. Abrams, S. (1989). The complete polygraph handbook. Lexington, MA: Lexington Books.

2. Matte, J. A. (1980). The art and science of the polygraph technique. Springfield, IL: Charles C. Thomas Publisher.

3. Matte, J. A. (1996). Forensic psychophysiology using the polygraph: Scientific truth verification-lie detection. Williamsville, NJ: J.A.M. Publications.

4. Weinstein, D. A. (1994). Anatomy and physiology for the forensic psychophysiologist. Fort McClellan, AL: Department of Defense Polygraph Institute.

Chapter VII

Acquaintance Test

A. Scope.

This guide establishes essential elements for the conduct of the acquaintance test (ACQT) for the federal government as taught by the Department of Defense Polygraph Institute (DoDPI).

B. Background.

1. The ACQT, as taught by DoDPI, is a form of the known solution peak of tension test (POT), and is utilized to demonstrate the basic concepts of the psychophysiological detection of deception (PDD) to an examinee. The primary purpose of the ACQT is to assure the examinee that the PDD process is effective for that individual. The ACQT should also reinforce the concept of psychological set for the examinee.

2. The ACQT is referred to as an acquaintance test since it is administered, in part, to acquaint the examinee with PDD procedures. A known solution ACQT is the only type of ACQT taught by DoDPI.

C. Pretest Phase.

1. Question Review. During the pretest phase, the fact that an ACQT will be conducted is mentioned and all questions are reviewed prior to the test being conducted.

2. Questions Utilized in the ACQT.

a. The Key. This represents the number chosen by the examinee.

b. Padding Questions. These questions are placed before and after the key number, and consist of questions relating to the other numbers on the test.

c. Preparatory Phrase. This is the first part of the first question of the ACQT, and it is utilized to focus the examinee's attention to the issue which is being tested, for example:

Regarding the number you wrote ….

d. Prefix Phrase. This is the prefix to each of the questions, for example:

Was it number…..

D. Data Collection.

1. Question Sequence (example).

Preparatory phrase	Regarding the number you wrote,…
Prefix	was it number…
Padding	4?
Padding	5?
Padding	6?
Key	7?
Padding	8?
Padding	9?

2. Question Format Procedures. The ACQT is conducted in a mini-PDD format. It consists of a pretest interview, data collection phase, data analysis phase, and post-test interview. This PDD process should reassure the non-deceptive examinee and stimulate the deceptive examinee.

a. A visual stimulus is utilized in the ACQT to insure the examinee knows the sequence of the examination, to include the location of the selected key.

b. All questions are worded to elicit a no answer.

E. Test Data Analysis.

Evaluation Process. The ACQT is not evaluated numerically. It is evaluated utilizing the test data analysis procedures for POT as taught by DoDPI.

F. References.

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2. Dufek, M. (1969). A contribution on the problem of polygraph examinations, Czechoslovak Criminalistics.

3. Gustafson, L. A. & Orne, M.T. (1965). Effects of perceived role and role success on the detection of deception. Journal of Applied Psychology, 49, 412-417.

Chapter VIII

Zone Comparison Test

A. Scope.

This guide establishes essential elements for the conduct of zone comparison tests (ZCT) for the federal government as taught by the Department of Defense Polygraph Institute.

B. Background.

The ZCT was designed by Cleve Backster, and a variation of that format was subsequently adopted by the United States Army Military Police School in l961. The ZCT, as taught by DoDPI, has changed little from the original Backster testing format.

C. Pretest Phase.

1. Question Review. During the pretest interview, all ZCT questions are reviewed with the examinee prior to the collection of charts. The following sequence is used in introducing the questions:

Sacrifice Relevant (SR)
Relevant (R)
Comparison (C)
Irrelevant (I)
Symptomatic (SYM)

2. Questions Utilized in the ZCT.

a. Primary Relevant. This question tests the possible direct involvement of the examinee. The primary relevant questions are R5 and R7. Question R7 is an extension of or a paraphrasing of R5. Examples are:

R5 Did you steal that Mustang?
R7 Did you steal that Mustang from that parking lot?
R7 (Alternate) Are you the person who stole that Mustang from the Sears parking lot?

b. Secondary Relevant. This question tests the examinee's secondary involvement in or guilty knowledge of the offense under investigation. The secondary relevant question is R10. Under no circumstance should question R10 be a primary relevant question. Examples are:

Did you help steal that Mustang?
Do you know how that car was disposed of?
Do you know for sure who stole that Mustang?
Did you plan with anyone to steal that Mustang?

c. Probable Lie Comparison (PLC) Question. This question is designed to be a probable lie for the examinee. The PLC question should be similar in nature but unrelated to the specific crime or issue being tested. The questions should be separated from the relevant issue by either time, place or category. The comparison questions should use the same action verb or similar in nature action verb as that of the relevant issue. A comparison question should be broad in scope and time so that it captures as many of the examinee's past life experiences as possible. An example is:

Theft issue: Before 1997, did you ever steal anything of value?

d. Sacrifice Relevant Question. This is the first question of the ZCT format that refers to the relevant issue, and it prepares the examinee for the introduction of the relevant questions. An example is:

Regarding the theft of that car, do you intend to answer each question truthfully?

e. Irrelevant Question. The irrelevant question is the first question asked during the data collection phase. It may also be asked in other positions on the chart. It is designed to allow the orienting response to habituate before a scoreable question is asked, and it can be used to establish homeostasis when an artifact occurs on the chart. Irrelevant questions should be unrelated to the issue being tested. Irrelevant questions are not scored. Several irrelevant questions may be reviewed and used as needed. Examples are:

Are you now in Alabama?
Are you sometimes called Tom?

f. Symptomatic Question. This question is designed to test for an outside issue that could be more significant for an examinee than the relevant and comparison issues. Symptomatic question responses are not scored during the test data analysis phase of a PDD examination. The symptomatic questions are always Questions #3 and #8 on the ZCT. Examples are:

SYM #3 Do you believe I will only ask you the questions we reviewed?
SYM #8 Is there something else you are afraid I will ask you a question about?

D. Data Collection.

1. Question Sequence. With the possible exception of irrelevant questions, all questions reviewed during the pretest phase of the examination will be asked during the data collection phase.

I	Are you sometimes called Mike?
SR	Regarding that stolen money, do you intend to answer each question truthfully?
SYM	Do you believe I will only ask you the questions we reviewed?
C	Prior to 1996, did you ever steal anything from someone who trusted you?
R	Did you steal any of that money?
C	Prior to coming to Alabama, did you ever steal anything?
R	Did you steal any of that money from Jones' footlocker?
SYM	Is there something else you are afraid I will ask you a question about?
C	Prior to this year, did you ever steal anything from an employer?
R	Do you know where any of that stolen money is now?

2. Question Rotation. Following the collection of the first ZCT chart, the comparison questions may be rotated. The comparison question exhibiting the greatest physiological response should be placed adjacent to the relevant question exhibiting the greatest physiological response. The rotation of the comparison questions may be made on all subsequent charts.

3. Chart Requirements. In most instances, the collection of three charts is appropriate. A fourth chart is only authorized if an artifact occurred which precluded a conclusive opinion from being rendered. If after three charts a conclusive opinion can be rendered from those components not affected by artifacts, then the test is complete. The numerical total required for a conclusive opinion remains the same as for a three-chart series.

4. Conduct of an Acquaintance Test (ACQT). The ACQT may be collected as the first chart of this examination. It is conducted, in part, to acquaint the examinee with PDD procedures. The known solution ACQT is the only ACQT taught by DoDPI.

E. Test Data Analysis.

1. Numerical Analysis. The two numerical evaluation procedures are referred to as the three-position and seven-position scales.

2. Spot Analysis. Relevant questions are grouped together and referred to as spots. The examiner monitors and evaluates the examinee's response in these spots. The three spots of the ZCT are:

a. SPOT I - Questions in positions C4 & C6 compared to R5.

b. SPOT II - Question in position C6 compared to R7.

c. SPOT III - Question in position C9 compared to R10.

3. Test Data Analysis Procedures. When comparing relevant and comparison questions, each component tracing will be reviewed and compared independently. The greatest physiological response of the comparison question(s) will be compared to the adjacent relevant question.

4. Opinion Rendering Criteria.

a. Deception Indicated (DI). To render an opinion that the examinee is deceptive on the ZCT, the score must be minus three (-3) or less in any overall vertical spot or a grand horizontal total of minus six (-6) or less for all spots.

b. No Deception Indicated (NDI). To render an opinion of non-deception, there must be a plus one (+1) or greater in every overall vertical spot with a horizontal grand total of plus six (+6) or more for all spots.

c. No Opinion (NO). If it is not DI or NDI, it is NO with the exception of administrative opinions.

F. References.

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2. Blackwell, N. J. (1996). Polyscore: A comparison of accuracy (Rep. No. DoDPI 95-R-0001). Fort McClellan, AL: Department of Defense Polygraph Institute.

3. Janniro, M. J. (1993). Effects of computer-based instruction on student learning of psychophysiological detection of deception test question formulation. Journal of Computer-Based Instruction, 20 (2, Spring), 58-62.

4. Shull, K. W. & Crowe, M. (1993). Effects of two methods of comparing relevant and control questions on the accuracy of psychophysiological detection of deception (Rep. No. DoDPI 93-R-0002). Fort McClellan, AL: Department of Defense Polygraph Institute.

Chapter IX

You Phase Zone Comparison Test

A. Scope.

This guide establishes essential elements for the conduct of the "you phase" zone comparison test (ZCT), previously known as the bi-zone, for the federal government as taught by the Department of Defense Polygraph Institute (DoDPI).

B. Background.

The you phase ZCT was designed by Cleve Backster, and a variation of that format was subsequently adopted by the United States Army Military Police School in l961. The you phase ZCT, as taught by DoDPI, has changed little from the original Backster testing format.

C. Pretest Phase.

1. Question Review. During the pretest interview, all questions are reviewed with the examinee prior to the collection of charts. The following sequence is used when introducing the questions:

Sacrifice Relevant (SR)
Relevant (R)
Comparison (C)
Irrelevant (I)
Symptomatic (SYM)

2. Questions Utilized in the You Phase.

a. Primary Relevant. This question tests the possible direct involvement of the examinee. The primary relevant questions are R5 and R7. Question R7 is an extension or a paraphrasing of question R5, for example:

R5 Did you steal that Mustang?
R7 Did you steal that Mustang from that parking lot?
R7 (Alternate) Did you steal that Mustang from the Sears parking lot?

b. Probable Lie Comparison Question (PLC). This question is designed to be a probable lie for the examinee. The PLC question should be similar in nature but unrelated to the specific crime or issue being tested. The

question should be separated from the relevant issue by either time, place or category. The comparison question should use the same action verb or similar in nature action verb as that of the relevant issue. A comparison question should be broad in scope and time so that it captures as many of the examinee's past life experiences as possible. An example is:

Theft issue: Before 1997, did you ever steal anything of value?

c. Sacrifice Relevant. This is the first question of the you phase format that refers to the relevant issue, and it prepares the examinee for the introduction of the relevant questions. The relevant questions in the you phase ZCT address only the primary issue, i.e., "Did you steal that Mustang?". Therefore, the scope of the sacrifice relevant question should be limited to the specific issue addressed by the relevant question. The sacrifice relevant question is always the #2 question in the you phase ZCT. An example is:

Regarding whether you stole that Mustang, do you intend to answer each question truthfully?

d. Irrelevant Question. The irrelevant question is the first question asked during the data collection phase. It may also be asked in other positions on the chart. It is designed to allow the orienting response to habituate before a scoreable question is asked, and it can be used to establish homeostasis when an artifact occurs on the chart. Irrelevant questions should be unrelated to the issue being tested. Irrelevant questions are not scored. Several irrelevant questions may be reviewed and used as needed. Examples are:

Are you now in Alabama?
Are you sometimes called Tom?

e. Symptomatic Questions. This question is designed to test for an outside issue that could be more significant for an examinee than the relevant and comparison issues. The symptomatic question responses are not scored during the test data analysis phase of a PDD examination. The symptomatic questions are #3 and #9 in the you phase test format. Examples are:

SYM #3 Do you believe I will only ask you the questions we reviewed?
SYM #9 Is there something else you are afraid I will ask you a question about?

D. Data Collection.

1. Question Sequence.

I Are you sometimes called Mike?
SR Regarding whether you stole that money, do you intend to answer each question truthfully?
SYM Do you believe I will only ask you the questions we reviewed?
C Prior to 1996, did you ever steal anything from someone who trusted you?
R Did you steal any of that money?
C Prior to coming to Alabama, did you ever steal anything?
R Did you steal any of that money from Jones' footlocker?
C Prior to this year, did you ever steal anything from an employer?
SYM Is there something else you are afraid I will ask you a question about?

2. Question Rotation. Following the collection of the first ZCT chart, the comparison questions may be rotated. The comparison question exhibiting the greatest physiological response should be placed between the two relevant questions. The rotation of the comparison questions may be made on all subsequent charts.

3. Chart Requirements. In most instances, the collection of three charts is appropriate. A fourth chart is only authorized if an artifact occurred which precluded a conclusive opinion from being rendered. If after three charts a conclusive opinion can be rendered from those components not affected by artifacts, then the test is complete. The numerical total required for a conclusive opinion remains the same as a three-chart series.

4. Conduct of an Acquaintance Test (ACQT). The ACQT may be collected as the first chart of this examination. It is conducted, in part, to acquaint the examinee with PDD procedures. The known solution ACQT is the only ACQT taught at DoDPI.

E. Test Data Analysis:

1. Numerical Analysis. The two numerical evaluation procedures are referred to as the three-position and seven-position scales.

2. You Phase Spot Analysis. Relevant questions are grouped together in spots. The examiner monitors and evaluates the examinee's response in these spots. The two spots of the you phase ZCT are:

a. SPOT I - Questions in positions C4 & C6 compared to R5.

b. SPOT II - Questions in positions C6 & C8 compared to R7.

3. Test Data Analysis Procedures. When comparing relevant and comparison questions, each component tracing will be reviewed and compared independently. The greatest physiological response of the comparison question(s) will be compared to the adjacent relevant question.

4. Opinion Rendering Criteria.

a. Deception Indicated (DI). To render an opinion that the examinee is deceptive on the you phase ZCT, the score must be minus three (-3) or less in any overall vertical spot or a grand horizontal total of minus four (-4) or less for all spots.

b. No Deception Indicated (NDI). To render an opinion of non-deception, there must be a plus one (+1) or greater in every overall spot with a grand horizontal total of plus four (+4) or more for all spots.

c. No Opinion (NO). If it is not DI or NDI, it is NO with the exception of administrative opinions.

F. References.

1. Hammond, D. L. (1980). The responding of normals, alcoholics, and psychopaths in a laboratory lie detection experiment. Dissertation Abstracts International, 41, (6-B) 2374.

2. Raskin, D. C. (1976). Reliability of chart interpretation and sources of error in polygraph examinations. (Report No. 76-3 National Institute of Law Enforcement and Criminal Justice, Law Enforcement Assistance Administration, US Department of Justice, Contract No. 75-NI-99-0001, Department of Psychology, University of Utah).

Chapter X

Comparison Test Formats

A. Scope.

This guide establishes essential elements for the conduct of comparison test formats (CTF) for the federal government as taught by the Department of Defense Polygraph Institute (DoDPI).

B. Background.

The term CTF is an umbrella term which addresses variations of the modified general question test (MGQT). Although the zone comparison test (ZCT) is also a CTF, the ZCT will be considered separate since research and the psychophysiological detection of deception (PDD) community address this question format as unique. The variations of the MGQT question formats addressed in this document have been validated through research and/or have been taught at DoDPI. These formats are among those utilized for personnel screening, source validation and criminal specific PDD testing.

C. Pretest Phase.

1. Order for Question Review. During the pretest interview, all questions are reviewed with the examinee prior to the collection of charts. The following sequence should be used in introducing questions:

Sacrifice Relevant (SR) (if applicable)
Relevant (R)
Comparison (C)
Irrelevant (I)

2. Questions Utilized in the CTF. The following question types may be used in CTF applications.

a. Primary Relevant. This question tests the possible direct involvement of the examinee. An example is:

Did you steal that car from that parking lot?

b. Secondary Relevant. This question tests the examinee's possible involvement in the offense under investigation. A secondary relevant question should be constructed to: address a secondary issue such as help, plan, or participate; test for secondary involvement in, such as seeing, hearing, or knowing; or focus on the nature or location of evidence and/or physical acts that

support the primary offense. In the CTF, there are three types of secondary relevant questions:

1) Evidence connecting. An evidence connecting question is designed to determine if the examinee was involved with any of the evidence of the crime, or is aware of the nature or location of various items of evidence. An example is:

Do you know where any of that money is now?

2) Guilty Knowledge. This question is used to determine if the examinee has any knowledge of who committed the incident under investigation. Examples are:

Do you know for sure who shot that man?
Do you know who stole any of that money?

3) Secondary Involvement. This question tests for secondary involvement such as seeing, hearing, or focuses on physical acts that support the primary offense. An example is:

Did you participate in the theft of any of that money?

c. Probable Lie Comparison (PLC) Question. This question is designed to be a probable lie for the examinee. The PLC question should be similar in nature but unrelated to the specific crime or issue(s) being tested. The question should be separated from the relevant issue by either time, place or category. The comparison question should use the same action verb or similar in nature action verb as that of the relevant issue. A comparison question should be broad in scope and time so that it captures as many of the examinee's past life experiences as possible. An example is:

Theft issue: Before 1997, did you ever steal anything of value?

d. Directed Lie Comparison (DLC) Question. The DLC question is a specialized comparison question. A properly constructed DLC question involves a minor transgression which should have some personal significance to the examinee. Upon acknowledging having committed such a transgression, the examinee is directed to lie when asked that question on the test. The DLC question is separated from the relevant issue by category. The DLC question, in the CTF context, may be used in counterintelligence matters. It is inappropriate to utilize DLC and PLC questions in the same test. An example of a DLC question is:

Did you ever lie to a coworker about anything?

e. Sacrifice Relevant Question. When utilized, this is the first question that refers to the relevant issue, and it prepares the examinee for the introduction of the relevant questions. An example is:

> Regarding the theft of that car, do you intend to answer each question truthfully?

f. Irrelevant Question. An irrelevant question is the first question asked during the data collection phase. It may also be asked in other positions on the chart. It is designed to allow the orienting response to habituate before a scoreable question is asked, and can be used to establish homeostasis when an artifact occurs on the chart. Irrelevant questions should be unrelated to the issue being tested. Irrelevant questions are not scored. Several irrelevant questions may be reviewed and used as needed. Examples are:

> Are you now in Alabama?
> Are you sometimes called Tom?

D. Data Collection Phase.

1. Question Format. With the possible exception of irrelevant questions, all questions reviewed during the pretest phase of the examinations will be asked during the data collection phase. The exact sequence in which the questions are to be asked in the data collection phase is not revealed.

2. The test format should begin with an irrelevant question. Irrelevant questions may be inserted into each chart as needed. A sacrifice relevant question may be included in the test format. Two to five relevant and two to four comparison questions may be utilized.

3. If a single relevant question test is required, the you phase ZCT should be utilized.

4. Test Operations. After the first chart, comparison questions may be rotated, or a mixed series may be utilized. At least one of the subsequent charts must be a mixed series. After the first chart, subsequent charts should be constructed so that the relevant question displaying the greatest physiological responses is adjacent to the comparison question(s) with the greatest physiological responses. Each relevant question should be bracketed by comparison questions in at least one chart of each series.

5. Chart Requirements. In most instances, three askings of each relevant question is appropriate. An additional asking of all questions, i.e., a fourth chart,

is only authorized if an artifact occurred which precluded a conclusive opinion from being rendered. If after three askings a conclusive opinion can be rendered from those components not affected by artifacts, the test is complete. The numerical total required for a conclusive opinion when four charts are conducted remains the same as for a three-chart series. Under no circumstance is a fifth asking (chart) authorized.

6. Conduct of an Acquaintance Test (ACQT). The ACQT may be collected as the first chart of this examination. It is conducted, in part, to acquaint the examinee with PDD procedures. The known solution ACQT is the only ACQT taught by DoDPI.

E. Test Data Analysis.

1. Numerical Analysis. The two numerical evaluation procedures are referred to as the three-position and seven-position scales.

2. Spot Analysis. Relevant questions are grouped together in spots. The examiner monitors and evaluates the examinee's response in these spots.

3. Test Data Analysis Procedures. When comparing relevant and comparison questions, each component tracing will be reviewed and compared independently. The greatest physiological response of the comparison question(s) will be compared to the adjacent relevant question(s).

4. Opinion Rendering Criteria.

a. Deception Indicated (DI). To render an opinion that the examinee is deceptive on the CTF, the score must be minus three (-3) or less in any overall vertical spot. There is no overall horizontal spot total utilized to render an opinion, as is the case in the ZCT.

b. No Deception Indicated (NDI). To render an opinion of non-deception, there must be a plus three (+3) or greater in every overall vertical spot when utilizing a seven-position scale.

c. No Opinion (NO). If based upon physiological responses to the applied stimuli an opinion of NDI or DI cannot be rendered, the opinion is NO. When appropriate, an administrative opinion should be rendered.

F. References.

1. Barland, G. H., Honts, C. R., & Barger, S. D. (1990). The detection of deception for multiple issues. (Project No. DoDPI89-P-0005). Fort McClellan, AL: Department of Defense Polygraph Institute.

2. Davidson, W. A. (1979). Validity and reliability of the cardio activity monitor. Polygraph, 8, 104-111.

3. Janniro, M. J. (1993). Effects of computer-based instruction on student learning of psychophysiological detection of deception test question formulation. Journal of Computer-Based Instruction, 20 (2, Spring), 58-62.

4. Patrick, C. J., & Iacono W. G. (1987) Validity and reliability of the control question polygraph test: A scientific investigation. Paper presented at the Society of Psychophysiological Research Meeting, Amsterdam, 1987.

5. Podlesny, J. A. & Truslow, C. M. (1993). Validity of an expanded-issue (modified general question) polygraph technique in a simulated distribution-crime-roles context. Journal of Applied Psychology, 78, 788-797.

6. Raskin, D. C., Kircher, J. C., Honts, C. R. & Horowitz, S. W. (1988) A study of the validity of polygraph examinations in criminal investigation (Grant No. 85-IJ-CX-0040). Washington, DC: National Institute of Justice.

7. Yankee, W. J., (1990). Position statement pertaining to control question techniques. Fort McClellan, AL: Department of Defense Polygraph Institute.

Chapter XI

Peak of Tension Test

A. Scope.

This guide establishes essential elements for the conduct of the peak of tension (POT) formats for the federal government as taught at the Department of Defense Polygraph Institute (DoDPI).

B. Background.

The POT was developed by Leonarde Keeler to determine possible guilty knowledge possessed by an examinee. It is used most frequently after an examination in which a deception indicated (DI) opinion has been rendered. The known solution POT is utilized when an examinee denies any knowledge regarding a specific element of a crime or incident that has been verified through investigation or other means. The searching POT (SPOT) is utilized when the crucial key area is suspected to be known by an examinee who denies any such knowledge. This format is also known as the unknown or probing POT.

C. Pretest Phase.

1. Question Review. During the pretest interview, all POT and SPOT questions are reviewed with the examinee prior to the collection of charts. The questions are reviewed in the sequence they are to be asked.

a. The following is an example of the sequence for introducing a POT:

Preparatory Phrase
Prefix phrase
Padding
Key
Padding

b. The following is an example of the sequence for introducing a SPOT:

Preparatory Phrase
Prefix phrase
Padding
Key choices
Coverall
Padding

2. Questions Utilized in the POT and SPOT.

a. POT Key. The POT key is a fact about the crime which should be known only by the perpetrator, the examiner, and the investigators.

b. SPOT Key Choices. The SPOT key is a fact about the crime known only by the perpetrator.

c. Padding Questions. Padding questions are used before and after the key. They must be similar to the key, and the same prefix should be used with padding questions and the key. Padding questions must not involve the relevant issue.

d. False Key. This is an optional padding question which has special meaning to the examinee. It is always placed in the second position and has at least one padding question between it and the key. The principal of the false key is similar to a comparison question. The examinee will react to it because he/she has been sensitized to it; the deceptive examinee should display the most significant response to the key. A false key is only used in a known solution POT.

e. Preparatory Phrase. This is the prefix to the first question of a POT or SPOT. It is utilized to focus the examinee's attention to the issue which is being tested. It is only stated at the beginning of the first question, for example:

Regarding the amount of money stolen from that wallet….

f. Prefix Phrase. This phrase is a continuation of the preparatory phrase. It is asked with each question utilized within the POT and SPOT structure. Since the purpose is to test for guilty knowledge, the prefix phrase is worded, "Was it,…?", or "Is it…?"

g. Coverall Question. This question is utilized in the SPOT. The question following the prefix phrase is worded, e.g., "…somewhere else not mentioned?", and is normally placed in the seventh position. It is intended to cover any other area or possible key not previously addressed.

D. Data Collection.

1. Question Sequence.

a. Known Solution (example).

Preparatory phrase	Regarding the color of that car,…
Prefix	was it…
Padding question	red?

Padding question	blue?
Padding question	green?
Key question	white?
Padding question	silver?
Padding question	black?

b. Searching POT (example).

Preparatory phrase	Regarding the location of that property,…
Prefix	is it located in…
Padding question	Geneva?
Padding question	London?
Key choice	area A?
Key choice	area B?
Key choice	area C?
Key choice	area D?
Coverall	an area (I have) not mentioned?
Padding question	Frankfurt
Padding question	Milan?

2. Question Rotation. The SPOT and POT normally consists of three charts. The first two charts are asked in the above sequence. The third chart is reviewed and conducted in reverse sequence. If no opinion can be rendered after three charts, a fourth, unreviewed, and mixed sequence chart may be collected.

3. Known Solution Format Procedures. The known solution POT examination may consist of six to nine questions. The key should not be placed in the middle of the examination. Only one key can be tested per examination.

a. A visual stimulus is utilized in the POT to insure the examinee knows the sequence of the examination.

b. The POT is normally utilized following a deceptive initial examination.

c. All questions are worded to elicit a no answer.

4. SPOT Format Procedures. The key is unknown and the examination normally consists of nine questions. There must be at least two padding questions at the beginning and end of the sequence.

a. A visual stimulus is utilized in the SPOT to insure the examinee knows the sequence of the examination.

b. The SPOT is generally utilized following a deceptive initial examination.

c. All questions are worded to elicit a no answer.

E. Test Data Analysis.

1. Global Analysis. The POT and SPOT are not evaluated numerically as in comparison question formats. They are evaluated utilizing the test data analysis procedures for POT and SPOT as taught by DoDPI.

2. Opinion Rendering Criteria.

a. If the examinee displayed physiological responses at the same question on at least two of the three POT or SPOT charts collected, the examiner must conclude that there were significant responses.

b. If the examinee does not display evaluative criteria at the same test question in any of the recorded physiological parameters on at least two of the three charts collected, the examiner must conclude that there were no significant responses.

c. For administrative purposes, an opinion of significant response (SR) indicates guilty knowledge.

F. References.

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Chapter XII

Relevant/Irrelevant Screening Test

A. Scope.

This guide establishes essential elements for the conduct of the relevant/ irrelevant (R/I) screening format for the federal government as taught by the Department of Defense Polygraph Institute.

B. Background.

The R/I technique was developed in large part by Leonard Keeler, and subsequently adopted by agencies of the federal government.

C. Pretest Phase.

1. Question Review. During the pretest interview, the relevant, irrelevant, and overall truth questions, if utilized, are reviewed with the examinee. The exact wording of the math question is not reviewed. The following sequence is used in introducing the questions.

Relevant (R)
Irrelevant (I)
Overall truth (OT)
Math (M)

2. Questions Utilized in the R/I.

a. Relevant Question. This question pertains directly to the matter under investigation or to the issue(s) for which the examinee is being tested. In R/I screening examinations, all relevant questions are considered primary relevant questions. Examples are:

Have you ever engaged in espionage against the United States?
Have you ever been involved in subversive activity?
Have you ever provided classified information to an unauthorized person?

b. Irrelevant Questions. In R/I formats, the irrelevant question is designed to allow the orienting response to habituate before a relevant question is asked, and as well, has special applications in the R/I question format. They are designed to be neutral, but should appear to be meaningful to the examinee. Irrelevant questions should be non-emotion evoking, and unrelated to the issue under investigation. Several irrelevant questions may be reviewed and used as

needed. Irrelevant questions are not scored against relevant test questions. Examples are:

Is today Friday?
Are you now in Alabama?
Do you live in MD?

c. Overall Truth Question. This is an optional question which may be utilized in an R/I question format. It is similar to the sacrifice relevant question in comparison question formats. It is intended to elicit a physiological response which may be indicative of the examinee's overall response capability. This question may be asked near the beginning and/or at the end of a PDD chart. Examples are:

Do you intend to answer truthfully all of the questions on this test?
Have you truthfully answered all of the questions on this test?

d. Stimulus Question. This question is an optional question which may be utilized to determine the examinee's overall capacity for response. It is only used when the examinee exhibits a consistent lack of response. The stimulus question taught by DoDPI in the R/I format is the math question. The examinee is told that a math question may be asked during the examination. Examples are:

Does 10 + 9 = 19?
Does 7 + 5 = 12?

D. Data Collection.

1. Question Sequence. The initial question sequence, as well as subsequent question sequencing, is at the discretion of the examiner. The examiner has the flexibility to utilize the most appropriate question order based upon the demonstrated physiological responses of the examinee. Questions may be repeated during a chart when using an R/I format. An example of an initial question sequence is as follows:

I Is today Friday?
I Are you now in Alabama?
R Have you ever been involved in a serious crime?
R Have you deliberately falsified any part of your security forms?
R Have you been involved in illegal drugs during the past five years?
I Do you live in Maryland?
R Have you deliberately falsified any part of your security forms?
R Have you ever been involved in a serious crime?

R Have you been involved in illegal drugs during the past five years?
OT Have you truthfully answered all of the questions on this test?

2. Question Rotation. The order of questions on subsequent charts is at the discretion of the examiner based upon the responses of the examinee and format procedures.

3. Question Format Procedures.

a. Acquaintance Test (ACQT). This test is optional. If an ACQT is conducted it should be conducted as the first chart.

b. Question Interval. Each chart will normally consist of no more than 12 questions. A question spacing of 20 to 25 seconds from onset of applied stimulus should be maintained throughout the examination. Irrelevant questions may be inserted as needed.

c. Pattern Avoidance. The test must be conducted in an unpredictable manner that is consistent with the following R/I format rules. Subsequent charts should start with a different irrelevant question. The ratio of relevant questions to irrelevant questions should be varied. Never ask more than three relevant questions in a row. Pattern avoidance can be accomplished by varying the wording of questions to require a yes or no answer.

d. Number of Charts. A minimum of two charts and no more than four charts are conducted for each series of an R/I examination. No more than six artifact-free askings of a relevant question should routinely be collected during a series. If additional askings are necessary, an additional series should be constructed utilizing a different testing format or an R/I format with new relevant questions. A phase may be made up of multiple series.

e. Breakdown Test. A breakdown test is conducted to verify an examinee's statements regarding an issue after specific responses to one question have been observed during an R/I screening examination. The issue is separated from the remaining test questions, and a breakdown test is conducted. To devise appropriate breakdown questions, divide the issue into its logical components and design a question to cover each key area. The breakdown test can be conducted using an R/I format or a comparison question format.

f. Clearing Test. The clearing test should be utilized in the R/I format after a breakdown test. The clearing test is made up of the remaining relevant

test questions that were not covered in the breakdown test from the original series. The test will not contain any questions dealing with the issue covered in the breakdown. The relevant questions asked on the clearing test must be asked a minimum of two times with no artifacts or significant physiological responses for an NSR decision. On occasion, it may be appropriate to conduct the clearing chart prior to the breakdown examination. This determination will be made by the examiner in coordination with individual agency policies and procedures.

g. Askings of Relevant Questions. There must be at least two artifact-free examples of each relevant question in order for them to be evaluated. Each test should be made up of no more than five relevant questions. Relevant questions may be asked two times during a chart. No more than three relevant questions should be asked consecutively on a chart.

h. Askings of Irrelevant Questions. These questions are placed at the beginning of each chart, and are interspersed between the relevant questions throughout the chart as needed. Irrelevant questions should be asked after any relevant question that results in a lengthy response.

4. Conduct of an Acquaintance Test (ACQT). The ACQT is conducted, in part, to acquaint the examinee with PDD procedures. The ACQT is optional with this question format. The known solution ACQT is the only ACQT taught by DoDPI.

E. Test Data Analysis.

1. Global Analysis. The evaluation procedure utilized in the federal government for R/I screening examinations is the global test data analysis procedure. This evaluation process requires the examiner to evaluate each PDD chart as a whole, and does not employ the use of numerical values. Since there are no comparison questions in this technique, the presence or absence of responses to a question is compared with the rest of the chart tracings in their entirety. Only data that is timely and consistent with the applied stimulus and free of artifacts and noise on the signal of interest is considered.

2. Opinion Rendering criteria.

a. Significant Response (SR). The examinee has exhibited consistent, timely, significant responses to at least one of the relevant questions.

b. No Significant Response (NSR). The charts revealed that the subject failed to exhibit consistent, timely, and significant responses to the relevant questions.

c. No Opinion (NO). The examiner cannot render an opinion based upon the physiological responses to the relevant questions.

3. Rank Order Scoring System (ROSS). The ROSS ranks the questions on the charts from greatest to least responsiveness. In ROSS, each physiological parameter, i.e., respiration, electrodermal, and cardiovascular, is evaluated separately. ROSS provides the examiner with a cumulative picture of the consistent, significant and timely responses on the PDD charts. This method of evaluation is used exclusively to evaluate the R/I questioning formats.

F. References.

1. Argenbright, F. A. (1997). Validation of R/I screening format. Unpublished manuscript.

2. Barland, G. H., Honts, C. R., & Barger, S. D. (1989). Studies of the accuracy of security screening polygraph examination (Rep. No. DoDPI89-R-0001), Fort McClellan, Alabama: Department of Defense Polygraph Institute.

3. Correa, E. I. & Adams, H. E. (1981). The validity of pre-employment polygraph examination and the effects of motivation. Polygraph 10, 143-155.

Chapter XIII

Specific Issue Relevant/Irrelevant Test

A. Scope.

This guide establishes essential elements for the conduct of the specific issue relevant/irrelevant (R/I) format for the federal government as taught by the Department of Defense Polygraph Institute.

B. Background.

The specific issue R/I technique was developed in large part by Leonard Keeler and was subsequently adopted by various agencies of the federal government.

C. Pretest Phase.

1. Question Review. During the pretest interview, all questions will be reviewed with the examinee prior to the collection of charts. The order of review is the examiner's option, but the questions should be reviewed in groups, i.e., relevant questions, irrelevant questions, and overall truth questions. A recommended order of review is:

Relevant (R)
Irrelevant (I)
Overall Truth (OT)
Stimulus (S)

2. Questions Utilized in the specific issue R/I.

a. Relevant Question. This question pertains directly to the matter under investigation or to the issue(s) for which the examinee is being tested.

1) Primary Relevant. This question tests the possible direct involvement of the examinee. An example is:

Did you shoot that man?
Did you steal any of that money?

2) Secondary Relevant. This question tests the examinee's possible indirect involvement in the offense under investigation. This involves matters such as evidence connecting, guilty knowledge, or secondary involvement, for example:

Did you help steal that car?
Do you know how that car was disposed of?
Do you know for sure who stole that car?
Did you plan with anyone to steal that car?

b. Irrelevant question. An irrelevant question is the first question asked during the data collection phase. It may also be asked in other positions on the chart. It is designed to allow the orienting response to habituate before a relevant question is asked, and can be used to establish homeostasis when an artifact occurs on the chart. Irrelevant questions should be unrelated to the issue being tested. Irrelevant questions are not scored. Several irrelevant questions may be reviewed and used as needed. Examples are:

Are you now in Alabama?
Are you sometimes called Tom?

c. Overall Truth Question. This is an optional question which may be utilized in an R/I question format. It is similar to the sacrifice relevant question in comparison question formats. It is intended to elicit a physiological response which may be indicative of the examinee's overall response capability. This question may be asked near the beginning and/or at the end of a PDD chart. Examples are:

Do you intend to answer truthfully to all of the questions on this test?
Have you truthfully answered all of the questions on this test?

d. Specific Issue R/I Stimulus Question. This question is utilized to determine the examinee's overall capacity for response. It is primarily used when the examinee exhibits a consistent lack of response. When utilized in this R/I format, the stimulus question can be directed at specific thoughts, beliefs, or actions of the examinee as it relates to the issue under investigation. Responses to the applied stimulus question will not be utilized as comparison questions. Examples are:

Do you feel threatened by this test?
When you were accused of stealing, were you mad?

D. Data Collection Phase.

1. Question Sequence. Question sequence in the specific issue R/I format is flexible and the examiner has the choice in the manner in which the charts are collected. The following is one example:

I Is today Monday?
I Is this the month of October?
OT Have you deliberately withheld any pertinent information from me during this interview?
R Did you receive anything of benefit from that registered pouch?
R Did you remove any of the contents of that pouch?
I Are you now in the city of Birmingham?
R Did you steal that pouch?
R Do you know where any of the contents of that pouch are now?
OT Have you lied to any question on this test?
I Is today Monday?

2. Question Rotation. The examiner may collect three or four charts with each relevant question being asked once on each chart, or two charts containing a combined total of at least three askings of each relevant question. There should never be fewer than three undistorted askings of each relevant question. Each chart must contain all relevant questions asked at least one time. Relevant questions may be repeated on individual charts.

3. Test Format Operations.

a. If an acquaintance test is utilized, it will be the first chart collected.

b. No more than three relevant questions will be asked in sequence. Do not repeat any question back to back.

c. The first operational chart begins with at least two irrelevant questions or one irrelevant question and one overall truth question.

d. The overall truth questions will be asked prior to the first relevant question, or after the last relevant has been asked on the chart.

e. The most responsive relevant question on the previous chart(s) should not be the first relevant question asked on the next chart.

f. At least three and no more than five relevant questions will be asked during a series.

g. Only questions addressing elements associated with the issue being tested can be asked. Relevant questions covering different crimes are not permitted.

4. Conduct of an Acquaintance Test (ACQT). The ACQT is conducted, in part, to acquaint the examinee with PDD procedures. The ACQT is optional with this question format. The known solution ACQT is the only ACQT taught by DoDPI.

E. Test Data Analysis.

1. Global Analysis. This evaluation process requires the examiner to evaluate each PDD chart as a whole. This approach does not employ the use of numerical values. Since there are no comparison questions in this technique, the presence or absence of response to a question is compared with the rest of the chart tracings in their entirety. Only data that is timely and consistent with the applied stimulus and free of artifacts and noise on the signal of interest is considered.

2. Opinion Rendering criteria.

a. Deception Indicated (DI). The subject has exhibited consistent, timely, and significant responses to one or more of the relevant questions the majority of times that it was asked.

b. No Deception Indicated (NDI). The charts revealed that the subject failed to exhibit consistent, timely, and significant responses to the relevant questions.

c. No Opinion (NO). If it is not DI or NDI, it is NO with the exception of administrative opinions.

F. Reference Documents.

1. Bersh P. J. (1969). A validation study of polygraph examiner judgments. Journal of Applied Psychology, 53, 399-403.

2. Blum, R. H., & Osterloh, W. (1968). The polygraph examination as a means for detecting truth and falsehood in stories presented by police informants. The Journal of Criminal Law, Criminology, and Police Science, 59, 133-137.

3. Crowe, M. J., Peters, R. D., Suarez, Y., & Claeren, L. (1988). The research project to compare the relative validity of the positive control and the relevant-irrelevant polygraph techniques (Tech. Rep No. MDA 904-87-2293). Jacksonville, AL: Jacksonville State University Psychology Department.

4. Crowe, M. J., Chimarys, M., & Schwartz, J. (1995). The GQT polygraph test: Scoring and validity. Polygraph, 24, 234-236.

Chapter XIV

Test for Espionage and Sabotage

A. Scope.

This guide establishes essential elements for the conduct of the test for espionage and sabotage (TES) question format for the federal government as taught by the Department of Defense Polygraph Institute (DoDPI).

B. Background.

The TES was designed and researched by the DoDPI Research Division Staff and subsequently adopted by DoDPI for use in counterintelligence screening PDD (CSP) examinations.

C. Pretest Phase.

1. Question Review. During the pretest interview, only the questions for the sub-test about to be tested are reviewed with the examinee prior to the collection of charts. The following sequence is used in introducing the questions:

Sacrifice Relevant (SR)
Relevant (R1 & R2, or R3 & R4, or R5 & R6 if utilized)
Directed Lie Comparison (C1 & C2)
Irrelevant (I1 & I2)

2. Questions Utilized in the TES.

a. Relevant Question. This question pertains directly to the issue(s) being tested. The relevant question tests the possible direct involvement of the examinee.

b. Directed Lie Comparison (DLC) Question. The DLC question is a specialized comparison question. A properly constructed DLC question involves a minor transgression which should have some personal significance to the examinee. Upon acknowledging having committed such a transgression, the examinee is directed to lie when asked that particular question on the test. The question is separated from the relevant issue by category. An example is:

Did you ever commit a minor traffic violation?

c. Sacrifice Relevant Question. This is the first question of the TES format that refers to the relevant issues, and it prepares the examinee for the introduction of the relevant questions. Examples are:

Do you intend to answer the security questions truthfully?
Regarding the security questions, do you intend to answer truthfully?

d. Irrelevant Question. An irrelevant question is the first question asked during the data collection phase. It may also be asked in other positions on the chart. It is designed to allow the orienting response to habituate before a scoreable question is asked, and can be used to establish homeostasis when an artifact occurs on the chart. Irrelevant questions should be unrelated to the issue being tested. Irrelevant questions are not scored. Several irrelevant questions may be reviewed and used as needed. Examples are:

Are you now in Alabama?
Are you sometimes called Tom?

D. Data Collection.

1. Sub-Tests. The TES was originally designed to test four relevant questions. The format can be expanded to test six relevant questions. The TES consists of two sub-tests, A and B, when four relevant questions are tested, and three sub-tests, A, B and C, when six relevant questions are tested.

2. Question Sequence. Sub-tests A, B and C are sequenced the same. Relevant questions #1 and #2 are asked on sub-test A. Relevant questions #3 and #4 are asked on sub-test B, and relevant questions #5 and #6 are asked on sub-test C. If desired, the DLC and irrelevant questions may be different for each sub-test. The question sequence for sub-test A is as follows:

I1	Irrelevant
I2	Irrelevant
SR	Sacrifice relevant
1C1	First asking of DLC #1
1R1	First asking of relevant #1
1R2	First asking of relevant #2
1C2	First asking of DLC #2
2R1	Second asking of relevant #1
2R2	Second asking of relevant #2
2C1	Second asking of DLC #1
3R1	Third asking of relevant #1
3R2	Third asking of relevant #2
2C2	Second asking of DLC #2

3. Question Format Procedures. Test procedures require a minimum of three askings of each relevant question. The physiological tracings should be free of artifacts in at least two of the three component tracings at each asking of

the relevant questions, and able to be evaluated against at least one of the bracketing comparison questions. If after three askings of the relevant questions, artifacts prevent scoring of one or both of the relevant questions, an additional asking of both relevant questions for that sub-test will be conducted. One of the following procedures will be used to accomplish this:

a. If the examiner realizes that a fourth asking is necessary prior to the completion of the chart, a fourth asking may be collected on the same chart. The following questions are added after 2C2:

4R1	Fourth asking of relevant #1
4R2	Fourth asking of relevant #2
3C1	Third asking of DLC #1

b. If the examiner does not realize that a fourth asking is necessary until the chart has been collected, a short chart may be collected. The format for a short chart is as follows:

I1	Irrelevant
I2	Irrelevant
SR	Sacrifice relevant
3C1	Third asking of DLC #1
4R1	Fourth asking of relevant #1
4R2	Fourth asking of relevant #2
3C2	Third asking of DLC #2

c. Each sub-test, A, B, and C, is administered and resolved as an individual test. After the resolution of a sub-test, the questions for the next sub-test are introduced and tested.

d. Either sub-test A, B, or C, may be administered first. Regardless of the order in which the sub-tests are administered, a subsequent sub-test should not be administered if the previous sub-test has not been resolved.

e. When a sub-test results in a decision of significant response (SR), and subsequent clearing sub-tests continue to yield SR decisions, no more than four (4) sub-tests may be administered during any 24 hour period. A delay of 48 hours is recommended before continuing testing.

4. Conduct of an Acquaintance Test (ACQT). The ACQT will be collected as the first chart of this examination. It is conducted, in part, to acquaint the examinee with PDD procedures. The known solution ACQT is the only ACQT taught by DoDPI.

E. Test Data Analysis.

1. Numerical Analysis. TES PDD charts are analyzed utilizing the seven-position scale.

2. No Split Opinions. An examinee is SR, NSR or NO to the test, not to a question.

3. Administrative Opinions. These opinions reflect the results of a series or an examination that are not based upon physiological responses to the applied stimuli, such as when the examinee terminates an examination or is practicing countermeasures. In such instances, administrative opinions such as inconclusive, purposeful non-cooperation, etc., are appropriate.

4. Spot Analysis. The seven-position numerical evaluation system analyzes the physiological responses recorded on the chart by comparing the relevant questions to the largest response by component tracing of the DLC questions as follows:

1R1 and 1R2 compared to 1C1 or 1C2
2R1 and 2R2 compared to 1C2 or 2C1
3R1 and 3R2 compared to 2C1 or 2C2
When a fourth asking is required:
4R1 and 4R2 compared to 2C2 or 3C1
When a short test is required:
4R1 and 4R2 compared to 3C1 or 3C2

5. Test Data Analysis of a Fourth Asking. When a fourth asking of the relevant questions is necessary, only the relevant question(s) that could not be evaluated due to artifacts will be scored.

F. Opinion Rendering Criteria.

1. SR. A minus three (-3) or less in any overall vertical spot, or an overall horizontal total score of minus four (-4).

2. NSR. At least a plus one (+1) at each overall vertical spot, and an overall horizontal total score of at least plus four (+4).

3. NO. If it is not SR or NSR, it is NO with the exception of administrative opinions.

G. References.

1. Department of Defense Polygraph Institute Research Division Staff (in press). Physiological detection of deception accuracy rates obtained using the test for espionage and sabotage (Rep. No. DoDPI94-R-009). Fort McClellan, AL: Department of Defense Polygraph Institute.

2. Department of Defense Polygraph Institute Research Division Staff (1995). A comparison of psychophysiological detection of deception accuracy rates obtained using the counterintelligence scope polygraph and the test for espionage and sabotage question formats (Rep. No. DoDPI194-R-0008). Fort McClellan, AL: Department of Defense Polygraph Institute.

3. Department of Defense Polygraph Institute (1998). TES administration manual. Fort McClellan, AL: Department of Defense Polygraph Institute.

4. Honts, C. R., & Raskin, D. C., (l988). A field study of the validity of the directed lie control question. Journal of Police Science and Administration, 16, 56-61.

Chapter XV

Law Enforcement Applicant Screening

A. Scope.

This guide establishes essential elements for the conduct of law enforcement applicant screening (LEAS) formats as utilized by Agencies within the federal government.

B. Background.

LEAS formats are a specific application of the comparison test formats (CTF). LEAS formats were developed by federal agencies as the primary personnel screening technique to test applicants for employment in sensitive law enforcement positions. LEAS formats address national security, integrity and suitability issues.

C. Pretest Phase.

1. Order for Question Review. During the pretest interview, all questions are reviewed with the examinee prior to the collection of charts. The following sequence should be used in introducing questions:

Sacrifice Relevant (SR)
Relevant (R)
Comparison (C)
Irrelevant (I)

2. Questions Utilized in LEAS. The following question types are generally used in LEAS applications.

a. Relevant. This question pertains directly to the issues being tested. The relevant question tests the possible direct involvement of the examinee. Examples are:

Have you ever had any unauthorized foreign contacts?
Have you ever sold any illegal drugs?

b. Probable Lie Comparison (PLC) Questions. This question is designed to be a probable lie for the examinee. The PLC question should be similar in nature but unrelated to the issues being tested. The comparison question should be separated from the relevant issues by either time, place or category. The PLC question should be broad in scope and time so that it captures as many of the examinee's past life experiences as possible. An example is:

Prior to your 18th birthday, did you ever lie to anyone who trusted you?

c. Sacrifice Relevant Question. This is the first question of the format that refers to the relevant issues, and it prepares the examinee for the introduction of the relevant questions. The question addresses the relevant issue and should not exceed the scope of the relevant issue. An example is:

In connection with your application for employment, do you intend to answer each question truthfully?

d. Irrelevant Question. An irrelevant question is the first question asked during the data collection phase. It may also be asked in other positions on the chart. It is used to allow the orienting response to habituate, and it can be used to reestablish baseline when an artifact occurs on the chart. Irrelevant questions should be unrelated to the issues being tested. Irrelevant questions are not scored. Several irrelevant questions may be reviewed and used as needed. An example is:

Are you now in Alabama?

D. Data Collection Phase.

1. Question Format. The test format should begin with an irrelevant question. Irrelevant questions may be inserted into each chart as needed. A sacrifice relevant question will be included in the test format. Two to five relevant questions may be utilized.

2. Question Sequence. With the possible exception of irrelevant questions, all questions reviewed during the pretest phase of LEAS examinations will be asked during the data collection phase. However, the exact sequence in which the questions are to be asked in the data collection phase is not revealed.

a. An example of a possible question sequence for the national security examination is:

I SR C R C R C R C R C

b. An example of a possible question sequence for the integrity and suitability examination is:

I SR C R C R C R C

3. Data Collection Phase. After the first chart, relevant and comparison questions may be rotated, or a mixed series may be utilized. At least one of the subsequent charts must be a mixed series. After the first chart, subsequent

charts should be constructed so that the relevant question displaying the greatest physiological responses is adjacent to the comparison question(s) with the greatest physiological response. Each relevant question should be bracketed by comparison questions in at least one chart of each series.

4. Chart Requirements. In most instances, three askings of each relevant question is appropriate. An additional asking of all questions, i.e., a fourth chart, is only authorized if an artifact occurred which precluded a conclusive opinion from being rendered. If after three askings a conclusive opinion can be rendered from those components not affected by artifacts, the test is complete. The numerical total required for a conclusive opinion when four charts are conducted remains the same as for a three-chart series. Under no circumstances is a fifth asking (chart) authorized.

5. Conduct of Acquaintance Test (ACQT). The ACQT may be collected as the first chart of this examination. It is conducted, in part, to acquaint the examinee with the PDD procedures. The known solution ACQT is the only ACQT taught by DoDPI.

E. Test Data Analysis.

1. Numerical Analysis. The seven-position scale is normally utilized to evaluate test data.

2. Spot Analysis. Relevant questions are grouped together in spots. The examiner monitors and evaluates the examinee's responses in these spots.

3. Test Data Analysis Procedures. When comparing relevant and comparison questions, each component tracing will be reviewed and compared independently. The greatest physiological response in the comparison question(s) will be compared to the adjacent relevant question(s).

4. Opinion Rendering Criteria.

a. Significant Response (SR). To render an opinion of SR, the numerical score must be minus three (-3) or less in any overall vertical spot. There is no overall horizontal spot total utilized to render an opinion, as is the case in the ZCT.

b. No Significant Response (NSR). To render an opinion of NSR, the numerical score must be plus three (+3) or greater in every overall vertical spot when using a seven-position scale.

c. No Opinion (NO). If based upon physiological responses to the applied stimuli an opinion of SR or NSR cannot be rendered, the opinion is NO. When appropriate, an administrative opinion should be rendered.

5. Administrative Opinions. These opinions reflect the results of a series or an examination that are not based upon physiological responses to the applied stimuli, such as when the examinee terminates an examination or is practicing countermeasures. In such instances, administrative opinions such as inconclusive, purposeful non-cooperation, etc., are appropriate.

F. References.

The following research applies to this issue. Additional validations studies are pending.

1. Barland, G. H., Honts, C. R., & Barger, S. D. (1989). Studies of the accuracy of security screening polygraph examination (Rep. No. DoDPI89-R-001). Fort McClellan, Alabama: Department of Defense Polygraph Institute.

2. Barland, G. H., Honts, C. R., & Barger, S. D. (1990). The detection of deception for multiple issues (Project No. DoDPI89-P0005). Fort McClellan, AL: Department of Defense Polygraph Institute.

3. Meesig, R. T., & Horvath, F. S. (1993). Changes in usage, practices and policies in pre-employment polygraph testing in law enforcement agencies in the United States 1964-1991. Polygraph, 22, 1-16.

4. Yankee, W. J., (1990). Position statement pertaining to control question techniques. Fort McClellan, AL: Department of Defense Polygraph Institute.

5. Schofield, D. L. (1993). Hiring standards: Ensuring fitness for duty. Polygraph, 22, 323-331.

Glossary of Terms

The terms utilized in this document are designed for the policies and procedures as applied within the federal government.

Acquaintance Test (ACQT) - A questioning format which is a form of the known solution peak of tension test. It is utilized to demonstrate and acquaint the examinee with the basic concepts of the PDD examination. The primary purpose of this test is to assure the examinee that the PDD process is effective.

Administrative Opinion - Opinions that reflect the results of a series or an examination that are not based upon physiological responses to the applied stimuli, such as when the examinee terminates an examination or when the examinee is practicing countermeasures. In these instances, administrative opinions such as inconclusive, purposeful non-cooperation, etc., are appropriate.

Artifact - A change in a physiological pattern not attributable to a stimulus question or homeostatic change.

Breakdown Test - A test conducted to verify an examinee's statement regarding an issue after specific responses to one question have been observed and recorded during a screening examination. The issue is separated from the remaining test questions and a breakdown test is conducted. To devise appropriate breakdown questions, divide the issue into its logical components and design a question to cover each key area. The breakdown test can be conducted using an R/I format, or a comparison question format. If the results of the breakdown test clear the issue for which the test was conducted, a clearing test should be conducted.

Bracketed Relevant Questions - The procedure wherein comparison questions are placed adjacent to or in close proximity to a relevant question for the purpose of comparing physiological responses.

Cardiovascular Tracing - The display of physiological patterns of the subject's relative blood volume and pulse rate. The cardiograph component records this activity. The criteria used to evaluate this component are: change in baseline, change in amplitude and change in rate.

Certification Process - Personnel authorized to conduct PDD examinations will be certified by each agency. The agency certifies that the examiner has met and maintains all qualifications and training requirements. Only fully certified examiners, examiners being recertified, or intern examiners under the supervision of a certified examiner are authorized to conduct PDD examinations.

Chart - A graphic representation containing selected physiological data generated by an examinee during the testing phase of a PDD examination.

Clearing Test - A test which is utilized in the R/I format after a breakdown test. The clearing test is made up of the remaining relevant test questions that were not covered in the breakdown test. The test will not contain any questions dealing with the issue covered in the breakdown. The relevant questions asked on the clearing test must be asked a minimum of two times with no artifacts or significant physiological responses for an NSR decision.

Comparison Question - A question which is designed to produce a physiological response. The physiological responses of the comparison questions are compared to the physiological responses of the relevant questions. The probable and directed lie are the two types of comparison questions utilized within the federal government.

Counterintelligence Scope PDD Examination - A PDD screening examination administered to detect and deter espionage, security breaches, sabotage, or other acts against the federal government.

Deception Indicated (DI) - An opinion which indicates that an analysis of the PDD charts revealed the physiological responses to the relevant question(s) were indicative of deception.

Directed Lie Comparison (DLC) Question - A specialized comparison question addressing a minor transgression to which most people will readily admit. Upon acknowledging having committed such a transgression, the examinee is directed to lie when asked that question on the test.

Electrodermal Tracing - The display of physiological patterns of either skin resistance or skin conductance obtained through exosomatic recording with a galvanograph component. The criteria considered when evaluating this component are change in amplitude, complexity of the response, and duration of the response.

Examiner Internship - Upon successful completion of the PDD training course, each candidate will serve an internship. This internship will be a minimum of six months and usually will not exceed twelve months. During this time, the intern will conduct at least twenty-five (25) PDD examinations under the direct supervision and guidance of a senior certified examiner.

Expanded Scope PDD Examination - A personnel security screening PDD examination whose relevant questions usually address involvement in serious crime, illegal drugs, falsification of forms, as well as the counterintelligence scope questions.

Forensic Psychophysiological Detection of Deception (PDD) - The science that deals with the relationship and applications of PDD tests within the legal system. It is the academic discipline that provides the student, the practitioner, and the researcher with the theoretical and applied psychological, physiological, and psychophysiological fundamentals for a thorough understanding of PDD tests, and the skills and qualifications for conducting PDD examinations. The modifier "forensic" delineates and delimits this discipline from the broader discipline of psychophysiology.

Global Test Data Analysis - A system of rendering an opinion by viewing the PDD chart as a whole, as opposed to making systematic comparisons among questions. This approach does not employ the use of numerical values. This method is used primarily in the relevant/irrelevant and peak of tension question formats.

Homeostasis - A complex interactive regulatory system by which the body strives to maintain a state of internal equilibrium.

Homeostatic Change - A deviation in a tracing attributable to a physiological phenomenon occurring as a compensatory action after a response or an artifact.

Irrelevant Question - A question which is designed to be non-emotion evoking and unrelated to the issue being tested.

Math Question - A stimulus question that involves the unrehearsed presentation of a simple arithmetic problem.

No Deception Indicated (NDI) - An opinion which indicates that an analysis of the PDD charts revealed the physiological responses to the relevant question(s) were not indicative of deception.

No Opinion (NO) - An evaluation which indicates the examiner cannot render an opinion based upon the physiological data on the charts.

No Significant Response (NSR) - This opinion indicates that the analysis of the PDD charts revealed no consistent, significant, timely, physiological responses to the relevant questions in personnel screening, source validation, or POT tests.

Overall Truth Question - An optional question which may be utilized in an R/I question format. It is similar to the sacrifice relevant question in the comparison question format. It is intended to elicit a physiological response which may be indicative of the examinee's overall response capability.

Personnel Screening PDD Examination - A PDD examination conducted to aid in determining an individual's eligibility for initial or continued access to designated programs, or an examination conducted to aid in determining an individual's eligibility for initial access to sensitive law enforcement positions.

Polygraph Instrument - A diagnostic instrument used during a PDD examination which is capable of monitoring, recording and/or measuring at a minimum, respiratory, electrodermal, and cardiovascular activity as a response to verbal or visual stimuli.

Probable Lie Comparison (PLC) Question - A question designed to be a probable lie for the examinee. The DLC question should be similar in nature but unrelated to the specific crime or issue being tested. The question should be separated from the relevant issue by either time, place or category. The comparison question should use the same action verb or similar in nature action verb as that of the relevant issue. A comparison question should be broad in scope and time so that it captures as many of the examinee's past life experiences as possible.

Psychological Set - A specific application of set theory regarding the focus of attentional resources and the preparation of responses. In psychology, set is defined as a temporary orientation or state of preparedness toward a particular stimulus.

Psychophysiological Detection of Deception (PDD) - The academic discipline that provides the student, the practitioner, and the researcher with the theoretical and applied psychological, physiological, and psychophysiological fundamentals for a thorough understanding of PDD tests, and the skills and qualifications for conducting PDD examinations.

PDD Examination - A process that encompasses all activities that take place between a PDD examiner and an examinee during a specific series of interactions. These interactions may include the pretest interview, the use of the polygraph instrument to collect physiological data from the examinee while presenting a series of tests, the test data analysis phase, and the post-test phase, which may include the interrogation of the examinee.

PDD Examiner - Someone who has successfully completed formal education and training in conducting PDD examinations and is certified by their agency to conduct such examinations.

PDD File - The file in which all PDD reports, technical documents, charts and related documents should be maintained until properly disposed.

PDD Report - A PDD document that may contain identifying data of the examinee, a synopsis of the basis for which the examination was conducted, the relevant questions utilized, and the examiner's conclusion.

PDD Series - The collection of the required PDD chart(s) for a particular testing format.

Rank Order Scoring System (ROSS) - A scoring system which ranks the questions on the charts from greatest to least responsiveness. In ROSS, each physiological parameter, i.e., respiration, electrodermal, and cardiovascular, is evaluated separately. ROSS provides the examiner with a cumulative picture of the consistent, significant and timely responses on the PDD charts. This method of evaluation is used exclusively to evaluate relevant/irrelevant questioning formats.

Relevant Question - A question that pertains directly to the matter under investigation or to the issue(s) for which the examinee is being tested.

Respiratory Tracing - The display of physiological patterns indicative of the examinee's breathing activity as recorded by the pneumograph component. Evaluation criteria considered are changes in amplitude, changes in rate, changes in baseline, loss of baseline and apnea.

Response - The physiological change to the applied stimulus which can either be phasic or tonic.

Sacrifice Relevant Question - A question that prepares the examinee for the introduction of the relevant questions.

Significant Response (SR) - An opinion which indicates that the analysis of the PDD charts revealed consistent, significant, timely physiological responses to the relevant questions in personnel screening, source validation, or POT tests.

Specific Issue PDD Examination - A PDD examination conducted to resolve a specific issue, e.g., criminal, espionage, sabotage, or source validation.

Spot Analysis - The procedure wherein each component tracing is separately evaluated by comparing the response of a relevant question to the response of a comparison question.

Stimulus Question - A question which may be utilized in an R/I question format to determine the examinee's overall capacity for response.

Symptomatic Question - A question which is designed to test for an outside issue that could be more significant for an examinee than the issues being tested.

Technical (Test) Questions - A specifically designed question posed to an examinee during the data collection phase of a PDD examination. Test questions are designed to maximize differences in the elicited response patterns between truthful and deceptive examinees. There are several types of test questions used within PDD.

Test Data - The signal of interest which may consist of unwanted noise, artifact, homeostatic change, or psychophysiological responses of the examinee in response to stimuli.

Test Data Analysis - The analysis of the psychophysiological responses recorded on the PDD charts. Only data that is timely with the applied stimulus and free of artifacts and unwanted noise on the signal can be evaluated.