

**U.S. Customs and Border Protection  
Office of Internal Affairs  
Credibility Assessment Division**

**Policy and Reference Manual  
With Appendices from DACA and Federal Standards**



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## **CBP POLYGRAPH PROCEDURES**

### **I. CONCEPT OF THE POLYGRAPH PROGRAM**

- A. The polygraph instrument is designed to record an individual's respiration, electrodermal activity, blood volume, and heart rate. It records changes and variations in these factors, which may occur during the asking of certain questions. The degree and nature of the physiological changes are the criteria from which deception is inferred. The theory of detection of deception is predicated upon the principle that individuals usually have certain physiological reactions when practicing deception, particularly if the truth might produce a serious or undesirable effect on their personal welfare. The reactions are primarily involuntary and generally cannot be controlled.
- B. The polygraph instrument records certain physiological manifestations, which may accompany these reactions. After a thorough review of these recordings, the polygraph examiner will make an inference and can render one of four opinions:
1. The examinee was truthful when answering the relevant questions.
  2. The examinee was deceptive when answering the relevant questions.
  3. Physiological manifestations were either absent, erratic, inconsistent or contained anomalies that precluded a conclusive determination. In this instance the test result will be identified as Inconclusive or No Opinion.
  4. The examination protocol was terminated prior to completion, resulting in a No Opinion determination.
- C. The polygraph is a scientific, diagnostic instrument that graphically records physiological changes, which may take place in a person at a specific time. In the hands of a trained examiner, it is reliable in detecting deception being practiced by a subject regarding a specific issue. However, the goal of polygraph is not merely detection of deception, but also the discovery of truth concerning a specific matter. The detection of deception is only part of the procedure. Examinations are considered completely successful when the final outcome is full disclosure of the truth.
- D. The polygraph instrument has been accepted by Customs and Border Protection, Office of Internal Affairs (CBP-IA) as a valuable investigative tool, which can be utilized in all cases under its jurisdiction and at the request of other Federal agencies as well as State and local law enforcement in certain cases. The proper application of polygraph within our investigative mission can result in the successful resolution of many cases with substantial savings of time, equipment and money. To this end, and with a view toward establishing strict rules of professional conduct, this CBP-IA Polygraph Procedures Manual was created.

- E. The CBP-IA utilizes polygraph as an investigative tool to assist case agents in accomplishing their assigned duties. Polygraph testing should not be used to replace proper and thorough investigations. All reasonable efforts should be made to conduct a thorough investigation prior to employing the polygraph. Within CBP, an exception to this policy may be applied to applicant testing. When an applicant is favorably adjudicated following successful completion of a standard applicant testing protocol, the Personnel Security Division may elect to hire and send the applicant to law enforcement training prior to the completion of the required CBP applicant background investigation.
- F. Polygraph examinations will not be administered as a matter of routine in any investigative action. They will only be administered by certified CBP-IA polygraph examiners following approval by the Assistant Commissioner, Office of Internal Affairs, or designee. Day-to-day authority to process and approve polygraph examination requests has been delegated to the Director, Credibility Assessment Division (CAD), or designee.

## II. CASE APPLICATION

### A. Customs and Border Protection Investigations

1. Polygraph examinations may be authorized for all cases investigated by CBP consistent with the provisions set forth in this manual.
2. The utilization of polygraph is encouraged and will be made available to all Offices, Investigative Field Elements and Headquarters Divisions within the CBP.

### B. Investigative Operations Division (IOD), Office of Internal Affairs

1. All IOD requests for polygraph assistance must be coordinated through the Assistant Commissioner, Office of Internal Affairs, or designee.
2. IOD examinations will be assigned a file number by the Credibility Assessment Division (CAD). When applicable, the CAD Director will inform the Special Agent in Charge (SAIC) of the IOD office geographically controlling the location of the examination.

**C. Personnel Screening Examination** - The Office of Personnel Management (OPM) authorizes the CBP-IA to use polygraph for employment screening and personnel investigations for designated positions within CBP and the Department of Homeland Security (DHS). The Director, CAD or designee, and the Chief, Personnel Security Division (PSD) or designee, will maintain a list of all CBP positions where polygraph screening may be applied.

## **D. Other Agency Investigations**

3. CBP-IA polygraph examiners may be authorized to conduct examinations requested by other Federal, State and local law enforcement or intelligence agencies. However, these requests must be coordinated through the SAIC of the office controlling the geographical area of the requesting agency. The SAIC of the controlling office, or designee, should contact the CAD Director, or designee, on behalf of the requesting agency. The ensuing polygraph request may be by telephone or in writing. Authorization of external agency polygraph requests will be granted by the Assistant Commissioner, Office of Internal Affairs or the CAD Director, or designee.
4. When a valid Memorandum of Agreement (MOA) between CBP-IA and an external agency exists with respect to polygraph testing, polygraph requests from the applicable external agency may be submitted directly to the CAD Director, or designee.
5. CBP-IA polygraph examiners conducting polygraph examinations for external agencies will comply with the CBP policies and regulations as if the examination were being conducted for a CBP investigation. If any conflict is noted between CBP-IA procedures and those of the requesting agency, the CBP-IA procedures and testing requirements will take precedence. No examination will be conducted for any external agency when the request includes any direct conflict with CBP-IA policies unless specifically approved by the Assistant Commissioner, Office of Internal Affairs.

## **III. INITIATING A POLYGRAPH EXAMINATION**

### **A. Case Agent Responsibility**

1. The polygraph is an investigative tool that should be administered only after the case agent has attempted to exhaust all feasible investigative leads, but has not resolved the primary issue of the case. Prior to requesting a polygraph examination, it is the case agent's responsibility to possess a strong working knowledge of the case and to have conducted a thorough interview with the prospective examinee regarding his/her knowledge of the investigation. When possible, a sworn statement should be obtained from the examinee prior to the polygraph examination.
2. Prior to contacting the Credibility Assessment Division (CAD) for authorization to conduct a polygraph examination, the examinee must consent to take the examination.

3. Unless approved by the Director, CAD, a polygraph examiner will not be authorized to travel to any location to be in a “stand by” status awaiting case developments.
4. It is the case agent’s responsibility to arrange a suitable location for the polygraph examination, as well as arrange logistical support for the examiner. When a specifically designed interview/polygraph room is not available, a private office/room with a table and two chairs will suffice.
5. Upon receipt of the polygraph authorization, the case agent will notify the examinee of the date, time and location for the polygraph examination.
6. In the event that the examinee is a juvenile, a written Parental Consent for Minor must be obtained from their legal guardian.
7. Prior to every polygraph examination, the requesting agent, or designated representative, should provide the polygraph examiner with a detailed briefing of the case facts and relevant test issues as well as answer any specific questions the examiner may have.
8. At the beginning of every polygraph examination, the requesting case agent, or designated representative, should be available to witness the examinee’s advice of rights and consent to undergo a polygraph examination. Whenever possible, the case agent should visually and/or audibly monitor the entire polygraph examination. If monitoring is not possible, the case agent should be available to confer with the examiner at any time during the examination, should the need arise.
9. In the event the examinee is found deceptive and a confession is obtained, it is incumbent upon the case agent, when possible, to obtain a written statement at the conclusion of the polygraph examination. This helps alleviate the burden of additional travel for the examiner to appear at any subsequent administrative or judicial proceedings.
10. All CBP initiated polygraph examinations will be conducted by currently certified CBP-IA polygraph examiners unless otherwise directed by the CBP Assistant Commissioner, Office of Internal Affairs, or designee.

## **B. Requesting a Polygraph Examination**

1. Requests for all specific issue polygraph examinations should be directed to the attention of the Director, Credibility Assessment Division. These requests may be done telephonically or in writing. Official requests for polygraph will be approved by the Director, Credibility Assessment Division, or designee, **prior** to the administration of any examinations, to include those examinations to be administered within the assigned polygraph examiner’s area of operations.

Normally, the polygraph request, CBP Form 4608 will be accomplished by the supporting polygraph examiner based on information provided by the case agent.

2. All polygraph requests involving investigations conducted by the CBP Office of Internal Affairs will be coordinated with the supporting SAIC, Investigative Operations Division, or their contemporary when the request originates from another entity within CBP-IA such as Personnel Security Division, prior to contacting the Director, Credibility Assessment Division.
3. Non-CBP polygraph requests by other law enforcement agencies must come to the attention of the Director, Credibility Assessment Division, or designated representative, through the applicable SAIC, Investigative Operations Division.
4. Inspector General and all other non-CBP related polygraph requests may be made telephonically or in writing to the Assistant Commissioner, Office of Internal Affairs, or designee, for approval and subsequent routing to the Director, Credibility Assessment Division for action.
5. When a valid Memorandum of Agreement (MOA) exists between CBP and an external agency, polygraph requests may be made directly to the Director, Credibility Assessment Division, or designee, from the external agency. When applicable, the Director, Credibility Assessment Division will coordinate the conduct of approved external agency examinations under an existing and valid MOA with the applicable SAIC, Investigative Operations Division.
6. Non-CBP polygraph examiners are not authorized to conduct polygraph examinations for CBP investigations without the express authorization of the Director, Credibility Assessment Division. When investigations are being conducted jointly with other agencies, CBP-IA agents should recommend the use of CBP-IA polygraph examiners to support the investigation, and coordinate this support accordingly.
7. It is incumbent upon the Director, Credibility Assessment Division, or designee, to screen all polygraph requests to ensure that polygraph is used in a proper and efficient manner.
8. Information which must be supplied at the time of the polygraph authorization includes:
  - a. Name of examinee(s)
  - b. Case/File number
  - c. Location of exam
  - d. Proposed date of exam
  - e. Type of case
  - f. Examinee's consent to undergo a polygraph examination
  - g. Results of any other forensic testing



- h. Examinee's role in the case
  - i. Specific issue to be tested
  - j. Age, physical and mental condition of the examinee
  - k. Special requirements (foreign language/interpreter, time/travel constraints, physical handicaps/disabilities)
9. Polygraph examinations can only be authorized by the Assistant Commissioner, Office of Internal Affairs, or designated representative. Polygraph authorizations will be written and transmitted by the approving authority to the assigned examiner, applicable SAIC, Investigative Operations Division and all other interested offices and divisions.

#### **IV. RESPONSIBILITY AND CONTROL OF THE POLYGRAPH PROGRAM**

**A. Role of the Assistant Commissioner, Office of Internal Affairs (IA)** - The Assistant Commissioner, Office of Internal Affairs, has the overall responsibility for the formulation and implementation of all policy and procedures relating to the conduct and administration of polygraph examinations by CBP personnel. He/she also has ultimate responsibility for the proper procurement of polygraph equipment as well as the selection and training of all CBP-IA polygraph examiners.

#### **B. Role of the Director, Credibility Assessment Division**

1. The Director, CAD has been designated by the Assistant Commissioner, Office of Internal Affairs to oversee the actual operation of the CBP-IA polygraph program. The Director, CAD will function as the Special Agent-in-Charge (SAIC) of the CAD and will make all necessary recommendations regarding polygraph matters in order to maintain, improve and successfully utilize the polygraph program in achieving the goals of the CBP.
2. All requests, reports and recommendations relating to polygraph activities will be directed to the Director, CAD for action. The Director, CAD, or designated representative, will be the approving authority for all polygraph examinations conducted by CBP polygraph examiners. All polygraph reports will be approved by the Director, CAD, or designated representative, prior to dissemination to the respective destinations.

#### **C. Role of the Deputy Director, Polygraph Program Manager**

1. The Deputy Director should be a federally certified polygraph examiner assigned duties as Polygraph Program Manager. The Deputy Director acts as the Director's designee for daily polygraph matters. Under the supervision of the Director, CAD, the Deputy Director is specifically responsible for the daily operation and administration of the polygraph program.

2. These specific duties include:
  1. Assume the duties of the Director in his/her absence
  2. Responsible for all property assigned to CAD
  3. Maintaining and preparing reports, statistics and data relative to polygraph activity
  4. Identifying physiological data, statistics, and other information suitable for use in scientific research
  5. Maintaining and procuring polygraph materials and equipment
  6. Reviewing and approving all polygraph examination reports
  7. Technically supervising all polygraph examiners
  8. Scheduling examinations in a timely and cost-effective manner
  9. Training polygraph examiners
  10. Approving examinations and staffing assignments
  11. Ensuring quality control of all polygraph examinations;
  12. Scheduling any necessary overtime;
  13. Serving as liaison with other CBP Divisions and external agencies;
  14. Performing evaluations of all polygraph examiners;
  15. Representing CBP on Federal Interagency Polygraph Committees;
  16. Conducting briefings regarding CBP polygraph program usage and ethics as they apply to polygraph; and
  17. At the request of the Director, CAD, accomplish the conduct of any CBP polygraph examinations.

#### **D. Role of the ASAIC, CAD Policy**

1. When designated, assume all duties listed above in the absence of the Deputy Director.
2. Manage Policy Branch and develop CAD policies in accordance with Federal standards.
3. Develop policies and procedures that ensure technical proficiency of program staff.
4. Manage workflow to ensure equitable distribution that allows timely completion of work.
5. Routinely communicates with employees, stakeholders and others to ensure satisfaction and enhance unit performance.
6. Conduct polygraph examinations at the request of CBP-IA.

#### **E. Role of the ASAIC, CAD Quality Control**

1. When designated, assume all duties listed above in the absence of the Deputy Director.
2. Manage Quality Control Branch to ensure program compliance with Federal standards.
3. Develop policies and procedures that ensure technical proficiency of program staff.

4. Manage workflow to ensure equitable distribution that allows timely completion of work.
5. Routinely communicates with employees, stakeholders and others to ensure satisfaction and enhance unit performance.
6. Conduct polygraph examinations at the request of CBP-IA.

#### **F. Role of the ASAIC, CAD Training**

1. When designated, assume all duties listed above in the absence of the Deputy Director.
2. Manage Training Branch and ensure that all applicable Federal training requirements are met.
3. Ensure that CAD employees are made aware of career development opportunities.
4. Develop policies and procedures that ensure technical proficiency of program staff.
5. Manage workflow to ensure equitable distribution that allows timely completion of work.
6. Routinely communicates with employees, stakeholders and others to ensure satisfaction and enhance unit performance.
7. Conduct polygraph examinations at the request of CBP-IA.

#### **G. Role of the ASAIC, CAD Support**

1. When designated, assume all duties listed above in the absence of the Deputy Director.
2. Manage Support and Logistics Branch and ensure that CAD support and equipment requirements are met.
3. Ensure that CAD equipment is operational and deployed technology is updated as required.
4. Develop policies and procedures that ensure technical proficiency of program staff.
5. Manage workflow to ensure equitable distribution that allows timely completion of work.
6. Routinely communicates with employees, stakeholders and others to ensure satisfaction and enhance unit performance.
7. Conduct polygraph examinations at the request of CBP-IA.

#### **H. Role of the ASAIC, CAD Counter-Intelligence**

1. When designated, assume all duties listed above in the absence of the Deputy Director.
2. Manage Counter-Intelligence Branch to ensure program compliance with Federal standards.
3. Develop policies and procedures that ensure technical proficiency of program staff.

4. Manage workflow to ensure equitable distribution that allows timely completion of work.
5. Routinely communicates with employees, stakeholders and others to ensure satisfaction and enhance unit performance.
6. Conduct polygraph examinations at the request of CBP-IA.

### **I. Role of the CBP-IA Polygraph Examiner**

1. The primary role of the CBP-IA polygraph examiner is to apply psycho-physiological detection of deception methodology to determine the truth relating to any specific issue tested. The CBP-IA Special Agent/Polygraph Examiner will consistently maintain the professional and ethical standards of the Office of Internal Affairs. They will only conduct polygraph examinations approved by the Director, CAD. Their opinion regarding truth will be based on an unbiased evaluation of the polygraph test data.
2. All CBP-IA polygraph examiners will belong to the American Polygraph Association and/or the American Association of Police Polygraphists, and will remain current in their knowledge of scientific and professional publications. They are also encouraged to participate in other professional and scientific organizations and state and local law enforcement related polygraph organizations, subject to the approval of the CAD Director.
3. All CBP-IA polygraph examiners will be federally certified and are not subject to any state or local polygraph licensing requirements.
4. All CBP-IA polygraph examinations will be conducted in accordance with guidelines established in the Federal Polygraph Examiner's Handbook by the National Center for Credibility Assessment (NCCA).
5. It is the responsibility of each examiner to determine the fitness of the examinee to be tested by polygraph. The examiner has the sole discretion to refuse to conduct, or to terminate an examination when they determine that factors are present which would render the examinations procedure invalid.

## **V. QUALIFICATION AND SELECTION OF POLYGRAPH EXAMINER CANDIDATES**

### **A. Qualification of Candidates**

1. To be eligible for selection as a CBP-IA Special Agent/Polygraph Examiner, a candidate must meet the following minimum requirements:
  - a. Should be a trained criminal investigator with at least two (2) years of investigative experience, or its equivalent.

- b. Possess a four (4) year Baccalaureate Degree from a recognized and/or accredited educational institution.
- c. Agree to serve a minimum of four (4) years from the date of certification as a CBP polygraph examiner.
- d. Be willing to work 50 or more hours per week and to travel as deemed necessary to accomplish the CBP polygraph mission.
- e. Be willing to accept transfer of duty station to fulfill the needs of the CBP-IA polygraph mission.

## **B. Selection of Candidates**

1. If the polygraph examiner candidate is a CBP employee and meets or exceeds the qualifications cited above, he/she must:
  - a. Submit a memorandum through the head of their office to the CAD Director requesting consideration as a polygraph examiner.
  - b. Successfully complete a personal interview with the CAD Director, or designee.
  - c. Successfully pass a CBP-IA security screening polygraph examination.
  - d. Obtain final approval for polygraph training from the Assistant Commissioner, Office of Internal Affairs.
2. If the polygraph examiner candidate is not a CBP employee and meets or exceeds the qualifications cited above, he/she must:
3. Submit an OF-612 to the CAD Director and/or submit an application against a current CBP/OPM Vacancy Announcement.
4. Successfully complete a personal interview with the CAD Director, or designee.
5. Successfully pass a CBP-IA security screening polygraph examination.
6. Obtain final hiring approval from the Assistant Commissioner, Office of Internal Affairs.

- C. Polygraph Examiner Candidates** - As a prerequisite for entrance into their Basic Polygraph Examiner Training course, NCCA requires all candidates for training to successfully pass a standard "personnel screening" polygraph examination.

## **VI. CERTIFICATION OF POLYGRAPH EXAMINERS**

### **A. Training of Polygraph Examiners**

1. Candidates selected for training must successfully complete the Basic Polygraph Examiner Training Course at the NCCA. This course is currently fourteen (14) weeks in durations and consists of both academic and technical training in the field of polygraph. No other basic polygraph training course shall be used to train CBP polygraph examiner candidates.
2. While attending the NCCA Basic Polygraph Examiner Course, candidates are authorized to claim 100% investigative per diem.

### **B. Internship Program**

1. Upon graduation from NCCA, each CBP-IA polygraph examiner candidate will serve as a polygraph intern. This internship will last for a minimum of twenty-five (25) successfully administered polygraph examinations, or as long a period of time deemed necessary by the CAD Director, or designee.
2. The polygraph examiner intern will conduct all examinations under the supervision and guidance of a certified CBP-IA polygraph examiner. The senior examiner's evaluations of the intern, along with other factors, will be used by the CAD Director as criteria for determining when the intern phase of the candidate training has been completed.
3. Upon the successful completion of the internship program, the polygraph examiner candidate will be certified by the CBP-IA as a Federal Polygraph Examiner, authorized to conduct CBP-IA assigned polygraph examinations.
4. Certification of the polygraph examiner candidate will be evidenced by issuance of an official certificate signed by the Assistant Commissioner, Office of Internal Affairs.

### **C. Annual Certification of Polygraph Examiners**

1. In order to maintain certification, CBP-IA polygraph examiners must, without gross error, conduct or be involved in the Quality Assurance Review of a minimum of thirty six (36) polygraph examinations annually.
2. Failure to meet these minimum testing requirements may necessitate the affected examiner to attend NCCA approved certification training, re-enter the internship program or face decertification as a CBP-IA polygraph examiner. Decertification

will also result in termination from assignment to the Credibility Assessment Division.

#### **D. Required Continuing Education**

1. In conjunction with standards developed by the NCCA, each federally certified CBP-IA polygraph examiner will attend a minimum of eighty (80) hours of continuing education training within a two-year period.
2. The CAD ASAIC, Training will be responsible for securing the necessary number of allocations annually at continuing education facilities/seminars to fulfill this requirement.
3. With the concurrence of the CAD Director, CBP-IA examiners will be selected by the CAD ASAIC, Training to attend various nationally recognized polygraph seminars, workshops and conferences and their attendance will be funded by CBP.

#### **E. Professional Memberships**

1. Membership in the American Polygraph Association and/or the American Association of Police Polygraphists is required and membership costs will be paid by CBP. CBP-IA polygraph examiners are not mandated, but are encouraged, to join other State and local polygraph organizations related to law enforcement.
2. Membership in State and local polygraph organizations and reimbursement of associated membership fees are subject to approval by the CAD Director.

#### **F. Decertification of Examiners**

1. Decertification of a CBP-IA polygraph examiner means that the affected examiner is no longer authorized to conduct polygraph examinations for CBP.
2. A CBP-IA polygraph examiner may be decertified under any of the following circumstances:
  - a. The examiner satisfies the required tenure and voluntarily leaves the polygraph program.
  - b. The examiner fails to complete the mandated number of exams annually.
  - c. The examiner, in the opinion of the Director, CAD fails to demonstrate the ability to conduct examinations, render opinions, meet reporting requirements or act in a professional manner consistent with the ethics and standards of the CBP-IA.

- d. The Director, CAD may decertify any examiner based upon the operational requirements of the CBP as determined by the Assistant Commissioner, Office of Internal Affairs.
3. The SAIC of the CBP office where the examiner is assigned will be notified by the Director, CAD when an examiner is decertified or in danger of losing certification.

## **VII. ASSIGNMENT AND EVALUATION OF POLYGRAPH EXAMINERS**

### **A. Duty Assignments**

1. It is the policy of CBP-IA to assign polygraph examiners to various Field Offices located throughout the United States rather than to centralize their assignments out of the Credibility Assessment Division (CAD). This allows for greater mobility and ease of travel to all districts on relatively short notice and facilitates access to polygraph support by CBP-IA Special Agents conducting field investigations.
2. Each CBP-IA polygraph examiner has been specifically trained and equipped to provide a technical skill for the benefit of the entire CBP. Polygraph duties support both the investigative and hiring activities of the CBP as a whole, not just the office where the polygraph examiner is assigned. CBP-IA polygraph examiners must be readily available for travel outside the geographical area of assignment on a continual basis, often times on short notice. The SAC in the office of assignment must be cognizant of the need for flexibility when assigning non-polygraph related duties to assigned polygraph examiners. Polygraph duties will normally take precedence over other Special Agent duties as assigned by the SAIC for the office of assignment. Should a conflict arise between polygraph duties and non-polygraph duties, the CAD Director will be notified and a resolution will be implemented based on coordination with the SAIC in the office of assignment.
3. When CBP-IA field polygraph examiners are not performing specific polygraph duties, the IOD SAIC is authorized, and encouraged, to utilize the polygraph examiner in a manner which can best support the office of assignment. Non-polygraph duties with a potential multi-day duration should be coordinated with the CAD Director to prevent conflicting assignments.

### **B. Geographical Assignments**

1. The Director, CAD in consultation with the Assistant Commissioner, Office of Internal Affairs will designate which offices will be staffed with CBP-IA Special Agent/Polygraph Examiners. These field office assignments are based on the



geographical distribution of polygraph caseload, proximity to major commercial travel facilities, field office requirements and the needs of the CBP as a whole.

2. CBP Special Agents selected for polygraph training are required to remain in the polygraph program for a minimum of four years from the date of federal certification. This requirement is contingent upon their satisfactory performance as determined by the Director, CAD. The needs of the CBP may take precedence over this policy.

### **C. Performance Evaluations**

1. The rating official for performance evaluations of all CBP-IA polygraph examiners will be the applicable CAD ASAIC and the reviewing official will be the Deputy Director, CAD. When preparing performance evaluations, oral and/or written input will be sought from the SAIC of the office of assignment for the polygraph examiner being evaluated.
2. The CAD ASAIC will be evaluated by the Deputy Director, CAD and the reviewing official will be the Director, CAD.

## **VIII. POLYGRAPH PROGRAM QUALITY CONTROL**

### **A. Purpose of Quality Control**

1. The purpose of quality control is to ensure the CBP-IA polygraph program maintains the highest standards of professionalism, accuracy and reliability. These standards can only be attained by ensuring that each CBP-IA polygraph examiner conforms to federally accepted practices and the CBP-IA policies regarding the administration of polygraph examinations.
2. In order to ensure the highest standards of accuracy and reliability, all CBP-IA polygraph examiners are required to comply with the technical guidance provided by the CAD Director, or designee.

### **B. Quality Control Review**

1. CBP-IA polygraph examiners assigned to the Credibility Assessment Division as Quality Control Officers are responsible for the review of submitted reports, physiological data, and documentation related to every polygraph examination administered by a CBP-IA polygraph examiner. It is their responsibility to ensure the proper use of polygraph technique and report procedures by CBP-IA polygraph examiners and to verify the technical accuracy of every CBP administered polygraph examination.

2. Each quality control review will include an independent analysis and evaluation of the entire polygraph examination.

### **C. Quality Control Opinions**

1. A Quality Control examiner will perform an independent numerical evaluation of every CBP-IA administered polygraph examination which resulted in the production of interpretable polygraph test data. This evaluation in conjunction with a review of the test question formulation and required forms shall form the basis for the reviewer's opinion on the test results.
3. At the conclusion of the review, the reviewer will render a "CONCUR" or "NON-CONCUR" opinion.
4. In addition to the rendering of these opinions, Quality Control Officers may make technical comments regarding the conduct of a test. In the event that technical comments are required, the CAD ASAIC Quality Control or designee, will informally notify the polygraph examiner who administered the issue examination via telephone or e-mail to address any identified problem area(s). Should the polygraph examiner repeat errors informally discussed, the CAD ASAIC Quality Control has the authority to make formal written comments to the examiner and will maintain a formal record of the notification.

### **D. Concur Opinion**

1. CBP-IA polygraph examination results are not considered to be final until reviewed by a designated CAD Quality Control Agent. Examinations reviewed by another field examiner does not constitute a CONCUR opinion. Field examiners should avoid presenting their field opinions as the final conclusion on a particular test. Examinees and supported case agents should be informed that the field conclusion is not considered official until sanctioned by an independent Quality Control review and endorsed by the CAD Director or designee.
2. All examinations that receive a CONCUR opinion during the Quality Control review process will be marked as such on the front of the Polygraph Report.
3. The Polygraph Report will not be certified as complete until the Quality Control process is completed.

### **E. Non-Concur Opinion**

1. A NON-CONCUR opinion requires at least two (s) Quality Control reviews, one of which must be the CAD Director or designee. When this occurs, the polygraph examiner who administered the examination will be immediately notified via e-mail or telephone by the CAD Director or designee. The problem area will be

discussed and the submitting polygraph examiner will be given instructions on corrective measures.

2. When the corrective action requires a change in the opinion on the polygraph test data from that originally reported by the field examiner, the requesting case agent will be notified and, if possible, a retest scheduled.

## **IX. POLYGRAPH EXAMINATION FILES**

### **A. Retention of Files**

1. The CAD will retain the original polygraph reports and all attachments regarding Other Agency and Applicant Screening polygraph examinations.
2. All CBP-IA field generated original polygraph reports and their attachments will be sent to the controlling office for inclusion in the case file.

### **B. Retention Schedule**

1. The retention period of polygraph reports and their attachments stored outside the CAD will be determined by the destruction date of the file in which the reports were included.
2. Polygraph Reports and their attachments stored within the CAD will be retained and destroyed in accordance with CBP policy governing management of vital records.
3. All Polygraph Reports and their related articles must be destroyed by burn bag or some similar nature.

**C. Release of Polygraph Files** - Other than to CBP personnel, polygraph files may only be released to persons by means of the requestor in according with applicable law.

### **D. Polygraph Statistical Reports**

1. Accurate and timely statistical reports are important as they form the basis of internal reports as well as outside inquiries.
2. The Director, CAD or designee will be responsible for publishing and maintaining the statistical progress of each polygraph examiner and the polygraph program as a whole.
3. Statistical reports generated by the Director, CAD or designee will be made available to the Assistant Commissioner, IA on request or as deemed appropriate by the CAD Director.

## **X. EQUIPMENT AND FACILITIES**

### **A. Polygraph Instruments, Related Equipment/Supplies**

1. Polygraph instruments and related equipment will be purchased on a competitive bid basis by the CAD.
2. The ordering or purchase of all polygraph related supplies will be coordinated with the Director, CAD, or designee.
3. All polygraph instruments and related equipment over \$300 will be accountable property. All polygraph equipment meeting this criterion will be assigned a CBP accountable property number and will be carried by the CAD as accountable property.
4. When a field examiner leaves the polygraph program, and there are no immediate plans for a replacement, he/she should coordinate with their applicable ASAC, CAD for transfer of all polygraph related equipment to CAD.
5. Only currently certified CBP-IA Special Agent/Polygraph Examiners may utilize CBP-IA polygraph equipment. Exceptions to this policy may be made on a case-by-case basis by the Director, CAD, or designee.

### **B. Polygraph Demonstrations**

1. The utilization of CBP-IA polygraph equipment for any purpose other than its intended and authorized use is prohibited.
2. Presentations and demonstrations of polygraph techniques and equipment must be approved in advance by the Director, CAD, or designee. In order to be authorized, polygraph presentations or demonstrations must meet the following criteria:
  - a. It must be approved by the SAIC of the requesting geographical area.
  - b. It must be of some public relations or educational value.
  - c. It must be conducted by a currently certified CBP-IA polygraph examiner.

### **C. The Polygraph Suite**

1. Polygraph examinations are not limited to specifically designated examination rooms within CBP-IA offices. However, when feasible, a special room should be designed and designated for polygraph use in all CBP-IA field offices.
2. The polygraph suite should be as quiet as possible and located in a low traffic area within the office. The room should be climate controlled to avoid extreme variances in temperature and to allow for adequate ventilation. The room should

be absent of windows and distracting wall hangings. Any communication devices within the room must have the capability of being muted.

3. The polygraph suite should be large enough to comfortably house, at a minimum, a desk and two chairs, one for the examiner and one for the examinee. Carpeted floors, acoustical tiled walls and monitoring capabilities are desirable.

## **XI. AUTHORITY TO USE POLYGRAPH FOR APPLICANT SCREENING**

### **A. Authority for CBP, Office of Internal Affairs, to Conduct Applicant Polygraph Examination**

1. The Department of Homeland Security has authorized the Customs and Border Protection, Office of Internal Affairs, with OPM approval, to conduct applicant polygraph examinations.
2. The CBP-IA understands that approval from OPM to use the polygraph for law enforcement positions within CBP is contingent upon annual OPM certification.

### **B. The Role of the Assistant Commissioner, Office of Internal Affairs**

1. The Assistant Commissioner, Office of Internal Affairs has the overall responsibility with Customs and Border Protection for the formulation of all policy and requirements relating to the conduct and administration of applicant polygraph examinations; use of equipment; and the selection, training and federal certification of polygraph examiners.
2. The Assistant Commissioner, Office of Internal Affairs, or designee, will authorize polygraph examinations for CBP.

## DEFENSE ACADEMY FOR CREDIBILITY ASSESSMENT

### Law Enforcement Pre-Employment Test



**June 2009**

This document supersedes previous editions.

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## 1. Background

1.1. The LEPET is currently used in different forms by federal law enforcement agencies during the pre-employment process. This Psychophysiological Detection of Deception (PDD) test is used in screening applicants for federal law enforcement positions requiring United States security clearances. The LEPET as taught by DACA is a two phase examination, in which the phase I addresses security and counterintelligence issues. The second phase addresses suitability issues for employment as a federal law enforcement officer. This LEPET procedure is consistent in structure to the procedures used by all federal law enforcement agencies.

## 2. Principles of the Law Enforcement Pre-Employment Test

2.1. The LEPET is a probable lie comparison (PLC) question technique, in which the examinee's responses to questions regarding the screening issues of interest (relevant issues), are compared with his responses to questions regarding similar (comparison) issues to which he is probably lying. The principle of technique uniformity insures that the test is conducted according to an established method. The testing format is designed to allow the maximum number of relevant questions involving the selected target. The objectives of this technique are to verify the truth of an examinee's statements relating to a pre-established list of questions, develop new information for use by adjudicators, and to aid in an investigation.

## 3. Psychology of the Law Enforcement Pre-Employment Test Structure

3.1. The PLC test is designed around the concept of "Psychological Set." Psychological Set dictates that a subject will physiologically respond to a stimulus, which poses the greatest threat to the security of the examinee, regardless of his innocence or guilt and force them to focus his attention on significant questions in the test. The LEPET technique uses a structured format in which all test questions are reviewed with the examinee during the pre-test phase. The question order on the second chart must be mixed, and the question order on the third chart may be mixed. The relevant questions in the test structure are designed to pose a threat to the security of the deceptive examinee, and force them to focus their attention upon these questions. The comparison questions in the tests structure are redesigned to pose a threat to the security of the truthful examinee, and force him to focus his attention upon these questions. The theory behind the comparison questions is not revealed to the examinee.

## 4. Law Enforcement Pre-Employment Test Concepts

4.1. The concept of psychological set is based on the presumption that an examinee will focus his attention on the test question(s) that holds the greatest significance (signal value) to him. The anticlimax dampening concept is based on the principle of psychological set, and applies to the deceptive and non-deceptive examinee. When a series of relevant questions are asked during an examination, the deceptive examinee may direct his attention to the relevant question(s) that cause(s) the greatest degree of concern. Sometimes this examinee may not be psychophysiologicaly attuned to other relevant question(s) on the test. Likewise, the truthful



examinee may direct his attention to the comparison question(s) that capture(s) his greatest concern during the examination. This examinee may be unaffected by the perceived “weaker” comparison question(s). This explains why an examinee may respond significantly more to some, but not all, relevant or comparison questions that are presented during PDD examinations. Further, it may assist in understanding why some relevant questions may have significantly higher (minus or positive) numbers assigned after an overall score has been determined.

4.2. The outside super-dampening concept occurs when the examinee considers an outside issue to be of greater concern than either the relevant questions or the comparison questions on the test. The presence of an outside issue usually results in poor response, random responses or no response to either the relevant or comparison questions. An example would be a subject who is so concerned regarding the drug question asked during the second phase of the test, that he is not properly paying attention to the relevant/comparison questions during the administration of the phase one test. Therefore, during the LEPET pretest, special care must be taken to assure the examinee understands which questions will be asked during any particular phase of testing and that there will be no surprise questions asked on the test.

## 5. Law Enforcement Pre-Employment Test Question Types

5.1. Through spot analysis, the examiner is able to monitor the examinee's response capability throughout the examination. Responses, or lack of responses, to relevant and comparison questions are compared, one against the other, within the same spot where response capability is relatively constant. The three spots of phase one of the LEPET test are the three relevant questions #4, #6, and #8. These are compared to the comparison questions #3, #5, #7, and #9, which are in the close proximity of the relevant questions. The three spots of phase two of the LEPET test are the three relevant questions #24, #26, and #28. These are compared to the comparison questions #23, #25, #27, and #29, also in the close proximity of the relevant questions.

5.2. The sacrifice relevant question is always the #2 question in phase one of the LEPET format and #22 in phase two. The question is worded so that the examinee answers “Yes.” It is designed to absorb the initial response to a relevant issue. This question is not numerically evaluated in the LEPET. For example:

5.2.1. #2 “Concerning national security issues, do you intend to answer each question truthfully?” “Yes.”  
 #22 “Concerning your application process, do you intend to answer each question truthfully?” “Yes.”

5.3. Comparison questions are always Questions #3, #5, #7, and #9 on phase one of the LEPET. They are identified as Questions #23, #25, #27, and #29, on phase two of the LEPET. These questions involve behavior that the majority of the population has engaged in. Thus, when the examinee is maneuvered into answering “No” to the question, his response is considered a probable lie. Comparison questions are designed to identify the innocent examinee. The responses to the comparison questions are compared to the relevant questions. For example:

5.3.1. #5 “Before this year, did you ever betray the trust of a friend or loved one?”  
“No.”

5.3.2. #7 “Prior to 2009 (current year), did you ever lie to anybody in a position of authority?” “No.”

**\*\* Note\*\*** Time bars in the comparison questions should encompass the time frame prior to the examinee applying for the position for which he/she is being tested. For example: If an applicant applied for the position in 2009, the time bars should be “Prior to 2009, before 2009, Prior to applying with the ATF, before your application with the FBI, etc.

5.4. The irrelevant question or neutral question is unrelated to the relevant issue. As the first question, it is designed to absorb initial (orienting) response and is worded so that the examinee answers “Yes.” An additional bank of irrelevant questions are reviewed and used as needed to overcome unwanted noise (artifacts) on the signal of interest. Examiners, at their discretion, can begin each chart with a different irrelevant question. They are labeled #1 A, #1B, #1D, or #21A, #21B, #21D. Avoid using the letter “C” in labeling irrelevant questions as this letter is used to denote comparison questions.

5.4.1. #1 "Are the lights on in this room?" “Yes.”

5.4.2. #1A “Are you now in \_\_\_\_\_?” “Yes.”

## 6. Law Enforcement Pre-Employment Test Color Codes

6.1. Primary relevant	red
6.2. Sacrifice relevant	yellow/red
6.3. Comparison questions	green
6.4. Irrelevant	yellow (neutral)

## 7. Pre-Test Interview Procedures

7.1. The pretest interview for the LEPET screening examination normally has the following six basic steps:

7.1.1. During the introductory portion of the examination, the examiner will, immediately obtain some form of picture identification such as a military ID card or driver's license to verify examinee's identity. Next, unless otherwise prohibited, the examiner will introduce himself to the examinee. To help alleviate possible apprehension, the examiner will provide the examinee with a description of the examination suite, identifying all observation and recording equipment and a brief overview of the entire PDD testing procedures.

7.1.2. The examiner must obtain the examinee's written consent before the examination is conducted. At DACA, the consent form is read to the examinee; however, the examinee must read the waiver portion of this form.

7.1.3. The examiner will use the collection of biographical and medical data to establish rapport with the examinee, assess the examinee's suitability, both physiologically and psychologically, to undergo the PDD examination, and lay the foundation for the introduction of comparison questions. The examiner's evaluation must be indicated in the appropriate section of the Background Worksheet. During training at DACA, if the examinee is deemed unsuitable to undergo the PDD examination (i.e., fatigue, medications, etc.), the student examiner must inform the laboratory instructor of the matter before the data collection phase is initiated.

7.1.4. Instrumentation/F3 - The "standard" instrumentation and fight/flight/freeze (F3) explanation as taught at DACA will be presented to the examinee.

7.1.5. A detailed review of the examinee's "Suitability Questionnaire" will be conducted. During this review, the examiner will ensure that all topical areas on this document are discussed in detail with the examinee. The purpose of this detailed review is to provide the examinee an opportunity to correct any mistakes or omissions on the form. At DACA, the student examiner must provide the examinee with a minimum of three pretest appeals for undisclosed information, concentrating on those topical areas that are susceptible for these types of actions such as drug involvement and criminal activity.

7.1.6. Phase I questions are reviewed with the examinee in the following sequence: Sacrifice relevant question, relevant questions, comparison questions, and irrelevant questions. Following the completion of Phase I testing, Phase II questions are reviewed with the examinee in the same sequence.

7.2. During the review of the Phase I and Phase II relevant questions, the examiner will ensure that all key topical areas for each question are thoroughly explained to the examinee. In Appendix "A", a sample LEPET pretest interview checklist is provided to assist DACA student examiners.

## 8. Law Enforcement Pre-Employment-Test Data Analysis

8.1. A numerical evaluation of the polygraph charts is conducted upon completion of the data collection phase of the examination. This evaluation is based upon a numerical system by which a consistent set of values is used to analyze the physiological responses recorded on the test. The two systems most used in the Federal Government are the seven position scale: (-3, -2, -1, 0, +1, +2, +3) and the three position scale: (-1, 0, +1).

8.2. On the first chart of phase one of the LEPET, relevant question 4 is compared with comparison questions 3 and 5. Relevant question 6 can be compared with either comparison question 5 or 7. Relevant question 8 is compared with comparison questions 7 and 9. On the first chart of phase two of the LEPET, relevant question 24 is compared with comparison questions

23 and 25. Relevant question 26 can be compared with either comparison question 25 or 27. Relevant question 28 is compared with comparison questions 27 and 29. Test data analysis of the LEPET is done by vertical spot total only. There is no overall horizontal total. In order to make a determination No Significant Response (NSR), each separate spot total must be a plus three (+3) or greater. To make a determination of Significant Response (SR), at least one spot total must be minus three (-3) or less (-4, -5, etc). If the test does not meet the criteria for a decision of SR or NSR, it is deemed No Opinion (NO).

8.3. Examiners are required to rotate the relevant and/or comparison questions in the second chart of each phase of testing. Examiners have discretion in conducting a "mixed chart" on chart three of each phase. Each relevant question must be bracketed by two comparison questions for test data analysis purposes.

## 9. Post Test Phase Procedures

9.1. During testing, an examiner should take the necessary steps to resolve significant physiological responses noted to questions. The first step in this process is to confront the examinee with the examination results of significant physiological responses.

9.2. The concept of LEPET interrogation is considered to be more "probing" in nature than the interrogation of a criminal suspect. The examiner confronts the examinee with the results. However, the tone of the post-test is not as direct as in a deceptive criminal examination.

9.3. After a detailed interrogation, and if there is a reportable admission or confession that would disqualify the examinee from further employment processing, the examination is over. If however the examinee makes a minor admission, which would not necessarily disqualify the examinee from employment, a confirmatory examination will be administered in the form of a breakdown test. During a breakdown test, the issue containing the significant physiological responses is separated from the remaining questions, and separated into its defined components. A LEPET test is constructed of questions covering each such area. If the examinee clears the breakdown exam on the question that contained significant responses, then the remaining relevant questions must be re-tested.

9.4. LEPET testing differs from other screening formats in that relevant questions are never modified with "Other than," or "Have you revealed the fullest extent of." In most cases, the re-worded question will be phrased "Are you now withholding any information regarding..." Avoid covering more than one primary issue on a breakdown test (i.e., drugs and a counterintelligence issue). Examples of breakdown questions are denoted in Appendix "G"

9.5. This new series may not be very effective if a lengthy interrogation has taken place, since some examinees may respond to the relevant questions simply because they have been "sensitized" to the issue or the question. In this case, the examiner may want to bring the examinee back on another day for additional testing.

9.6. Any admissions made during interrogation will require the employment application form to be pen-changed, initialed, and dated, by the examinee.

9.7. If after a detailed interrogation is conducted, the examinee fails to offer a reportable admission or confession, the examination will not continue, and the results will be reported.

9.8. Remember that breakdown testing should not be used in lieu of confrontation and interrogation. Although it is not designed to replace interrogation, a breakdown test with physiological responses to specific questions may be very useful during the interrogation process.

9.9. In the case of a No Opinion test, the examiner will construct a breakdown series of the NO question(s) following the LEPET structure. The breakdown exams will be structured as a two or three relevant question series. If the examinee is NO to all relevant questions, the entire series is run again with both the relevant and comparison questions re-worded.

## APPENDIX A

### Polygraph Examination (Screening)

#### 1. Introduction

1.1. Assure recording device is functioning and recording media is properly labeled, i.e., (case #, applicant name, date, location, your name, time in, type of exam).

1.2. Verbally confirm the applicant's position on tape.

1.3 Check photo ID.

1.4. Explain that polygraph exam is not the sole determining factor in the hiring process (it is used in conjunction with all the other steps in the hiring process to evaluate the applicant's suitability for employment).

1.5. Optional - review of your experience and training (don't beat this to death).

1.6. Clarify any questions the applicant may have.

1.7. Give a brief overview of the process (forms, background info, explanation of instrument, review of forms, review of questions, practice test, test).

#### 2. Forms

2.1. Constitutional rights (explain you represent a law enforcement agency and want to preserve our rights to pass on any serious admissions to the appropriate agency)

2.2. Consent form

2.3. Employee consent form (only required if the applicant is a current employee upgrading his/her position).

2.4 Countermeasures advisement (verbal or written)

#### 3. Personal History Forms (Biographical Sheet)

3.1. Don't pre-write info, use interview to develop rapport.

3.2. Medical info (explain that polygraph monitors physiology) - need to find out if you're fit to take the exam:

3.2.1. How much sleep?

3.3. Set comparisons (rate self on 1-10 scale; hire only honest people; not the type who lies, cheats or steals? - The US government does NOT want to hire people with a history of those character flaws).

3.4. Take employment and education info - remember to set comparisons questions.

#### 4. Explanation of instrument

4.1. Explain fight or flight (use example)

4.2. Explain components (mild pressure from cardio cuff)

4.3. Explain that lying will be a deliberate act that will put examinee in fear.

4.4. Emphasize that responses are automatic (cannot be controlled) and will occur every time fearful event occurs. Problem with polygraph (100% truthful or will see response).

4.5. Three types of questions (known truth; suitability, honesty and integrity).

#### 5. Review of Application Forms

5.1. Confirm all info not previously covered.

5.2. If admission is made - have the applicant amend his/her application forms).

#### 6. Test Question Review

6.1. Three different types of questions, all equally important. (National Security or Suitability, Honest & Integrity, and Known Truth)

6.2. Order of review: Relevants, Comparisons, and Irrelevants. Make sure to make comparisons "real" to examinee during review.

6.3. Review only one series at a time.

6.4. Relevants are always referred to as Suitability or National Security questions.

6.5. Comparisons are always referred to as honesty and integrity questions.

#### 7. In-Test

7.1. Conduct ACQT and sell chart.

7.2. Conduct In-test.

8. Post - Test

8.1. Direct positive confrontation. Keep it clean. Did not “fail” test, the applicant “failed to resolve all of the issues that were presented.”

8.2. Practice good theme development, but never threaten the applicant with the denial of his/her application.

8.3. Give the applicant a good shot, but if no admissions after a reasonable amount of time, discontinue.

8.4. If applicant makes admissions, have him/her amend forms.

9. Conclusion

9.1. Review tape for any admissions the applicant made.

9.2. If applicant made disqualifying admissions, forms will be reviewed by adjudicators.

9.3. Polygraph is not sole determining factor.

9.4. Two questions: Do you feel you were treated fairly here today? Did you have any concerns with me as your polygraph examiner?



**APPENDIX B**Phase I - Counterintelligence Relevant Questions

## 1. Question #4. "Have you had any unauthorized foreign contacts?"

1.1.1. Clandestine, secret, unauthorized contact with a non-U.S. citizen or someone (U.S. citizen or non-U.S. citizen) who represents a foreign government, power, group or organization.

1.1.2. Contact you want to hide from the examiner, or the U.S. Government

1.1.3. Contact that could result in a potential or real adverse impact on U.S. national security.

1.1.4. Unreported visits to foreign embassies, consulates, or facilities.

1.1.5. Close, continuing, or intimate contact with a foreign national you are hiding.

1.1.6. Approaches to engage in espionage.

1.1.7. Offering to engage in espionage.

1.1.8. Recruitment for espionage activity.

1.1.9. Training for espionage activity.

1.1.10. Planning for espionage activity.

1.1.11 Activity for espionage or sabotage purposes to include improper copying, removal, transporting and release of classified material/information, etc., destruction of government property to harm the U.S.

## 2. Question #6. "Have you intentionally mishandled any classified information?"

2.1. This question concerns the release of classified information or material to an unauthorized person. An unauthorized person is someone not appropriately cleared to receive the classified information or material. The key issues to be targeted with this question are compromises for:

2.1.1. Espionage.

2.1.2. Sabotage.

2.1.3. To harm the U.S.

2.1.4. To embarrass the U.S.

2.1.5. To aid a foreign power.

2.1.6. Monetary/personal gain.

2.1.7. Release to media.

2.1.8. Intentional/deliberate disclosure with forethought; and Incidents of inadvertent disclosures or need-to-know violations.

3. Question #8. "Have you ever been involved in any terrorist activity?"

3.1. Terrorist activity is the calculated use of violence or threat of violence to induce fear; intended to coerce or to intimidate governments or societies in the pursuit of goals that are generally political, religious or ideological. In simple terms, terrorist activity is violent activity that is politically motivated. Subversive activity is any activity that would interfere with, undermine, or deny any individual of their rights guaranteed under the U.S. Constitution; or could result in or lead to the violent or illegal overthrow of the U. S. Government. The questions shall be defined to determine personal involvement in subversive or terrorist activity or support to subversive or terrorist groups. The key elements of subversive and terrorist activity to be included in the definition of the question are:

The key elements of this question to be included in the definition are:

3.1.1. Approaches to engage in subversive or terrorist activity.

3.1.2. Contact with subversive or terrorist groups or their representatives.

3.1.3. Offering to engage in subversive or terrorist activity.

3.1.4. Recruitment for subversive or terrorist activity.

3.1.5. Training for subversive or terrorist activity.

3.1.6. Tasking for subversive or terrorist activity.

3.1.7. Planning of subversive or terrorist activity.

3.1.8. Committing or aiding in subversive or terrorist activity.

3.1.9. Providing support to subversive or terrorist organizations (i.e. money, equipment, personal time, logistic support, etc.).

3.1.10. Compensation (i.e., money, status, personal/family gain) for committing subversive or terrorist acts or support to subversive or terrorist organizations.

3.1.11. Unreported knowledge of subversive or terrorist activity.

## APPENDIX C

### Phase II - Suitability Relevant Questions

#### 1. Question #24. "Have you ever committed any serious crime?"

1.1. The scope of this question shall cover all crimes for which an examinee has been arrested and any serious crime(s) they have committed that have gone undetected. The key issues to be covered are all detected and undetected crimes that have or could have resulted in an arrest, indictment, prosecution, conviction, sentence, loss of respect, reputation or standing in the community. All felony crimes and serious misdemeanors, to include crimes against a person or property shall be targeted. In addition, any incident where an examinee has been questioned or detained by the police as a suspect in a serious crime shall be targeted. Involvement in minor criminal activity as a juvenile shall not be targeted unless the examinee is a juvenile. In cases involving juveniles, the examiner should document all minor criminal activity for the last three years. Serious criminal activity will be documented for the examinee's entire life. Each examiner shall provide the examinee with an explanation of serious crimes that will serve as examples of criminal activity which will include felony and serious misdemeanors. Specific attention should be paid to ensure inclusion of sexual-related crimes, since the overall PDD examination has no questions regarding sexual misconduct. Examples of sexual-related crimes include rape, child sexual abuse, voyeurism, incest, exhibitionism, bestiality, etc. Sexual activity between consenting adults (legally defined as a crime or not) shall not be targeted or reported unless it resulted in an arrest or police involvement.

#### 2. Question #26. "Are you intentionally withholding any information about your involvement with illegal drugs?"

2.1. The scope of the question shall be five years from the date of the PDD examination. For testing purposes, a significant event in the examinee's life may be substituted for a date in the question if it corresponds to the five-year scope. The question regarding personal involvement with illegal drugs or narcotics shall be designed to verify the examinee's total involvement with illegal drugs or narcotics during the last five years and shall significantly target:

2.1.1. Personal use or experimentation, to include one-time use, faked usage or multiple usages.

2.1.2. Buying illegal drugs or narcotics (contributing towards the purchase of illegal drugs or narcotics shall be included as a relevant issue and shall be reviewed when discussing purchases of illegal drugs or narcotics).

2.1.3. Growing or manufacturing illegal drugs or narcotics.

2.1.4. The distribution of illegal drugs or narcotics to include transportation, storing, selling, or assisting in the sale of illegal drugs or narcotics.

2.1.5. Misuse of prescription medication for social purposes. Minor use of another person's prescription medication for a legitimate medical purpose shall not be targeted with this question.

2.2. Distribution, manufacture and cultivation of illegal drugs or narcotics for profit shall be defined as a serious crime, and as such, shall be pretested under the question dealing with serious crime, as well as the drug question. When pretested under the serious crime question, distribution, manufacture and cultivation of illegal drugs or narcotics for profit shall not be restricted to a five-year scope, but will revert to the examinee's entire life. Examiners shall not seek out personal involvement with illegal drugs or narcotics prior to five years from the date of the current PDD examination. However, if an examinee volunteers this information and it differs from what is listed on the security form, the examiner shall correct the security form or document the additional involvement in the Report of PDD Examination. The drug question asked during the PDD examination shall not attempt to verify the accuracy of these changes.

3. Question #28. "Did you deliberately falsify any information on your application forms?"

3.1. The key issues to be targeted with this question are:

3.1.1. Deliberately listing false information on the employment documents with the intent of deceiving or misleading Government representatives responsible for employment decisions, security investigations, or clearance actions.

3.1.2. Deliberately leaving requested information off of the employment documents with the intent of deceiving or misleading Government representatives responsible for security investigations or clearance actions.

3.1.3. The question will not target honest or unintentional mistakes when completing the employment documents.

**APPENDIX D**"No-Answer" Comparison Question List for the Law Enforcement Pre-Employment TestFamily and Ego:

1. Prior to -----, did you ever do anything dishonest?
2. Before -----, did you ever do anything unethical?
3. Prior to -----, did you ever lie to any member of your family?
4. Before -----, did you ever violate any official rules or regulations?
5. Prior to -----, did you ever do anything that you're ashamed of?
6. Before -----, did you ever betray the trust/confidence of a friend or loved one?
7. Prior to -----, did you ever lie to an employer?
8. Before -----, did you ever lie to get out of trouble?
9. Prior to -----, did you ever lie to make yourself look better?
10. Before -----, did you ever cheat in school?
11. Before -----, did you ever misrepresent the facts/truth about anything?
12. Prior to -----, did you ever cheat your employer out of anything?
13. Before -----, did you ever cheat anyone out of anything?
14. Prior to -----, did you ever withhold any information from anyone?
15. Before -----, did you ever tell a lie about anyone?
16. Prior to -----, did you ever lie to better your own position?
17. Before -----, did you ever lie about something important?
18. Prior to -----, did you ever lie to someone in authority?
19. Before-----, did you ever lie to cover something up?
20. Prior to-----, did you ever spread gossip that was mean or cruel?
21. Before-----, did you ever lie about yourself to impress others?
22. Prior to-----, did you ever lie to your parents about anything personal?
23. Before to -----, did you ever lie to your children?

Police Officer/Employees:

24. Before-----, did you ever misuse your take home vehicle/police vehicle?
25. Prior to-----, did you ever falsify a timesheet?
26. Before-----, did you ever lie to another officer to make yourself look better?
27. Prior to-----, did you ever lie to your wife/friend about your job?
28. Before-----, did you ever lie to a supervisor about something personal?
29. Prior to-----, did you ever lie to the dispatcher about your location?
30. Before-----, did you ever talk about your supervisor behind their back?
31. Prior to-----, did you ever cheat your partner out of anything?

(No time bar needed)

1. Did you ever take credit for someone else's work?
2. Did you ever lie about someone behind his or her back?
3. Did you ever cheat in school?
4. Did you ever cheat in sports?
5. Did you ever cheat at cards?
6. Did you ever lie to anyone you consider to be a friend?
7. Did you ever spread gossip about anyone you consider to be a friend?
8. Did you ever spread gossip about a coworker?
9. Did you ever cheat on any academic assignment while in school?
10. Did you ever lie to a supervisor you previously worked for?
11. Did you ever lie to a friend to make yourself look important?
12. Did you ever consider cheating on any examination while in school?
13. Did you ever violate the trust of anyone you consider to be a friend?
14. Did you ever mislead a family member?
15. Did you ever disclose a secret told to you in confidence by a friend?
16. Did you ever take any of the credit for someone else's work?
17. Did you ever lie about someone behind their back?
18. Did you ever cheat at anything while in school?

It should be noted that DACA policy allows for non-time barred comparison questions, providing the comparison question used is truly separated from the relevant issues by subject matter.

## APPENDIX E

### Law Enforcement Pre-Employment Test Question Sequence/Phase I

1. Irrelevant: Are you sitting down? Yes.
2. Sacrifice Relevant: Concerning national security issues, do you intend to answer each question truthfully? Yes.
3. Comparison: Before -----, did you ever lie about something important? No.
4. Relevant: Have you had any unauthorized foreign contacts? No.
5. Comparison: Prior to -----, did you ever cheat anyone out of anything? No.
- 1A. Irrelevant: Is today -----?
6. Relevant: Have you intentionally mishandled any classified information? No.
7. Comparison: Before-----, did you ever lie to cover something up? No.
8. Relevant: Have you ever been involved in any terrorist activity? No.
9. Comparison: Did you ever lie about someone behind his or her back? No.

**APPENDIX F**

Law Enforcement Pre-Employment Test Question Sequence/Phase 2

21. Irrelevant: Are the lights on in this room? Yes.

22. Sacrifice Relevant: Concerning your application process, do you intend to answer each question truthfully? Yes.

23. Comparison: Prior to -----, did you ever lie to make yourself look better? No.

24. Relevant: Have you ever committed any serious crime? No.

25. Comparison: Did you ever mislead a family member? No.

26. Relevant: Are you intentionally withholding any information about your involvement with illegal drugs? No.

21A. Irrelevant: Is this the month of-----? Yes

27. Comparison: Before -----, did you ever cheat in school? No.

28. Relevant: Did you deliberately falsify any information on your application forms? No.

29. Comparison: Before -----, did you ever spread gossip that was mean or cruel? No.



**APPENDIX G**

Breakdown Test Sequence (Serious Crime)

1. Irrelevant: Is today \_\_\_\_\_? Yes.
2. Sacrifice Relevant: Concerning your involvement in serious crime, do you intend to answer each question truthfully? Yes.
3. Comparison: Before -----, did you ever falsify any official documents? No.
4. Relevant: Have you ever committed any serious crime against persons? No.
- 1A. Irrelevant: Are you now in \_\_\_\_\_? Yes
5. Comparison: Before -----, did you ever violate any official rules or regulations? No.
6. Relevant: Have you ever committed any serious crimes against property? No.
7. Comparison: Prior to this year, did you ever lie to anyone you considered a friend? No.

Breakdown Test Sequence (Drugs)

1. Irrelevant: Is today \_\_\_\_\_? Yes.
2. Sacrifice Relevant: Concerning your drug involvement, do you intend to answer each question truthfully? Yes.
3. Comparison: Before -----, did you ever cheat your employer out of anything? No.
4. Relevant: Have you ever used any illegal drugs? No.
- 1A. Irrelevant: Are you now in \_\_\_\_\_? Yes
5. Comparison: Before -----, did you ever violate any official rules or regulations? No.
6. Relevant: Have you ever bought or sold any illegal drugs? No.
7. Comparison: Prior to this year, did you ever tell a lie about anyone? No.

Breakdown Test Sequence (Application Forms)

1. Irrelevant: Is today \_\_\_\_\_? Yes.

2. Sacrifice Relevant: Concerning your application forms, do you intend to answer each question truthfully? Yes.

3. Comparison: Before -----, did you ever lie to an employer? No.

4. Relevant: Did you falsify any information on your application forms? No.

1A. Irrelevant: Are you now in \_\_\_\_\_? Yes

5. Comparison: Before -----, did you ever violate any official rules or regulations? No.

6. Relevant: Are you omitting any information from your application forms? No.

7. Comparison: Prior to this year, did you ever lie about yourself to impress others? No.

## APPENDIX H

### Reviewing Questions

1. During the pretest interview, the LEPET questions are reviewed with the examinee prior to the data collection phase. The following sequence is used in introducing the questions:

- 1.1. Sacrifice Relevant (2,22)
- 1.2. Relevant Questions (4, 6,8,24,26,28)
- 1.3. Comparison Questions (3,5,7,9,23,25,27,29)
- 1.4. Irrelevant Questions (1,1a, 1b, 1d, etc.)

**APPENDIX I**Law Enforcement Pre-Employment Test Questionnaire

1. You will be asked, "Have you ever committed any serious crime?" This includes, but is not limited to the following crimes.

2. Crimes Against Persons: Have you ever committed, planned, covered-up, or participated in any of the following:

	<u>YES</u>	<u>NO</u>
2.2. Manslaughter	_____	_____
2.3. Assault	_____	_____
2.4. Malicious wounding of an individual	_____	_____
2.6. Sexual Exposure	_____	_____
2.7. Kidnapping	_____	_____
2.8. Any crime that caused death or injury to another person	_____	_____

3. Crimes Against Children: Have you ever committed, planned, covered-up, or participated in any of the following:

	<u>YES</u>	<u>NO</u>
3.1. Sexual abuse of a child	_____	_____
3.2. Physical abuse of a child	_____	_____
3.3. Sex with a minor while you were an adult	_____	_____
3.4. The production, sale or distribution of child pornography	_____	_____
3.5. Criminal exploitation of a minor in any way	_____	_____
3.6. Any act that could be considered a crime against a child	_____	_____

4. Crimes Against Property: Have you ever committed, planned, covered-up, or participated in any of the following:

	<u>YES</u>	<u>NO</u>
4.1. Arson	_____	_____
4.2. Burglary of a residence	_____	_____
4.3. Burglary of a business	_____	_____
4.4. Vandalism	_____	_____
4.5. Any act that could be considered a crime against property	_____	_____

5. Theft and White Collar Crimes: Have you ever committed, planned, covered-up, or participated in any of the following:

	<u>YES</u>	<u>NO</u>
5.1. Robbery of a person or business	_____	_____
5.2. Embezzlement	_____	_____
5.3. Credit Card Fraud	_____	_____
5.4. Forgery of checks or documents for monetary gain	_____	_____
5.5. Production, Distribution, or use of false identifications	_____	_____
5.6. Production, distribution of counterfeit currency	_____	_____
5.7. Altering of currency (i.e.: changing a five to a fifty)	_____	_____
5.8. Receiving stolen property	_____	_____
5.9. Extortion or blackmail	_____	_____
5.10. Mail fraud	_____	_____
5.11. Perjury in a court proceeding	_____	_____
5.12. Impersonation of a law enforcement officer	_____	_____
5.13. Computer frauds/Network Intrusions/Virus Introductions	_____	_____
5.14. Bank frauds	_____	_____
5.15. Theft of government funds or property	_____	_____
5.16. Insurance frauds	_____	_____

6. Vice and Miscellaneous Crimes: Have you ever committed, planned, covered-up, or participated in any of the following:

	<u>YES</u>	<u>NO</u>
6.1. Trafficking or distribution of any illegal drugs	_____	_____
6.2. Prostitution of yourself or any other person	_____	_____
6.3. Sexual contact with animals for gratification	_____	_____
6.4. Abuse of animals	_____	_____
6.5. Shoplifting	_____	_____
6.6. Vehicular hit and run (whether a person was injured or not)	_____	_____
6.7. Weapons violations	_____	_____
6.8. Any other acts, conspiracies, or solicitations in which you could be punished for by imprisonment, whether you were criminally charged or not.	_____	_____

**APPENDIX J**

Law Enforcement Pre-Employment Test Questionnaire

1. You will be asked, “Are you intentionally withholding any information about your involvement with illegal drugs?” This includes, but is not limited to the following drugs.

	YES	NO
Marijuana	_____	_____
Hash	_____	_____
Heroin	_____	_____
Cocaine	_____	_____
Ecstasy	_____	_____
Crack	_____	_____
Methamphetamines	_____	_____
Hallucinogens (mushrooms, LSD, PCP)	_____	_____
Speed	_____	_____
Steroids	_____	_____
Recreational use of prescription medications	_____	_____
Drugs of similar nature	_____	_____
Possession of any illegal drug(s)	_____	_____
Manufacturing of any illegal drug(s)	_____	_____
Cultivating of any illegal drug(s)	_____	_____
Distribution of any illegal drug(s)	_____	_____

2. Guidelines (Usage)

- Smoke snort, inject, or eat
- Being informed by another individual after the fact that you used an illegal substance (non-intentional).

3. Guidelines (Not Usage)

- Second hand smoke
- Presence at a concert, party or automobile while others use illegal drugs

## CBP/CAD LEPET TEST QUESTION SCOPING GUIDE

The following guidance is submitted in accordance with Defense Academy for Credibility Assessment – Law Enforcement Pre-Employment Test (DACA-LEPET) section 7.2 , which states, “During the review of the Phase I and Phase II relevant questions, the examiner will ensure that all key topical areas for each question are thoroughly explained to the examinee.”

The Credibility Assessment Division (CAD) recommends the following strategy for scoping relevant questions in the CBP/CAD Law Enforcement Pre-Employment Test:

- When explaining key topical areas, the CAD discourages introducing the specifically worded relevant questions until the topic has been sufficiently discussed with the examinee. For example:
  - Introduce the topic and discuss it.
  - Conduct general explanations and queries of the topic.
  - Elicit applicable topic information **BEFORE** asking the specifically worded test question.
  - Do not proceed until the examinee agrees with your stated understanding of what was discussed relative to the topic. If there is no agreement regarding the topic, continue to explain and elicit information until you have a mutually agreed understanding of what was said about the topic.

LEPET II (Suitability) will be run as the first series and LEPET I (National Security) will be run as the second series.

### LEPET Series II (Suitability)

#### **R24 - Are you withholding information about your involvement in any serious crime?**

(Reference – DACA-LEPET Appendix C section 1.1)

- The scope of this question shall cover all crimes for which an examinee has been arrested and any serious crime(s) they have committed that have gone undetected. The key issues to be covered are all detected and undetected crimes that have or could have resulted in an arrest, indictment, prosecution, conviction, sentence, loss of respect, reputation or standing in the community. ***All felony crimes and serious misdemeanors, to include crimes against a person or property shall be targeted.*** In addition, any incident where an examinee has been questioned or detained by the police as a suspect in a serious crime shall be targeted. Involvement in minor criminal activity as a juvenile shall not be targeted unless the examinee is a juvenile. In cases involving juveniles, the examiner should document all minor criminal activity for the last three years. ***Serious criminal activity will be documented for the examinee's entire life.*** Each examiner shall provide the examinee with an explanation of serious crimes that will serve as examples of criminal activity which will include felonies and serious misdemeanors. Specific

attention should be paid to ensure inclusion of sexual-related crimes, since the overall PDD examination has no questions regarding sexual misconduct. Examples of sexual-related crimes include rape, child sexual abuse, voyeurism, incest, exhibitionism, bestiality, etc. Sexual activity between consenting adults (legally defined as a crime or not) shall not be targeted or reported unless it resulted in an arrest or police involvement.

- Refer to DACA-LEPET Appendix I (LEPET Test Questionnaire) or the approved CBP/CAD LEPET Suitability Issues List when reviewing serious crimes. Inform the examinee that the list is not all inconclusive and give the examinee an opportunity to address any serious crimes that they may have been involved in that were not listed.
- ❖ If DACA-LEPET Appendix I (LEPET Test Questionnaire) is used, refrain from scoping illegal drug activity (Section 6.1) in the serious crime question.

## **R26 – Are you concealing any illegal drug activity?**

*(Reference – DACA-LEPET Appendix C section 2.1, et al.)*

- Contrary to DACA-LEPET Appendix C section 2.1, the question regarding personal involvement with illegal drugs is designed to verify the examinee’s involvement in any illegal drug activity throughout the examinee’s entire life. The question is NOT limited to prescribed dates (five (5) years prior to the PDD, or seven (7) years prior to submitting the e-QIP).
- The question regarding the examinee’s involvement in any illegal drug activity shall significantly target:
  1. Personal use or experimentation, to include one-time use, faked usage or multiple usages.
  2. Buying illegal drugs or narcotics (contributing towards the purchase of illegal drugs or narcotics shall be included as a relevant issue and shall be reviewed when discussing purchases of illegal drugs or narcotics).
  3. Growing or manufacturing illegal drugs or narcotics.
  4. The distribution of illegal drugs or narcotics to include transportation, possession, storing, selling, or assisting in the sale of illegal drugs or narcotics.
  5. Misuse of prescription medication for recreational purposes. Minor use of another person’s prescription medication for a legitimate medical purpose shall not be targeted with this question.
- The question regarding the examinee’s involvement in any illegal drug activity shall NOT target:
  1. Second hand smoke (even if it results in a “contact” buzz).
  2. Presence at a concert, party, or in an automobile while others use illegal drugs.



- Refer to DACA-LEPET Appendix J (LEPET Test Questionnaire) or the approved CBP/CAD LEPET Suitability Issues List when reviewing illegal drug activity. Inform the examinee that the list of illegal drugs is not all inconclusive and give the examinee an opportunity to address any drugs of a similar nature (including use of “street” drugs) to get high.

**R28 - Are you deliberately falsifying any information on your application forms?**

*(Reference – DACA-LEPET Appendix C section 3.1, et al.)*

- The key issues to be targeted with this question are:
  1. Deliberately listing false information on the employment documents with the intent of deceiving or misleading Government representatives responsible for employment decisions, security investigations, or clearance actions.
  2. Deliberately leaving requested information off of the employment documents with the intent of deceiving or misleading Government representatives responsible for security investigations or clearance actions.
  3. Divided loyalty – Has anyone directed the applicant to seek employment with CBP to further their illegal or violent intentions (drug cartel, human trafficking organization, gang).
  4. Any BI or Special information present in the file.
  5. The question will not target honest or unintentional mistakes when completing the employment documents.
- Falsified or omitted information of concern on the individual’s application forms include:
  1. Place of Birth, if outside the US.
  2. Dual Citizenship/Immigration Status.
  3. Addresses or residences.
    - ✓ **To be eligible for CBP employment, applicants must have resided in the U.S. continuously for the past three years.**
  4. Employment.
  5. Foreign born relatives or associates.
  6. Military history.
  7. Foreign activities.
  8. Medical or health concerns, including mental health consultation.
  9. Traffic citations in excess of \$300 or alcohol/drug related traffic citations.
  10. Past/current security clearances and with whom.
  11. Financial problems (bankruptcy, tax lien, foreclosure).
- Refer to the approved CBP/CAD LEPET Suitability Issues List regarding information of concern when reviewing an individual’s application forms for any deliberate falsifications or omissions.

**LEPET Series I  
(National Security)**

**R4 – Have you had any unauthorized foreign contacts?**

- Secret, unauthorized contact with a non-U.S. citizen or someone (U.S. citizen or non-U.S. citizen) who represents a foreign government, power, group or organization.

1. Personal foreign contacts

- Routine contact via phone, email, written, correspondence.
- Plans for future contact.
- Shared personal affinity or connection including sexual intimacy.
- Shared living space in the U.S. or abroad (including overnight stays by foreign national).
- Illegal activity with a foreign national
  1. Assisting any foreign national to illegally enter the U.S.
  2. Involvement with any foreign national that has been/is involved with any illegal activity in the US or abroad (e.g. Drug Cartel).
  3. Arrested, detained, interrogated or interviewed by foreign law enforcement or a foreign intelligence service.
  4. Personally aware of any foreign national involved in anything illegal or criminal.

2. Business foreign contacts

- Own a business in a foreign country.
- Have foreign nationals as business partners.
- Own rental property in a foreign country.
- Foreign investments.
- Foreign bank accounts.

❖ **For any identified unauthorized FNC, meaning those FNC that the examinee knows or suspects to be involved in illegal activity, complete a FNC form.**

- Hidden Foreign Intelligence Service (FIS) or Security Service contact
  1. Approaches by a FIS to engage in espionage.
  2. Offering to engage in espionage activity.
  3. Recruitment for espionage activity.
  4. Training provided by a FIS for espionage activity.
  5. Compensation for espionage activity.
- Contact you want to hide from the examiner, or the U.S. Government.
- Contact that could result in a potential or real adverse impact on U.S. national security.
- Unreported visits to foreign embassies, consulates, or facilities.

**R6 – Have you deliberately compromised classified information?***(Reference – DACA-LEPET Appendix B section 2.1, et al.)*

- This question concerns the release (giving or selling) of classified information or material to an unauthorized person. It also concerns taking classified information from an authorized location and storing it in an unauthorized location.
- An unauthorized person is someone not appropriately cleared to receive the classified information or material. An unauthorized location is any location that is not specifically designated for the storage of classified information by the U.S. Government.
- The key issues to be targeted with this question are compromises for:
  1. Espionage.
  2. Sabotage.
  3. To harm the U.S.
  4. To embarrass the U.S.
  5. To aid a foreign power.
  6. Monetary/personal gain.
  7. Release to media.
  8. Intentional/deliberate disclosure with forethought.
  9. Incidents of inadvertent disclosures or need-to-know violations (\*\*Absent exposure to an unauthorized person, this would most likely be viewed as a security violation).
- For the purpose of scoping this question, the word “classified” means U.S. Government information only, containing any of the following classifications:
  - CONFIDENTIAL
  - SECRET
  - TOP SECRET (including SCI)

**R8 – Have you been involved in any terrorist activity?***(Reference – DACA-LEPET Appendix B section 3.1, et al.)*

- Terrorist activity is the calculated use of violence or threat of violence to induce fear; intended to coerce or to intimidate governments or societies in the pursuit of goals that are generally political, religious or ideological. In simple terms, terrorist activity is violent activity that is politically motivated. Subversive activity is any activity that would interfere with, undermine, or deny any individual of their rights guaranteed under the U.S. Constitution; or could result in or lead to the violent or illegal overthrow of the U. S. Government. This question is designed to determine personal involvement in subversive or terrorist activity or support to subversive or terrorist groups. The key elements of subversive and terrorist activity to be included in the definition of the question are:

1. Approaches to engage in subversive or terrorist activity.
2. Contact with subversive or terrorist groups or their representatives.
3. Offering to engage in subversive or terrorist activity.
4. Recruitment, training, or planning for subversive or terrorist activity.
5. Committing or aiding in subversive or terrorist activity.
6. Providing support to subversive or terrorist organizations (i.e. money, equipment, personal time, logistic support, etc.).
7. Compensation (i.e., money, status, personal/family gain) for committing subversive or terrorist acts or support to subversive or terrorist organizations.
8. Unreported knowledge of subversive or terrorist activity.

# CAD LEPET BREAKOUT/BREAKDOWN QUESTIONS GUIDE

## Introduction

- Defense Academy for Credibility Assessment – Law Enforcement Pre-Employment Test (DACA-LEPET) guidance should be followed when conducting any breakout or breakdown testing, unless modified by this guidance.
- The LEPET breakout and breakdown questions and testing formats identified in this guidance have been approved for use by CAD management.
- The default breakout and breakdown exam formats will be the DACA approved two question AFMGQT format (Version 1) and the CAD Director approved modified three question AFMGQT format.

### Two Question AFMGQT Format (Version 1):

I - SR - C - R - C - I - R - C

### Three Question Modified AFMGQT Format:

I - SR - C - R - C - R - I - C - R - C

*\*DACA requires CQ and/or RQ to be rotated on the second and fourth chart (if necessary) in each series.*

- Use of any other question strings or testing formats requires prior approval of CAD management.
- All rerun, breakout and breakdown questions will be numbered sequentially starting with the number one (1). For example, the two question AFMGQT (Version 1) will be numbered (1, SR2, C3, R4, C5, R6, C7) and the three question modified AFMGQT described above will be numbered (1, SR2, C3, R4, C5, R6, C7, R8, C9).
- When in doubt about question construction or appropriate exam format, consult with CAD management.

## LEPET II - Suitability

### R24

R24: Serious Crime – *No Admissions (Multiple Issue Breakout)*

- Have you committed any serious crime?

R24: Serious Crime – ***With Admissions (Multiple Issue Breakout)***

- Are you concealing/hiding your involvement with any serious crime?

**OR**

- Have you committed any serious crime that we have not discussed?

R24: Serious Crime – ***Breakdown for R24 ONLY***

- \*R4 – Are you concealing your involvement with any serious property crime?

**OR**

Are you concealing your involvement with any serious crime against a person?

R6 – Have you committed any other type of serious crime?

\*If the examinee has made an admission(s) involving a property crime, use the question concerning property crimes. If the examinee has made an admission(s) involving a crime against a person, use the question concerning crimes against a person. If the examinee has made no serious crime admission or has admitted to both types of serious crimes, the examiner has the discretion as to which R4 they would like to use.

**R26**

R26: Illegal Drug Activity – ***No Admissions (Multiple Issue Breakout)***

- Have you been involved in any illegal drug activity?

**OR**

- Have you withheld any information regarding your involvement with illegal drugs?

R26: Illegal Drug Activity – ***With Admissions (Multiple Issue Breakout)***

- Are you hiding/withholding your involvement with illegal drugs?

**OR**

- Are you hiding/withholding any information regarding your involvement with illegal drugs?

R26: Illegal Drug Activity – ***Breakdown for R26 ONLY***

R4 – Are you hiding any illegal drug use?

R6 – Are you withholding information regarding any other type of illegal drug activity?

**R28**

R28: Application Accuracy – *No Admissions (Multiple Issue Breakout)*

- Did you intentionally falsify any information on your application forms?

R28: Application Accuracy – *With Admissions (Multiple Issue Breakout)*

- Are you intentionally withholding/hiding/concealing any information from your application forms?

R28: Application Accuracy – *Breakdown for R28 ONLY*

R4 – Are you deliberately omitting any information from your application forms?

R6 – Are you intentionally falsifying any information on your application forms?

**LEPET I - National Security**

**R4**

R4: Unauthorized Foreign Contacts – *No Admissions (Multiple Issue Breakout)*

- Have you withheld/hid/concealed any unauthorized foreign contacts?

R4: Unauthorized Foreign Contacts – *With Admissions (Multiple Issue Breakout)*

- Are you hiding/withholding/concealing any unauthorized foreign contacts?

R4: Unauthorized Foreign Contacts – *Breakdown for R4 ONLY*

R4 – Are you hiding any unauthorized personal foreign contacts?

R6 – Are you concealing any unauthorized business foreign contacts?

**R6**

R6: Compromising Classified Info. – *No Admissions (Multiple Issue Breakout)*

- Have you intentionally mishandled any classified information?

R6: Compromising Classified Info. – *With Admissions (Multiple Issue Breakout)*

- Are you intentionally concealing involvement in the compromise of any classified information?

R6: Compromising Classified Info. – ***Breakdown for R6 ONLY***

R4 – Are you hiding any unauthorized disclosure of classified information?

R6 – Are you concealing any intentional storage of classified information in an unauthorized location?

**R8**

R8: Terrorist Activity – ***No Admissions (Multiple Issue Breakout)***

- Have you committed any terrorist acts?

R8: Terrorist Activity – ***With Admissions (Multiple Issue Breakout)***

- Are you withholding/concealing information regarding your involvement in any terrorist activity?

**OR**

- Have you committed any terrorist acts that we have not discussed?

R8: Terrorist Activity – ***Breakdown for R8 ONLY***

R4 – Are you withholding information regarding your involvement in any terrorist activity?

R6 – Are you concealing your affiliation with any terrorist group?



## **QUICK REFERENCE SHEET**

The following rerun, breakout and breakdown question examples are provided for quick reference when contemplating question construction for a breakdown series.

### **LEPET II - Suitability**

*Example 1:* The examinee is No Opinion or Inconclusive to all three relevant questions in LEPET II (Suitability) and minor admissions are made to illegal drug activity.

#### **LEPET Rerun Questions:**

R4 - Have you committed any serious crime?

R6 - Are you hiding your involvement with illegal drugs?

R8 - Are you intentionally withholding any information from your application forms?

*Example 2:* The examinee is Inconclusive to R26 and R28 in LEPET II (Suitability) and NSR to R24. The examinee admitted to minimal marijuana usage in high school.

#### **LEPET Breakout Questions:**

R4 - Are you hiding your involvement with illegal drugs?

R6 - Are you concealing any deliberate falsification of your application forms?

*Example 3:* The examinee is Inconclusive to R24 in LEPET II (Suitability) and NSR to R26 and R28. The examinee admitted to four unreported instances of domestic violence.

#### **LEPET Breakdown Questions:**

R4 - Are you concealing your involvement with any serious crime against a person?

R6 - Have you committed any other type of serious crime?

### **LEPET I – National Security**

*Example 4:* The examinee is No Opinion or Inconclusive to all three relevant questions in LEPET I (National Security) and only minor admissions (unauthorized access or security violations) are made regarding compromising classified information.

#### **LEPET Rerun Questions:**

R4 - Have you withheld any unauthorized foreign contacts?

R6 - Are you intentionally concealing involvement in the compromise of any classified information?

R8 - Have you committed any terrorist acts?

*Example 5:* The examinee is NSR to R6 and Inconclusive to R4 and R8 in LEPET I (National Security). No admissions were made.

**LEPET Breakout Questions:**

R4 - Have you withheld any unauthorized foreign contacts?

R6 - Have you committed any terrorist acts?

*Example 6:* The examinee is Inconclusive to R6 in LEPET I (National Security) and NSR to R4 and R8. The examinee made a minor admission to compromising classified information (unauthorized access or security violation).

**LEPET Breakdown Questions:**

R4 - Are you hiding any unauthorized disclosure of classified information?

R6 - Are you concealing any intentional storage of classified information in an unauthorized location?

## **CBP-CAD LEPET Suitability Issues List**

### **SERIOUS CRIMES**

#### **Crimes Against Persons**

Have you ever caused the death of anyone? (accident or intentional)  
Assault (criminal intent, non-self defense, domestic violence)  
Malicious wounding (weapon used, skin broken)  
Sexual Assault (statutory and forcible)  
Exposure (intentional public display)  
Kidnapping or abduction (holding someone against their will – ransom)  
Sexual or Physical abuse of a child  
Production, possession, distribution, or sale of child pornography  
Prostitution of self or any other person  
Impostation of a law enforcement official  
Robbery (person or business)  
Identity theft  
Human smuggling/trafficking

#### **Crimes Against Property**

Arson  
Burglary (residence or business)  
Grand larceny (High \$ items – vehicles, jewels, tech. equip.)  
Embezzlement (theft from employer – cash & goods in excess of \$100)  
Fraud (credit card, bank, mail, insurance)  
Extortion or Blackmail  
Receiving stolen property (fence goods)  
Possession, Production, Altering, or Distributing false ID's or currency  
Vehicular hit and run involving serious damage (to person or property)  
Shoplifting (since 18<sup>th</sup> birthday)  
Computer crimes (network intrusion, virus introduction, hacking)

#### **Miscellaneous Crimes**

Weapons violations  
Cruelty to animals (sadistic/physical abuse/bestiality)  
Any other serious crime that you have not discussed

### **ILLEGAL DRUG ACTIVITY**

#### **Illegal Drugs**

Marijuana  
Hash  
Cocaine  
MDMA (Ecstasy)  
Heroin  
Crack  
Methamphetamines  
Hallucinogens (Mushrooms, LSD, Acid, PCP)  
Speed  
Steroids (Anabolic, Testosterone, HGH)  
Inhalants (Whipits)  
Recreational use of prescription medications  
Drugs of a similar nature to get high

#### **Guidelines (Usage)**

Smoking, snorting, injecting, or eating  
Mouth, ears, eyes, anus, arms, legs (any ingestion into the body)  
Being informed by another after the fact that you ingested an illegal drug

#### **Guidelines (Illegal Drug Activity)**

Purchase of any illegal drug(s)  
Sale of any illegal drug(s)  
Possession of any illegal drug(s)  
Production of any illegal drug(s)  
Manufacturing of any illegal drug(s)  
Distribution of any illegal drug(s)

#### **NOT a Usage or Illegal Drug Activity**

Second-hand smoke  
Presence at a concert, party, or in an car where others are using illegal drugs

### **DELIBERATE FALSIFICATION OF APPLICATION FORMS**

#### **Deliberate falsification or omission of:**

Place of birth  
Citizenship (dual?) / Immigration status  
Addresses or residences (continuous past 3 yrs.)  
Medical / Health concerns  
Employment  
Education  
Military history (type of discharge, disciplinary actions)  
Criminal history  
Personal Identifiers (self and family members)  
Traffic citations in excess of \$300 or alcohol/drug related traffic citations  
Past/current security clearances (classification / with who?)  
Financial problems (bankruptcy, foreclosure, tax liens)  
Has anyone directed you to seek employment with CBP to further their illegal or violent intentions? (drug cartel, human trafficking org., gang)

## **CBP-CAD LEPET National Security Issues List**

### **UNAUTHORIZED FOREIGN CONTACTS**

- ❖ Secret contact with a non-U.S. citizen or someone (U.S. citizen or non-U.S. citizen) who represents a foreign government, person, or group.

#### **Personal Foreign Contacts**

Routine contact via phone, email, written, correspondence.

Plans for future contact.

Shared personal affinity or connection including sexual intimacy.

Shared living space in the U.S. or abroad (including overnight stays by foreign national).

Illegal activity with a foreign national

Assisting any foreign national to illegally enter the U.S.

Involvement with any foreign national that has been/is involved with any illegal activity in the US or abroad (e.g. Drug Cartel).

Arrested, detained, interrogated or interviewed by foreign law enforcement or a foreign intelligence service.

Personally aware of any foreign national involved in anything illegal or criminal.

#### **Business Foreign Contacts**

Own a business in a foreign country.

Have foreign nationals as business partners.

Own rental property in a foreign country.

Foreign investments.

Foreign bank accounts.

#### **Hidden FIS or Security Service Contact**

Approaches by a FIS to engage in espionage.

Offering to engage in espionage activity.

Recruitment for espionage activity.

Training provided by a FIS for espionage activity.

Compensation for espionage activity.

### **DELIBERATE COMPROMISE OF CLASSIFIED INFORMATION**

- ❖ Giving or selling classified (Confidential, Secret, TS) USG information or material to persons not authorized to receive it.
- ❖ Unauthorized removal of classified information from a secure environment.

#### **Motivations for Compromising Classified Information**

Espionage.

Sabotage.

To harm the U.S.

To embarrass the U.S.

To aid a foreign power.

Monetary/personal gain.

Release to media.

Intentional/deliberate disclosure with forethought.

Incidents of inadvertent disclosures or need-to-know violations

### **TERRORIST ACTIVITY**

- ❖ This question is designed to determine personal involvement in subversive or terrorist activity or support to subversive or terrorist groups.
- ❖ Terrorist activity is the calculated use of violence or threat of violence to induce fear; intended to coerce or to intimidate governments or societies in the pursuit of goals that are generally political, religious or ideological.
- ❖ Subversive activity is any activity that would interfere with, undermine, or deny any individual of their rights guaranteed under the U.S. Constitution; or could result in or lead to the violent or illegal overthrow of the U. S. Government.

#### **Involvement**

Approaches to engage in subversive or terrorist activity.

Contact with subversive or terrorist groups or their representatives.

Offering to engage in subversive or terrorist activity.

Recruitment, training, or planning for subversive or terrorist activity.

Committing or aiding in subversive or terrorist activity.

Providing support to subversive or terrorist organizations (i.e. money, equipment, personal time, logistic support, etc.).

Compensation (i.e., money, status, personal/family gain) to subversive or terrorist organizations.

Unreported knowledge of subversive or terrorist activity.

## **CBP/CAD COUNTERMEASURE GUIDE**

The following guidance is submitted in accordance with Defense Academy for Credibility Assessment (DACA) – Federal Handbook, Chapter 18 (Countermeasures) – Section 18.1 et al.

The Credibility Assessment Division (CAD) recommends the following procedures to address countermeasure activity when administering CBP/CAD polygraph examinations.

### **PRE-TEST PROCEDURES**

*(Reference – DACA Federal Handbook, Chapter 18, section 18.3. et al.)*

- To assist in conducting a thorough examination, an examiner should elicit information from the examinee during the pretest interview regarding the examinee’s knowledge of the polygraph process. This should include any exposure to, knowledge of, and/or polygraph advice received, as well as whether the subject has conducted any research or inquiries into polygraph procedures. This discussion should be accomplished in a non-accusatory manner consistent with DACA instruction.
- During the review of the CAD Polygraph Examination Consent form, advise the examinee that any deliberate efforts to manipulate the physiological data being collected during the polygraph examination may result in the termination of the examination.
- During the question review portion of the polygraph examination, the examiner will have the option of reviewing irrelevant questions as comparison (or control) questions. The examiner also has the option of using a time bar on one (1) of the irrelevant questions (e.g. Before this year, did you ever attend high school?) being used.

### **MOVEMENT SENSOR DEVICES (MSD)**

- A MSD is designed to detect covert movements during a polygraph examination. The MSD that is utilized as a chair pad will be used during all CAD polygraph examinations. All other MSD are optional (e.g. foot and arm).
- When a MSD is employed, sensitivity settings for the component should allow for optimal tracings.
- For all CAD polygraph examinations, a brief explanation of the MSD should be made during the polygraph process (Instrumentation).
- When evaluating the MSD, the timing of deliberate physiological manipulations are a consideration (i.e. at comparison questions or at irrelevant questions) when attempting to identify the existence of countermeasures during a polygraph examination. The timing and frequency of these atypical movement patterns affords an opportunity to determine if they are deliberate and tactical or simply chance.

## IN-TEST DATA COLLECTION

- All CAD examiners should record at least 15 seconds of stabilized tracings utilizing all required components before the X and after the XX on a chart.
- All CAD polygraph examiner's should provide the examinee with detailed in-test instruction before conducting the ACQT. Specifically, each examinee should be told in clear and unmistakable terms:
  1. How to sit during the examination.
  2. How to answer questions during the examination.
  3. How to behave during the examination.
- Observation of the examinee is critical during the in-test data collection portion of the polygraph examination so that the examiner can watch for countermeasures that may not be easily detected on the charts (e.g. mental countermeasures or biting the tongue/cheek).
  - ❖ Remember that you can have an examinee repeat the last word of your question before they respond with their answer if countermeasures are suspected.
- When countermeasures are suspected, polygraph testing should routinely continue until the testing protocol has been completed. Completion of the test series (***three presentations of each relevant question***) may allow for sufficient physiological data to identify patterns necessary to establish or refute the employment of countermeasures. If an examination is terminated prior to completion of the protocol due to suspected countermeasures, the examiner should provide a rationale for such action.
- When an examiner believes that countermeasure signatures are present, CAD management encourages the examiner to forward their charts to CAD Quality Control for an immediate blind review, prior to proceeding as if countermeasure activity were present.

## OPINIONS

- A No Opinion - Countermeasures decision will be made in the presence of suspected or confirmed countermeasures.

## POST-TEST PROCEDURES

- Once the examiner has suspected countermeasure activity, confront the examinee about withholding adjudicative information BEFORE interrogating about the suspected countermeasure activity.
- CAD polygraph examiner's should strive to obtain the following elements to obtain a confirmed countermeasure admission:

1. What did the examinee do (identify the type of countermeasure(s) used) to manipulate his physiology.
  2. Where did the examinee learn the countermeasure(s) that they employed (e.g. Internet, Research, Friends, Television). Did they pay for the information. Did they practice the countermeasure(s) employed prior to the polygraph examination.
  3. When did the examinee perform the countermeasure(s). What type of questions were targeted, or were they employed throughout the entire examination.
  4. Have the examinee acknowledge that they were intentionally using countermeasures in an attempt to change their physiological response during the examination.
  5. Have the examinee explain why they employed countermeasures. What information were they trying to conceal.
- It is not necessary to obtain all of the elements listed above for a countermeasure admission, but try to focus on the examinee's intent (they were intentionally manipulating their physiology to alter the results of the examination).
  - After eliciting a confirmed countermeasure admission, all CAD examiners must confront the examinee about what the adjudicative information was that they were attempting to conceal by employing countermeasures.
  - The details provided by an examinee regarding employing countermeasures during a CAD polygraph examination should be documented by the examinee in a written statement.
  - DACA recommends that all examiner's keep abreast of countermeasure issues and information. Examiner's should routinely attend training, access professional journals and internet sources (including anti-polygraph web sites) to maintain a high degree of awareness of countermeasure techniques advocated, as well as methods to deter and detect such efforts.
  - REMEMBER – The majority of CAD polygraph examinations will not contain any countermeasure issues and it is important that CAD examiner's stay prepared, not paranoid about countermeasures.

### **DACA REVIEW OF EXAMINATIONS**

- CAD Examiner's should complete the Countermeasure Debrief Sheet provided by DACA (*included in CAD Forms*) and submit it with the remainder of the polygraph file to CAD Quality Control for review when an examiner reports confirmed countermeasures.
- When a CAD examiner reports confirmed countermeasures, the audio portion of the examination and any written statement obtained are reviewed to determine if the admission meets the elements necessary to make it a confirmed countermeasures case. The following categories are provided for guidance when a countermeasure admission requires review and classification:

1. Confirmed Countermeasures: Clear countermeasure signatures are present and the examinee admits that they intentionally manipulated their physiology to alter the results of the examination. If the examinee admits this, then the examiner should strive to obtain the elements of the countermeasure activity as described above.
  2. Suspected Countermeasures: Clear countermeasure signatures are present, however, the examinee does not admit to intentionally manipulating their physiology to alter the results of the examination.
- Confirmed countermeasure cases are forwarded to DACA for participation in their countermeasure data collection effort.
  - Suspected countermeasure cases may be forwarded to DACA by Quality Control for a detailed evaluation (second opinion).

### **QUICK REFERENCE SHEET**

Confirmed Countermeasure Example: After the completion of the ACQT and three presentations of each relevant question (at minimum), the examiner identifies clear countermeasure signatures.

1. The examiner e-mails the charts to CAD Quality Control for review. CAD Quality Control confirms the presence of countermeasure signatures.
2. The examiner confronts the examinee about the relevant issues.
3. The examiner confronts the examinee about the suspected countermeasure activity and obtains an admission confirming the suspected countermeasure activity.
4. The examiner confronts the examinee about the relevant issues again in an effort to determine what information the examinee was trying to conceal by employing countermeasures.
5. The examiner verbally reviews all of the relevant admissions and the confirmed countermeasure admission with the examinee.
6. The examiner obtains a written statement from the examinee detailing the confirmed countermeasure admission and discontinues testing.
7. The examiner completes the Countermeasure Debrief Sheet provided by DACA (*included in CAD Forms*) and submits it with the remainder of the polygraph file to CAD Quality Control (QC) for review.
8. The examination opinion is No Opinion – Countermeasures.

Suspected Countermeasure Example 1: After the completion of the ACQT and three presentations of each relevant question (at minimum), the examiner identifies clear countermeasure signatures.

1. The examiner e-mails the charts to CAD Quality Control for review. CAD Quality Control confirms the presence of countermeasure signatures.
2. The examiner confronts the examinee about the relevant issues.



3. The examiner confronts the examinee about the suspected countermeasure activity and does not obtain an admission confirming the suspected countermeasure activity.
4. The examiner verbally reviews all of the relevant admissions with the examinee and discontinues testing.
5. The examination opinion is No Opinion – Countermeasures.
6. CAD QC concurs with the No Opinion – Countermeasure opinion and may forward the results to DACA for a detailed evaluation (second opinion).

*Suspected Countermeasure Example 2:* After the completion of the ACQT and three presentations of each relevant question (at minimum), the examiner identifies possible countermeasure signatures.

1. The examiner e-mails the charts to CAD Quality Control for review. CAD Quality Control confirms the presence of countermeasure signatures.
2. The examiner confronts the examinee about the relevant issues.
3. The examiner confronts the examinee about the suspected countermeasure activity and does not obtain an admission confirming the suspected countermeasure activity.
4. The examiner verbally reviews all of the relevant admissions with the examinee and discontinues testing.
5. The examination opinion is No Opinion – Countermeasures.
6. CAD QC non-concurs with the No Opinion – Countermeasure opinion because no clear countermeasure signatures exist.
7. CAD QC evaluates the data and the examinee may be scheduled for further polygraph testing.

*No Significant Response Example 1:* An examiner evaluates an examination to contain No Significant Responses (NSR). The examination is submitted to CAD Quality Control for review and two independent Quality Control reviews identify the presence of countermeasure signatures.

1. A Non-Concur opinion is rendered by CAD Quality Control and the examiner is contacted to discuss the presence of countermeasure signatures.
2. The data collected containing the countermeasure signatures will be evaluated as No Opinion – Countermeasures by CAD Quality Control.
3. The examiner will schedule additional testing to resolve the countermeasure activity.

# DEFENSE ACADEMY FOR CREDIBILITY ASSESSMENT

## PDD 504 METHODS I

**TEST FOR  
AND SABOTAGE  
(TES)**



**ESPIONAGE**

**Spring 2010**

This supersedes previous versions of this handout.

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## I. Introduction

1.1. The Test for Espionage and Sabotage (TES) is a standardized psychophysiological detection of deception examination (polygraph) that is part of the counterintelligence (CI) screening process. The TES format provides a minimally intrusive means to assess the credibility of an examinee's answers to questions used in security pre-employment and periodic polygraph examinations, and to elicit information related to national security issues.

1.2. The following is a list of definitions used in this manual:

1.2.1. Significant Response (SR): Consistent physiological responses to the relevant questions in a multiple issue polygraph (MIP).

1.2.2. Deception Indicated (DI): Consistent physiological responses to the relevant questions in a probable lie comparison (PLC) question format.

1.2.3. No Significant Response (NSR): There is a lack of consistent physiological responses to the relevant questions in a MIP.

1.2.4. No Deception Indicated (NDI): There is lack of consistent physiological responses to the relevant questions in a PLC format.

1.2.5. No Opinion (NO): Any examination that is not NSR/NDI or SR/DI.

1.2.6. Examination: The entire procedure, including all phases of a polygraph examination and, in the case of TES, both sub-tests, during a testing session.

1.2.7. Sub-test: The TES consists of two sub-tests. Each sub-test contains two relevant questions. Whichever sub-test is administered first those relevant questions must be resolved before the next sub-test can be administered.

1.2.8. Sequence: The order in which the questions will be asked.

1.2.9. Presentation: A single reading of a question.

1.2.10. Presentation score: The numerical evaluation for a specific relevant presentation.

1.2.11. Question score: The sum of the three presentation scores for a relevant question.

1.2.12. Sub-test score: The sum of the two relevant question scores.

1.2.13. Sub-test decision: The decision for a sub-test.

1.2.14. Examination decision: The decision for the entire examination (both sub-tests).

1.2.15. Phase I: Pre-test interview

1.2.16. Phase II: Data collection

1.2.17. Phase III: Data analysis

1.2.18. Phase IV: Post-test interview

1.2.19. Multiple Issue Polygraph (MIP): The TES format is a MIP used to assess the credibility of answers to security questions. MIP's are not an exclusive method for testing credibility because they are required to address multiple relevant issues in a single series. To maximize accuracy and utility, the *successive hurdles* model should be used when NO or SR decisions have been reached (Meehl & Rosen, 1955; Krapohl & Stern, 2003).

1.2.20. Successive Hurdles: This model is part of the CI screening process that entails the use of not just one polygraph examination, but a series of polygraph examinations, with each successive one having better specificity than the previous (Meehl & Rosen, 1955; Krapohl & Stern, 2003). For TES this means that following a post-test interview, the second polygraph examination should be a different format and more narrow in focus than the initial screening exam. In order to accomplish successive hurdles correctly the polygraph examiner must have intimate knowledge of the essential elements for each security topical area.

1.2.21. Credibility Assessment: This is a multi-disciplinary field of existing, as well as potential techniques and procedures to assess truthfulness. Credibility assessment relies on physiological reactions and behavioral measures to test the agreement between an individual's memories and statements.

1.2.22. CI Screening Process: This process begins with the pretest interview (Phase I) and continues until all security issues are resolved. The CI screening process can take several days depending on whether examinee continues to provide reportable information. The successive hurdles model identified in 1.2.20 above is an integral part of the CI screening process.

1.2.23. Elicitation Interview: The word *elicitation* means to "draw out something hidden". The TES pretest interview, using non-threatening elicitation techniques provides examinee an opportunity to disclose hidden information.

1.2.24. Expanded Interview: This is an initial series MIP non-confrontational post-test interview conducted after an SR or NO decision. The Expanded Interview uses forensic tools based on science to garner a partnership between examinee and examiner for resolving issues relevant to the salient security topic.

## 2. Polygraph Examiners Authorized to Conduct TES Examinations

2.1. TES examinations shall only be conducted by federal polygraph examiners who have received specialized TES training at DACA. Intern polygraph examiners may conduct TES examinations under the auspices of federal examiners certified to conduct TES examinations.

2.2. In the event a polygraph examiner begins but is unable to complete a polygraph examination, in most cases another examiner should not complete the examination, that day. The examinee should be rescheduled for another day, at which time another or the same examiner will conduct the examination. If a sub-test was successfully completed prior to the termination of the previous session, that sub-test need not be repeated.

## 3. Environment

3.1. Polygraph examinations should occur in a suitable examination room. There should be chairs for the examiner and examinee and a table for the polygraph equipment. The examination room should not contain distracting equipment or decorations, and should have a means of controlling the ambient temperature. The room may have an observation window, and at a minimum contain audio recording equipment.

3.2. No one other than the examinee and the polygraph examiner is authorized to be present in the examination room during the first three phases of the polygraph examination. The only exception to this provision is the need for an interpreter. Any person granted an exception must have an appropriate security clearance for the matters to be discussed, and must agree to keep any personal information confidential.

## 4. Equipment

4.1. Polygraph testing may be conducted using any polygraph instrument sanctioned by DOD. Each examiner shall be required to calibrate the instrument in the manner taught by DACA, consistent with manufacturer's specifications and in accordance with DOD policy.

## 5. Interviews

5.1. The TES format and questions are highly standardized to ensure consistency and reciprocity. It is not the intent of the TES process to seek out minor security violations or to identify every foreign contact. However, when such topics are revealed by the examinee they will be investigated so that they do not become a problem during the testing process. The relevant topical areas identified in 13.2.1 and 13.2.2 below are designed to elicit information which can serve either as investigative leads or to provide the basis for further interview to determine if espionage, compromise of classified information, deliberate damage to information or defense systems or terrorism had been committed. The TES elicitation pretest interview will assist in the testing process to determine if any of the relevant security issues have been

committed. An elicitation interview can take place at any time during the polygraph process. Phase IV interviews (hereafter, post-test interview) is to determine why a specific relevant question(s) was significant to the examinee, and to give the examinee an opportunity to provide a reasonable explanation for the significant responses. Additional data collection should not be used in lieu of post-test interview procedures. As with all testing, interviews are conducted in a manner that conveys respect for the examinee and is in no way degrading. Interviews of examinees during any phase of a polygraph examination will not probe any of the following areas unless these issues are revealed by the examinee as having relevance to responses or admissions made in connection with counterintelligence questions posed during the examination:

- 5.1.1. Religious beliefs or affiliations
- 5.1.2. Beliefs and opinions regarding racial matters
- 5.1.3. Political beliefs and affiliations
- 5.1.4. Opinions regarding the constitutionality of legislative policy
- 5.1.5. Use of drugs or alcohol (except for the purposes of assessing suitability)
- 5.1.6. Affiliations with labor unions
- 5.1.7. Sexual matters
- 5.1.8. Finances

5.2. The examinee may terminate the CI screening process at any time. An examinee may request legal counsel at anytime. However, counsel may not be present in the polygraph examination room during any phase of the examination.

## 6. Interview Terminations

6.1. Termination report: Whenever an interview is terminated before the examination has been completed, the polygraph examiner will immediately advise the appropriate supervisory examiner and fully describe the circumstances of the termination in a polygraph report. The report must include the reason(s) for discontinuance, how much of the examination remained, whether or not adequate tests had been conducted from which a diagnostic conclusion may be rendered, the attitude of the examinee, and whether examinee is willing to continue the CI screening process later.

6.2. Examiner termination: A polygraph examiner may terminate an examination for several reasons. Examiners may assess the examinee to be mentally, physically or behaviorally unsuitable for testing. The examiner may be ill or feel unable to establish adequate rapport to conduct a valid examination. Medical problems and psychological problems involving examinees must be discussed with the supervisory examiner.

6.3. Examinee termination: An examinee may terminate an examination for several reasons. The reasons for examinee termination may be less clear than the reasons for polygraph examiner termination. Detailed notes should be taken regarding the discussion leading to the termination of the examination. If the examinee does not wish to continue the interview or resume it later, the supervisory examiner should be informed. If the examinee makes any allegations or threats, these must be noted in the polygraph report.

## 7. Examination Procedures

### 7.1. Phase I will proceed in the following sequence:

7.1.1. After the appropriate introductions, the examiner will discuss the purpose of the examination and acquaint the examinee with the TES format. The following is an example of the information provided to the examinee at this time.

7.1.2. "I will be administering a polygraph examination today. This is a security examination to allow you to obtain or retain your security clearance. The polygraph examination consists of several tests. I will explain all the questions on each test before I conduct them. First, however, I need to obtain your consent to undergo this examination."

## 8. Consent to Undergo PDD Examination

### 8.1. If required, accomplish rights advisement first.

8.2. At the beginning of the pretest interview for the TES examination the polygraph examiner will obtain the examinee's informed consent to undergo the TES examination. The examinee's consent will be in writing before continuing the examination. The preferred method is to read the consent form to the examinee prior to the examinee signing the form. Appendix D (Page 44) is an example of an appropriate consent form.

8.2.1. If a second day is necessary to complete the CI screening process, another consent form will be completed. A consent form will be obtained for each new day of testing.

## 9. Overview of the Procedures

9.1. After obtaining consent, an overview of the polygraph procedures is given. The following is an example of the information contained in this overview.

9.1.1. "Before we continue, I would like to give you an idea of what we will be doing today. Shortly, I will be asking you some medical and health questions because I need to make sure you are suitable to be given this examination. Next, I will explain the instrument and how it works and I will demonstrate it to you. I will discuss the questions that I will be asking you on the first test. Before each test, I will discuss the questions on that test. In this way, I will be sure that you understand the topical areas and will not be surprised by any of the questions. Do you have any questions?"

9.2. Opening Statement: The opening statement establishes the examinee's responsibility to ask questions and to tell the truth and not withhold any information. It was adapted from *Hiring the Best, Interviewing for Integrity* by Brian C. Jayne and Joseph P. Buckley (2005) with John Reid and Associates, Chicago, IL. The opening statement is presented during the



overview or at any point in the pretest process up until after the acquaintance test. The opening statement can be approached in a variety of ways, but generally covers of the following information:

9.2.1. **Set the stage:** “This interview is different from most job interviews. It is about your suitability to possess or retain a security clearance. To a very great extent, this session is a *credibility assessment* of your ability to provide complete and accurate information about your background as it relates to the security questions on this test.”

9.2.2. **Explain the process:** “There are two parts to this *credibility assessment*. The first part is a discussion of the test issues. The second part is when the polygraph sensors are attached to your body and your physiological activity is recorded while you answer specific and reviewed questions. To be successful in this process you must do two things.”

9.2.3. **Fix responsibility:** “First, if you do not understand something it is your responsibility to ask questions until I explain the matter clearly to you. My job is to tell you what you need to know to complete the test successfully. I will do that. Your job is to make sure you understand everything I say.”

9.2.4. **Encourage truthfulness:** “Secondly, when answering my questions about the security issues you must be as thorough and accurate as possible. Do not leave matters out because they seem unimportant to you. Even minor details can be very important during this testing process. At the end of our discussion, you should be confident of the accuracy of all your statements. If you are not, then our discussion should continue.”

9.2.5. **Seal the deal:** “Can I count on you to ask me questions if you do not understand something? Can I also count on you to be completely straightforward and truthful in all your statements regarding the security questions today?”

## 10. Medical/Biographical/Background Information and Countermeasures Statement

10.1. After the Consent Form is signed, sufficient medical, biographical, and background information is obtained to assess the suitability of the examinee to undergo the examination and to help establish rapport with the examinee as taught at DACA. Sufficient background information should also be obtained (without laying a foundation and setting comparison questions) that will easily allow the polygraph examiner to move from a DLC format to a probable lie comparison (PLC) format if required. Lifestyle questions are not allowed during this interview process.

10.2. Countermeasures statement: It is important to provide some form of countermeasures statement to make the examinee aware that non-cooperation or deliberate efforts to influence testing will adversely affect the examination process. There are a number of approaches to this issue. The following is one such approach:

10.2.1. “It is not uncommon for people who have to take a polygraph examination to research information on the topic. Often, they come across sites or read articles that suggest they have to perform some activity to help them through their polygraph examination. Such sites and articles often provide bogus information. In fact, when people attempt to influence the outcome of their polygraph examination in various ways, such activity reveals that they have abdicated their responsibility to tell the truth and are being non-cooperative. Can I count on you not to involve yourself in such activity?”

## 11. Explanations of Instrumentation and PDD Theory

11.1. The next step is to explain the instrumentation and fight or flight as it relates to polygraph. The following is a basic guideline for these explanations. The explanation should include the basic elements as outlined below.

11.2. “You may be a little nervous, especially if you have never had a polygraph examination. To help put you at ease, I will explain what the instrument is, and how it works. The polygraph is a diagnostic tool used to determine if you are telling the truth. It simply records physiological changes taking place in your body when a series of questions are asked. Changes in your respiration, sweat gland activity and heart activity will be recorded. Please notice the two rubber tubes. One will be placed across your chest and the other will be placed around your abdominal area. They will monitor and record your respiration. The two metal fingerplates will be attached to two of your fingers and will monitor and record changes in your sweat gland activity. The blood pressure cuff will be placed on your arm and will monitor and record changes in your cardiovascular activity. During the test, I will inflate the cuff with air, so you may feel some pressure on your arm. Finally, the pad in the chair is designed to pick up body movements. When the polygraph test begins, please do not move unless instructed to do so.”

11.3. “The physiological changes recorded by the various components are a result of your body’s autonomic response system. You have no control over this response system. For example, visualize yourself walking down a dark alley late at night. Suddenly you hear a loud noise. You will instantaneously decide either to remain where you are and investigate the source of the noise, or to flee the area, sensing danger to your well-being. Regardless of the choice you make, your body automatically adjusts itself to meet the needs of the situation; your heart may beat faster, your breathing may change and you may break out in a cold sweat.”

11.4. “Your body produces the same type of physiological responses when you deliberately choose to lie or conceal information. Our parents, grandparents, relatives, and teachers all taught us that lying, cheating, and stealing are wrong. Think about the first time you were caught lying. Remember how your body felt during that confrontation. Your heart may have been racing or you may have been sweating. However, the responses were automatic; your body adjusted to the stress of the situation.”

11.5. “People are not always 100% honest. Sometimes it is more socially acceptable to lie than to be honest - such as telling people you like their clothes when you really do not. It is

important for you to understand that even though a lie might be socially acceptable, a small lie, or a lie by omission will cause your body to automatically respond. The recording on the polygraph will show only the physiological responses. I cannot know what kind of lie you are telling. Therefore, it is extremely important that you be completely honest to the security questions that I will be asking you. Remember, it is your responsibility to ask me questions if you do not understand something and to be completely honest and thorough when discussing the security questions on this examination.”

## 12. Acquaintance Test

12.1. A standard known solution numbers test will be the only acquaintance test used. The acquaintance test will cover the following three topics: "I am now going to demonstrate the physiological responses we have been discussing. (1) This test will give you the opportunity to become acquainted with the recording components; (2) it will give me the opportunity to adjust the instrument to you before the actual test; (3) it will ensure you can follow instructions; and, (4) it will demonstrate to me that you are physiologically capable of responding when you tell a lie."

12.2. The standard polygraph components are attached followed by the acquaintance test. The acquaintance test should be conducted in the manner taught at DACA.

12.2.1. The acquaintance test provides the polygraph examiner with an opportunity to adjust the components to examinee's physiology and to make sure that movement sensors and other components are working appropriately.

12.2.2. The movement sensor should contain sufficient sensitivity so that unsolicited movements can be readily identified.

12.2.3. Test data cannot be accurately analyzed if there is insufficient sensitivity in the various components therefore before entering operation, each component should contain appropriate sensitivity as taught at DACA.

12.3. Following the acquaintance test, the polygraph examiner should take the opportunity to acknowledge the results in a manner similar to the following:

12.3.1. "That was excellent. It is obvious that you know lying is wrong and it is clear that you are capable of responding when you tell a lie. You reacted strongly when you lied about that number. Even though the number was unimportant and the lie insignificant, you still responded. I am also able to see where you told the truth. That will make this examination very easy to complete as long as you follow my directions and are 100% truthful to the security questions.”

12.3.1.1. Prior to verbally acknowledging the results of the ACQT, the polygraph examiner should conduct a global review of the test data. The review will reveal whether there is adequate sensitivity in the components, if the test data contains

general nervous tension that is abnormal, whether examinee reacted at the key, and whether there is atypical physiology indicative of countermeasures activity.

12.3.1.2. The global review may dictate what approach the polygraph examiner might take when verbally acknowledging the results of the ACQT. The test data itself is normally not shown to the examinee.

### 13. Question Review

13.1. The Intelligence Community Policy Guidance 704.2 outlines the security information of importance for Counterintelligence Scope Polygraph (CSP) examinations. The following topical areas must be covered in order to have reciprocity between polygraph programs.

13.1.1. The following topical areas establishing reciprocity are:

- Involvement with a foreign intelligence service (FIS), foreign security service (FSS); Involvement in espionage.
- Terrorism.
- Foreign contacts.
- Protection of classified information.
- Damaging/sabotaging government information systems, clandestine collection (reconnaissance or other collection systems), or defense systems.

13.1.2. DOD polygraph programs may tailor their security questions to fit the needs of their customers, as long as the questions and the scope of the questions are sufficient to meet reciprocity requirements.

13.2. The TES format as taught at DACA uses two sets of relevant questions. One set of relevant questions used in Sub-test A and the second set of relevant questions used in Sub-test B.

13.2.1. Sub-test A:

**R1. Have you (*deliberately*) damaged any US government (USG) information or defense systems?**

**R2. Have you been involved in espionage or terrorism against the United States?**

13.2.2. Sub-test B:

**R3. Have you (*deliberately*) mishandled any classified information?**

**R4. Have you had any unauthorized foreign contacts?**

13.3. Sub-test A should be conducted first unless the examinee has an issue relating to Sub-test B topical areas.

13.4. If significant information is provided during the pretest interview regarding a topical issue, the preferred method is to move directly to a breakdown test to resolve the security issue.

13.4.1. There is no definitive rule as to when a polygraph examiner should go directly to breakdown testing. The key phrase to consider is *significant information*. This is reportable information directly related to the discussed security issue(s). It is information that should be fully resolved before testing of multiple issues can continue.

13.4.2. In cases where polygraph examiners obtain information prior to initial testing, a relevant question may be worded to qualify the question in the initial test. If examinee is, SR to the qualified question the polygraph examiner should use the information already obtained as an aide to elicit a reasonable explanation for the responses evident during the testing.

13.4.3. No matter which method is used, the solution is the same – eliciting information. No amount of data collection will replace a good elicitation interview.

13.5. Each topical area must be thoroughly discussed with no shortcuts taken. This means that in addition to a definition for the relevant question, the polygraph examiner should discuss all of the essential elements for the particular topical area, and provide an appropriate number of topic clarification questions so there is no doubt in the examinee's mind what the topic area encompasses.

13.6. Appendix A (Scoping Guide, page 25) provides definitions, essential elements and clarification questions for the relevant questions listed in 13.2.1 and 13.2.2 above.

13.7. Appendix B (DLC questions, page 40) provides acceptable directed lie comparison (DLC) questions and irrelevant questions for DACA students.

13.8. Polygraph examiners may employ minor variations of relevant questions to assure understanding by examinee or to accommodate explanations or admissions by the examinee as set forth in Appendix C (Alternative Relevant Questions, page 42). It is important that the minor variations not change the scope of the relevant issue being tested.

13.9. During the question review, the polygraph examiner has the option of taking the examinee out of the components and moving examinee to a different chair while conducting the elicitation pretest interview. If the polygraph examiner chooses to keep examinee in the chair attached to the components, the polygraph chair should be positioned where the examiner has a frontal view of examinee. Conducting an interview from the corner of a desk or at an angle creates a barrier between the examiner and examinee making observation of withholding behavior and elicitation of information extremely difficult.

13.9.1. It is important to remember that the pretest interview should be a dialogue not a monologue. A dialogue requires an exchange of information. It is the examinees' responsibility to ask questions when they do not understand something and to be honest and thorough in their answers to security questions. When polygraph examiners

deliberately place a barrier (e.g. table corner, chair arm, etc.) between themselves and the examinee the barrier often hampers the exchange of information.

13.10. Explanation to examinee: "I am going to review the questions that I will be asking you during the examination. There are three types of questions; security questions and two types of diagnostic questions. I will explain each type of question and I will review each question in detail. It is very important that you pay attention and carefully follow directions. The first questions will be the security questions. Remember, it is your responsibility to ask me questions if you do not understand a security issue we are discussing, and it is also your responsibility to be thorough and straightforward in your answers to the security questions."

13.11. Review Sacrifice Relevant. The sacrifice relevant question may be reviewed as the first relevant question or as the last (third) relevant question.

13.11.1. The rationale for the sacrifice relevant question might be as follows: (e.g., I need to make sure you intend to be truthful to the security questions we are going to review (*we just reviewed*), so I am going to ask you: (Either sacrifice relevant can be used):

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

13.12. Pretest of relevant questions: Pretest only the relevant questions for the sub-test you are conducting.

13.12.1. Appendix A (Page 25) provides a scoping guide with the elements that must be covered for each relevant question. It is important to note that "information" is the key to any CI screening examination. Initial admissions to security violations may be hiding serious reportable information.

13.12.2. Do not short cut the interview process. The review of the relevant issues must be detailed with sufficient appeals and clarification questions to provide examinees opportunity to fulfill their responsibility to ask questions if they do not understand something and to provide information that is relevant to the security issues.

13.12.3. Reading a pretest interview from a script, memorizing a script and repeating it, or using a checklist does not create dialogue. Such habits are strongly discouraged. It is recognized that TES is a structured interview and there are certain detail that must be stated during the process (e.g. during the ACQT and setting up the DLC questions), however these structured comments should be part of the overall dialogue and not a memorized script recited as a monologue. Appendix F (Page 46) contains a TES outline for DACA students to use until they develop their own style and become proficient in their understanding of the CI issues covered by the relevant questions. The TES outline is not a crutch and is not memorized as a script. Such actions discourage dialogue and hamper the ability to obtain information.

13.13. Rationale for directed lies.

13.13.1. "I am now going to discuss the second type of questions, we call them diagnostic questions. As I explained earlier, when you lie your body responds and I will be able to see it; just as I did during the acquaintance test. For various reasons (sick, tired, using some medication, etc.) some people lose their capability to respond. Consequently, during testing I will ask some questions to make sure you retain the capability to respond when you lie. Additionally, these questions will require you to pay attention and answer as we reviewed".

13.13.2. "First, I will review those questions used to determine if you are capable of responding when you lie". I already know the answer to these questions because we all have done these things at one time or another. When I ask the question I want you to think of an occasion when you did this - do not tell me about it; just think of a specific time. Then lie to me and say NO."

13.13.3. A list of DLC questions is located in Appendix B (Page 40).

#### 13.14. Review of DLC questions

13.14.1. Each DLC question should be introduced by pointing out that the event, i.e., violation of a minor traffic law, etc., is one that most people have done. For example, "We have all violated a minor traffic law at some time in our life, I'm sure you have haven't you?" At this point, the polygraph examiner will want to observe an affirmative nod or hear a verbal yes from the examinee. Provide instructions to make sure examinee has a specific event in mind explaining that he or she does not need to provide any specific details of the event. Let the examinee know that the test question on the test is, "Did you ever violate a minor traffic law?" Provide instructions that the examinee simply recognize the question as one to which he is lying, and to answer in a timely manner.

13.14.2. It is critical that the polygraph examiner make sure that the examinee has a specific incident in mind when lying to the DLC, as cognitive processing accounts for a major portion of the response to the question. This is accomplished during the pretest development and review of the DLC questions, as indicated above. It is equally important for the polygraph examiner not to force examinee to think about or dwell on the DLC question during question presentation in the data collection phase. When examinee answers a DLC question, the answer should be as timely as the answers to the relevant and irrelevant questions.

13.14.3. Review two directed lie comparison questions from the list in Appendix B (page 40). Do not give any examples of what you mean or what would be included in the directed lie question. The impact of the DLC will be stronger if it comes to mind naturally, than if you force it into their minds. Similarly, if there is any resistance to a DLC (e.g. the examinee claims never to have engaged in the activity) do not use it - select another DLC.

#### 13.15. Rationale for and review of the irrelevant questions.

13.15.1. "The final diagnostic questions you may hear are those you will answer truthfully so that I can see how you are responding when you tell the truth. It will be obvious that you are telling the truth. The questions are..."

13.15.2. Review two irrelevant questions from the list in Appendix B (page 40).

#### 13.16. Question Re-review.

13.16.1. Re-review all questions and have examinee answer as he or she would during the phase II. Questions should be reviewed in the following sequence: SR, R1, R2, C1, C2, I1, I2. If the examinee answers a DLC question incorrectly, remind the examinee to answer the question with a "no" answer, thus lying to the question. Repeat the review until the examinee does it correctly.

#### 13.17. Examinee Instructions

13.17.1. Instruct examinees that they will be hearing some or all of the questions, and that the questions will not occur in any specific order. Inform them that some of the questions will be repeated and they should sit still and follow directions. Remind examinees that they are to deliberately lie to the set of reviewed diagnostic questions designed to make sure they have the capability of responding when they lie. When they hear those questions, they should recognize the question, answer with a lie, and wait for the next question. The examiner will not instruct the examinee to visualize, concentrate on, or playback in his or her mind, the event in question while answering in-test.

### 14. Phase II

#### 14.1. Question Sequence

14.1.1. Sub-test A: I1 I2 SR 1C1 1R1 1R2 1C2 2R1 2R2 2C1 3R1 3R2 2C2

14.1.2. Sub-test B: I1 I2 SR 1C1 1R3 1R4 1C2 2R3 2R4 2C1 3R3 3R4 2C2

#### 14.2. Notations

14.2.1. "Stim marks" are used as taught by DACA. The questions are annotated using the notations above. The first relevant question is annotated R1, the second comparison is annotated C2, etc. It is not necessary to indicate the number of the presentation (e.g. the 2 before R2 on the second reading of R2).

14.2.2. Question spacing will be between 20 and 30 seconds. Spacing should vary within the window so that a set pattern is not established. Additional irrelevant questions may



be inserted only for the purposes of allowing physiological responses to return to baseline (obtaining homeostasis). Only one irrelevant may be inserted to return examinee to baseline. If examinee does not return to baseline following insertion of the irrelevant question, go out of operations. In other words, you will not ask multiple irrelevant questions in succession. However, during the course of the chart you may insert up to three irrelevant questions, as long as they are not consecutive presentations (excluding the first two irrelevant questions).

14.2.3. The test is run once (one chart). If an artifact (affecting two out of the three physiological parameters, i.e., both respiratory and EDA or EDA and Cardiovascular) occurs during one of the relevant questions or a relevant question is not able to be evaluated due to movement, examiner error, etc., do NOT repeat the question, at that point. The examiner has two options.

14.2.3.1. If the artifact is noticed while the test is being conducted, the examiner may add a fourth presentation consisting of three questions (4R1, 4R2 and 3C1) to the end of the test.

14.2.3.2. If the artifact is noticed after the test is completed, conduct a short test as follows: I1 I2 SR C1 R1 R2 C2. The examiner will go out of operation before running the short test. Explain, to the examinee, that there were artifacts and continued testing is necessary. The short test should be labeled A-1S or B-1S, etc.

14.2.4. Even though the artifact occurred at only one relevant, both relevant questions must be asked. However, only the relevant question that contained the artifact will be evaluated. The score for the repeated (artifactual) relevant question will be added to the total of the two previously presented relevant questions to provide a total of three presentations of the relevant question.

14.2.5. If an examinee answers "yes" to the first DLC question (1C1), or some other artifact makes 1C1 non-scorable, the examiner will go out of operation. If the examinee answered incorrectly, the examiner should discuss the testing procedure with the examinee to make sure he or she understands the procedure. Remind the examinee to "lie" by answering "no" to those questions. If the artifact was due to some other cause, give the examinee the appropriate explanation. Begin the test again.

14.2.5.1. There is one concession to this rule. If an artifact occurs at 1C1 and it appears to be an apparent attempt at countermeasures (e.g. the movement sensor contains a response indicating a physical movement), the polygraph examiner can continue the test to see if frequency and specificity occurs.

14.2.5.2. If the polygraph examiner chooses this option and frequency and specificity occur, a post-test interview should follow providing the examinee an opportunity to explain the non-cooperative behavior.

14.2.6. If the examinee answers "yes" to any of the other DLC questions during data collection, give answering instructions (AI) but do not repeat the question. If an artifact occurs at any DLC other than the first, continue with the test. In either case, that DLC question may not be used for scoring.

14.2.7. If both comparison questions in an analysis spot contain artifacts or are answered incorrectly, thereby precluding analysis of one repetition of the relevant questions, the evaluation conclusion will be No Opinion. The entire sub-test will be conducted again. The rationale for this decision may be any of the following:

14.2.7.1. If examinee continues to answer the DLC questions with the wrong response it may be because the examinee is distracted and not focusing on the test, or there is the possibility that the examinee is being non-cooperative.

14.2.7.2. If artifacts are only at the DLC questions, there is the possibility of countermeasures activity. If artifacts appear throughout the test the possibility exists that examinee is being non-cooperative, is hiding information regarding the relevant issues, or has an outside issue that needs to be resolved. It is up to the polygraph examiner to discuss the behavior in a post-test environment and take corrective action.

## 15. Phase III

15.1. Both research and anecdotal field data obtained during the past two decades reveal that an evaluation of PLC or DLC test data from any CSP format should be conservative. The initial review should be global with the polygraph examiner questioning any anomalies present.

15.1.1. When a proper pretest interview is conducted, using the techniques presented in this pamphlet, yet the test data is erratic and contains excessive nervous tension this may suggest the examinee has not fulfilled his or her responsibility to reveal information relevant to the security issues.

15.1.2. When the first sub-test contains stable tracings that are relatively simple to evaluate, but the second sub-test is erratic with what appears to be excessive nervous tension this may also suggest the examinee has undisclosed information.

15.1.3. When the global review discloses atypical physiology in the test data, particularly with frequency and specificity it may suggest non-cooperation on the part of examinee. Non-cooperation on the part of the examinee is often the result of examinee withholding relevant information about the security issues.

15.1.4. After a numeric evaluation, the polygraph examiner should continue with a global review looking for inconsistencies between the global review and the numeric score. For example, if the vertical numeric score at one question in a sub-test is a +1 and the other vertical numeric score at the second relevant question is a +6 with a combined horizontal

score of +7 this would be called NSR in the TES format. However, a global review will most likely reveal consistent, significant responses at the relevant question in the +1 spot suggesting salience to the examinee. The polygraph examiner should conduct a polite post-test interview providing examinee an opportunity to explain the significance of the question.

15.2. Initial TES research used the 7-position scoring system, but added some safeguards to improve accuracy particularly when identifying deceptive examinees. For example, if after evaluating the test data the final score fell into the NO range, the first presentations of both relevant questions are evaluated against 1C2: 1C1 is ignored. This simple conservative approach often moved the NO opinion to a conclusive result and more importantly improved the accuracy of deceptive decisions without affecting the non-deceptive decisions. Additionally, if the final decision is still NO a post-test interview should be conducted giving the examinee opportunity to fulfill his or her responsibility as outlined in this pamphlet.

15.2.1. The appropriate evaluation for TES is the 7-position scoring system as taught at DACA with the safe guards outlined in 15.2 above. If either of the vertical question totals is lower than or equal to -3 the decision is SR. If the horizontal total is lower than or equal to -4 the decision is SR. If the horizontal total is greater than or equal to +4 with plus scores in both vertical spots the decision is NSR. Any other total is NO.

15.3. The DACA is not averse to using the 3-position scoring system as a conservative evaluation process for TES. The information in 15.1.1 through 15.1.4 still applies. Appendix G (page 59) contains a copy of a TES evaluation sheet.

## 16. Phase IV

16.1. Upon completion of the test data analysis (TDA) phase, the examiner will conduct a post-test interview notifying the examinee of the results of the polygraph examination. When SR are observed at relevant question(s), a line of questioning begins with the purpose of gathering information to explain the unresolved issues relevant to the matter under investigation. For NSR, the examinee is informed of a preliminary opinion of truthfulness to the relevant issue and this opinion remains preliminary until a quality control review is conducted. In the case of a NO examination, the examinee is advised the examination has not met the criteria of a conclusive examination, therefore the relevant issue is unresolved and further testing is necessary. Further polygraph testing is not accomplished until examinee is thoroughly interviewed to determine why conclusive results were not obtained.

16.1.1. Upon completion of a thorough interview to determine why conclusive results were not obtained, the polygraph examiner using the successive hurdles model, should breakdown the relevant question containing the most significant responses. The breakdown test should cover the essential elements for that relevant topical issue. The polygraph examiner has the option of conducting a second TES examination as outlined in paragraph 16.5 below.

16.2 NSR Decision: The polygraph examiner's NSR decision means the testing for that sub-test is complete. After completion of sub-test A, sub-test B will be conducted (or vice versa if "B" was conducted first). Upon completion of sub-test B (and both sub-tests resulted in NSR decisions), the examinee will be informed that the tests are subject to further review prior to reaching a final determination of results and that it is sometimes necessary to administer additional tests to confirm the original decision. Determine if the examinee would be willing to return for additional testing, if necessary.

Appendix E (page 45) provides an example of how to transition from sub-test A to sub-test B.

16.3. SR Decision: If, following the evaluation of sub-test data, there is a need to resolve a security issue due to significant responses or other actions of the examinee, i.e., deliberate artifacts in the physiological responses, the examiner will immediately conduct a thorough post-test interview. The significant responses to the relevant questions generally indicate that the examinee withheld information during the pretest interview. It is the polygraph examiner's responsibility to give examinee opportunity to provide a reasonable explanation regarding the significance of the question(s).

16.3.1. If the strongest responses are at a particular relevant question, the polygraph examiner should let the examinee know that the interview will be expanded covering the significant security topic. The expanded interview is a non-confrontational interview that provides the examinee an opportunity to provide a reasonable explanation for the responses.

16.3.2. There is concern among some in the polygraph community that significant responses at one relevant question does not mean examinee committed an act involving that particular relevant issue. (e.g. Significant responses on sub-test A to espionage and terrorism when the real issue is mishandling classified information covered later in sub-test B). This should not concern to the polygraph examiner. The examinee chose the espionage and terrorism question on which to respond. It is up to the examinee to provide the explanation. The expanded interview will provide examinee an opportunity to explain the responses and breakdown testing will resolve whether examinee is being truthful in his or her responses. Breakdown testing does not, and should not replace a good post-test interview.

16.4. If the relevant issues have been fully explored as laid out in the scoping guide (Appendix A, page 25), and topic clarification questions have been correctly asked, and examinee behavior correctly analyzed, it is reasonable to assume that examinee is withholding information. A good polygraph examiner can be polite, yet effective at obtaining reportable information.

16.5. On the other hand, if shortcuts were taken, all the relevant topical areas were not fully explored, the polygraph examiner misread examinee's behavior, or examinee had some outside issue not brought to the attention of the polygraph examiner, it may be possible that the significant responses in a NO test are anomalous. This should be the exception not the rule. A post-test interview should be conducted to see what the polygraph examiner missed during the pretest interview. After the post test interview, if the polygraph examiner still feels any of the

above occurred, the examiner may attempt to resolve the problem rerunning the test using the TES format with different DLC questions. However, if the polygraph examiner feels examinee is withholding information the post-test interview should continue. After completion of the post-test the issue should be resolved using the successive hurdles model.

16.6. If examinee makes admissions directly related to the relevant question(s) explicit detail (who, what, where, when, how, why) should be obtained. Consider taking a signed statement, or during the summarization of the information take written notes and have examinee sign and date the notes. Breakdown testing should be conducted to test the credibility of the examinee's statements. The particular relevant security topic is not resolved until all of the essential elements covering the relevant topic are covered.

16.7. Once the deceptive relevant issue(s) is resolved, a clearing test should be conducted on the other question(s) in the sub-test before moving to the next sub-test. The clearing test can be in a PLC or DLC question format and should cover all the essential elements for that relevant topic. If the clearing test yields a DI/SR decision, a post-test interview should follow. There should not be additional polygraph testing until substantial information is obtained. If the clearing (confirmatory) sub-tests continue to yield DI decisions with substantial admissions between testing the testing process can continue, as long as the examinee is agreeable to further testing and his or her physiology is still responsive. Extended testing should include appropriate breaks (e.g. lunch, restroom, water, smoking, etc.). If an examinee must return for further testing, a minimum of 24 hours from time of release must elapse before he or she is re-tested.

16.7.1. The point of paragraphs 16.3 through 16.7 above is that continued testing should only occur when significant information is obtained during the post-test interview. The solution is the post-test interview. As stated before, testing should never replace a good interview. There is a very strong danger of habituation when a polygraph examiner chooses to conduct repeated tests on the same issue when no information has been obtained or a credible post-test interview not conducted.

16.7.2. Regardless of which sub-test is administered the second sub-test may NOT be administered if the first sub-test has not been resolved. This does not preclude the polygraph examiner from expanding the post-test interview to topics covered in the second sub-test area.

16.7.3. When there is an absence of reportable information forthcoming from the examinee the polygraph examiner should follow the successive hurdles model.

16.8. NO Decision: If, following the evaluation of the sub-test data, a conclusive decision cannot be rendered due to *inconsistent* responding to the relevant questions, the polygraph examiner will conduct a thorough interview to determine what was significant about the relevant question(s). The criteria for continued testing with an NO decision are the same as the criteria for continued testing with an SR decision. If examinee does not provide a reason for the inconsistent responses, the most significant relevant question should be broken down using the successive hurdles model. The maximum number of series to resolve an issue without examinee providing information between series is four for subtest A and three for subtest B. The

maximum number of series only applies if the successive hurdles model is being properly followed. Due to habituation, the accuracy of the results of any additional testing is questionable.

16.8.1. The provisions of paragraph 16.5 apply if the polygraph examiner chooses to conduct another TES exam (providing the NO is after the initial series).

16.9. If the NO decision is due to an *absence of responding* to the relevant and comparison questions, consideration should be given as to whether examinee is taking medication or has a health issue that might mask physiological responses, or has taken some deliberate action to conceal physiological responses.

16.9.1. A post-test interview should be conducted to determine the reason for the absence of responding. If further testing is considered it should be after the relevant issues are fully explored.

## 17. Breakdown Testing.

17.1. The TES was not designed to be a stand-alone testing format. The TES sub-tests contain multiple security issues with many elements. SR responses to the relevant issues should be expected in some cases. When SR or NO occur it is expected that the polygraph examiner will conduct sufficient interview to offer the examinee an opportunity to provide a reasonable explanation for the responses. Examinee's explanation may dictate the direction of the breakdown testing.

17.2. Breakdown testing will be accomplished using successive hurdles in the manner taught at DACA. It is important to realize that breakdown testing is still part of the CI screening process. The focus of breakdown testing is to determine a direction for further interview. This requires an intimate understanding of the essential elements for each security topics.

17.2.1. If an examinee has chosen to negate his or her responsibility to be truthful, a proper breakdown test will provide the polygraph examiner with a direction for more focused interviewing. The focus of initial breakdown testing should be in the areas covered in 17.3 through 17.7 below.

### 17.3. **Essential elements for damage to USG Information Systems:**

17.3.1. Unauthorized access.

17.3.2. Physical damage.

17.3.3. Uploading a malicious code.

17.3.4. Unauthorized altering.

### 17.4. **Essential elements for damage to USG Defense Systems:**

17.4.1. Weapon systems damage.

17.4.2. Reconnaissance program damage.

17.4.3. Computers connecting, controlling or operating a USG Defense System

17.4.4. Peripheral Equipment used to maintain USG Defense Systems.

**17.5. Essential elements for Espionage (Concealed FIS or FSS contact):**

17.5.1. Unreported approaches or pitches by a FIS/FSS.

17.5.2. Offering or volunteering to engage in espionage.

17.5.3. Recruitment for espionage activity.

17.5.4. Training provided by a FIS/FSS for espionage activity.

17.5.5. Tasked to obtain something for a FIS/FSS.

17.5.6. Improper copying, removing, transporting and storage of classified for espionage purposes.

17.5.7. Compensation for espionage activity.

17.5.8. Spotting and assessment activity for a FIS/FSS.

17.5.9. Knowledge of espionage activity that is being deliberately concealed from your agency.

**17.6. Essential elements for foreign or domestic terrorism:**

17.6.1. Member or previous member of any terrorist organization.

17.6.2. Providing support to any terrorist organization.

17.6.3. Concealing contact with any terrorist organization.

17.6.4. Taking part in or knowledge of any terrorist act.

**17.7. Essential elements for protection of classified information:**

17.7.1. Providing classified information to an uncleared US Citizen.

17.7.2. Providing classified information to the media or press.

17.7.3. Providing classified information to a foreign national.

17.7.4. Unauthorized removal and storage of classified information.

17.8. **Essential elements for unauthorized foreign contacts:**

17.8.1. Unreported business contact.

17.8.2. Unreported professional contact.

17.8.3. Illegal or criminal contact.

17.8.4. Close personal contact.



## Appendix A

### Scoping Guide for Relevant Questions

#### TES Sub-test A:

#### **R1: Have you deliberately damaged any US government information or defense systems?**

**Security Concern:** Noncompliance with rules, procedures, guidelines or regulations pertaining to information technology systems may raise security concerns about an individual's reliability and trustworthiness, calling into question the willingness or ability to protect sensitive systems, networks, and information. Information technology systems include all related computer hardware, software, firmware, and data used for the communication, transmission, processing, manipulation, storage, or protection of information.

#### **Conditions that could raise a Security Concern:**

- Illegal or unauthorized entry into any information technology system or component thereof
- Illegal or unauthorized modification, destruction, manipulation or denial of access to information, software, firmware, or hardware, in an information technology system
- Use of any information technology system to gain unauthorized access to another system or to a compartmented area within the same system
- Downloading, storing, or transmitting classified information on or to any unauthorized software, hardware, or information technology system
- Unauthorized use of a government or other information technology system
- Introduction, removal, or duplication of hardware, firmware, software, or media to or from any information technology system without authorization, when prohibited by rules, procedures, guidelines or regulations
- Negligence or lax security habits in handling information technology that persist despite counseling by management
- Any misuse of information technology, whether deliberate or negligent, that results in damage to the national security

#### **Question Definitions:**

United States Government (USG) information system: Information technology systems include all related computer hardware, software, firmware, and data used for the communication, transmission, processing, manipulation, storage, or protection of information.

USG Defense systems: Refers to military weapon systems and anything used by the USG in the nation's defense to include reconnaissance programs.

## **Elements: Damage to USG Information Systems:**

- Unauthorized access to a USG Information Technology System (ITS):
  - Exchanging USG computer passwords. For what purpose? How often?
  - Misuse of USG systems such as pornography, managing a personal business, piracy, etc.
  - Hacking into a USG computer system.
- Physical Damage to a USG ITS.
  - Deliberate and intentional damage.
  - Pouring acid or other liquid into an ITS.
  - Breaking hardware, firmware, or other components of an ITS with a hammer or other tool.
  - Sabotaging [bomb, arson, etc] an ITS.
- Uploading a malicious code into a USG computer
  - Purposeful, malicious efforts to do harm to a computer system;
  - Deliberately placing malicious code into USG hardware, software, or firmware for the purpose of obtaining classified information in an unauthorized manner or damaging a USG ITS.
- Unauthorized altering information in a USG computer.
  - Changing or deleting classified information in a database without proper authorization.
  - Use of “back doors” or other surreptitious computer methods to read or change restricted data, such as someone else’s email or someone else’s classified information.
    - Entering someone else’s compartmented data in another system, or within the same system.
  - Altering a USG computer to accept unauthorized hardware.

## **Topic clarification: The following non-assumptive questions may be used during the pretest interview to clarify the security topic for damage to USG information systems:**

- Have you used a USG computer to transfer classified information to any unauthorized person?

- Have you downloaded any classified information from a USG computer without proper authorization?
- Have you “hacked” into a USG computer?
- Have you intentionally introduced a malicious code (*time bomb, worm, backdoor, Trojan horse*) into a USG computer?
- Have you deliberately damaged a computer or its components in any manner (*beating with a hammer, pouring liquids, acids or abrasives into any component*)?
- Have you used authorized USG computer access to commit any crimes?
- Have you altered information in a USG computer without authorization?
- Have you given your USG computer password to anyone?
- Have you intentionally exceeded authorized use on any USG computer?
- Are you concealing any unauthorized use of a USG computer?

### **Definition Damage to USG Defense Systems:**

- A USG defense system refers to military weapon systems and anything used by the USG in our defense to include reconnaissance programs. (*Since Information Systems and Defense Systems are interrelated make sure the examinee understands this question is related to defense and military weapon systems only*).
  - Equipment associated directly with the security of the USG, its military forces, or its borders, embassies, and territories.
  - Offensive or defensive weapon systems whether floating on or under the water, sitting or traveling on land, flying in the air, or orbiting in space.
  - Peripheral equipment used to interconnect these weapon systems.
  - The term *deliberately damaged* means intentional or premeditated acts.
    - These acts would result in equipment not being available or functioning properly should they be immediately needed for their offensive or defensive role.
  - The question may include, but is not limited to *sabotage*. Sabotage is an act to harm the USG and/or help another nation militarily by deliberately damaging a USG defense system.
    - The method of sabotage can be complex such as altering computer code or introducing a malicious code into a defense system.
    - The method of sabotage can be basic such as cutting wires in a defense system or deliberately breaking a piece of peripheral equipment causing the defense system to fail.
- Types of Defense Systems:

- Space Systems: (Communications, Navigation, Mapping, Meteorology, Imagery Intelligence, Signals Intelligence, Measurement & Signature Intelligence, Wide area/Ocean Surveillance, Missile Warning).
  - Smart Weapons: (TV/IR Guided Bombs, GPS Guided Bombs, Targeting Pods).
  - Nuclear Systems: (ICBM, SLBM, Bombers, CBW, Missile Defense, Air Defense).
  - Aircraft: (Military aircraft and aircraft systems).
  - Naval Combat Systems: (Ships and shipboard systems).
  - Land Systems: (All land based military weapon systems).
  - Intelligence Systems: (These are systems connected to Space, Air, Land, & Sea based Defense systems).
  - Missile Defense Systems:
  - Defense IT: (Battlespace IT, Cyber Warfare, Enterprise IT, Information Security, Logistics IT, Networks and Spectrums).
  - C4ISR: Communications, Command and Control, Geospatial & Intelligence, Net-Centric Training, Sensors and UAVs.
- **Elements: Damage to Defense Systems**
    - Weapon Systems:
      - Any weapon system orbiting in space; flying in the air; ground based systems; systems floating on the water or under water.
      - The damage can be physical such as throwing a wrench into a jet engine or it can be sophisticated such as uploading a malicious code into a weapon system that uses computers in its operation.
    - Reconnaissance programs:
      - Intelligence, Surveillance, and Reconnaissance (ISR) programs.
      - These can range from hand-held devices, to high altitude UAVs, to manned aircraft, to orbiting satellites.
      - The damage was intentional
      - The damage was sophisticated: Uploading malicious code, altering software or other computer data.
      - The damage could be unsophisticated: Cutting wires, breaking parts.
    - Computers connecting, controlling or operating a USG Defense system:
      - Command and Control personnel use computers to connect, to control, and to operate Defense Systems.
      - Adding unauthorized software, firmware, or hardware
      - Unauthorized altering of data or deleting data
      - Physical damage to these computers
      - Uploading a malicious code into a defense system

- Peripheral Equipment used to maintain USG Defense Systems:
  - Damage was intentional
  - Damage was for the purpose of slowing down or destroying defense systems

**Topic clarification: The following non-assumptive questions may be used to clarify the security topic for damage to USG defense systems:**

- Have you ever deliberately damaged any USG Defense system?
- Have you ever committed an act of sabotage on any equipment or property belonging to the USG?
- Have you introduced any malicious code into a computer that could result in damage or the slowing down of any USG defense system?
- Have you ever cut wires or thrown an object into any component of a USG defense system?
- Have you ever hacked into a computer system for the purpose of slowing down or damaging a USG defense system?
- Have you ever been approached or contacted to engage in sabotage activity?
- Has any entity not associated with the USG offered you money, training or tasked you to commit an act of sabotage?
- Have you been compensated for any sabotage activity?
- Do you have knowledge of any sabotage activity or planned sabotage activity against the USG?
- Have you deliberately damaged any peripheral equipment used to maintain defense systems?

**R2: Have you been involved in espionage or terrorism against the United States?**

**Security Concern:** An individual must be of unquestioned allegiance to the United States. The willingness to safeguard classified information is in doubt if there is any reason to suspect an individual's allegiance to the United States.

**Conditions that could raise a Security Concern:**

- Involvement in, support of training to commit, or advocacy of any act of sabotage, espionage, treason, terrorism, or sedition against the United States
- Association or sympathy with persons who are attempting to commit, or who are committing, sabotage, espionage, treason, terrorism, or sedition against the US
- Association or sympathy with persons or organizations that advocate, threaten, or use force or violence, or use any other illegal or unconstitutional means in an effort to:

- Overthrow or influence the government of the United States or any state or local government
- Prevent Federal, state, or local government personnel from performing their official duties
- Gain retribution for perceived wrongs caused by the Federal, state, or local government
- Prevent others from exercising their rights under the Constitution or laws of the United States or of any state

### **Question Definition:**

Espionage: refers to the intentional unauthorized release of classified information or material to a foreign government, power, group or organization with an intent or reason to believe that the information or material may be used to the injury of the USG or to the advantage of a foreign government, power, group or organization.

An element of espionage is the unreported personal, professional or business contact with a representative of any foreign intelligence service (FIS) or foreign security service (FSS) which for any reason has been deliberately concealed and not reported. A FIS/FSS is an intelligence service or a security service of a country other than the US. A FIS/FSS can be friend or foe, allied or hostile to the USG. If the examinee is concealing such contact from you and your agency, it is unreported. Such unreported contact might involve the following:

### **Elements: Espionage:**

- Unreported approaches or pitches by a FIS/FSS to engage in espionage.
  - A FIS normally ‘spots’ a potential intelligence asset (target) then ‘assesses’ the target to see if they have access; will be cooperative; and can be exploited. If the assessment is positive the potential asset will be approached by a representative of a FIS and asked to work for them.
  - Thus the importance of reporting such approaches.
- Offering or volunteering to engage in espionage.
  - Aldrich H. Ames is an example of someone that walked into the Russian Embassy and volunteered to work for them.
- Recruitment for espionage activity.
  - Once a FIS approaches a target and asks the target to work for them, if the target agrees to work they are recruited and become an asset or agent.
- Training provided by a FIS/FSS for espionage activity.
  - Training in Tradecraft.

- Tradecraft is practical skills used by agents/assets in the performance of their duties.
- In particular tradecraft enables a spy to communicate with an IO without arousing the suspicion of US Counterintelligence.
- Tradecraft: Planned routes; Dead letter box; Secret writing; Toiletries with false compartments; Recording devices; Transmitters; Listening devices; Concealed cameras, etc.
- Tasked to obtain something for a FIS/FSS.
  - This involves a FIS telling the asset (spy) what information they want.
  - Tasking involves specific requests for the asset to do certain things.
- Improper copying, removing, transporting and storage of classified information or material for espionage purposes.
  - This is the illegal removal of classified material and concealing it at an unauthorized location.
  - The purpose of the removal is to provide the classified material to a FIS.
- Compensation for espionage activity.
  - Money, Jewelry, Diamonds, Property
  - Need for recognition; Prestige; Rank
  - Anger or Revenge
  - Thrill and excitement
  - Shared affinity with a culture, race, religion, or nation; Sex
- Spotting and assessment activity for a FIS/FSS.
  - Providing a FIS with the names of prospective assets
  - Providing a FIS with the weaknesses of a prospective asset
- Knowledge of espionage activity that is being deliberately concealed from your agency.
  - Personal knowledge of someone committing espionage that is unreported.

**Topic clarification: The following non-assumptive questions may be used to clarify the security topic for espionage:**

- Have you performed any secret assignments or work for any foreign government?
- Have you accepted money or anything of value from a foreign government?
- Have you had any meetings with someone from the intelligence, military or security services of a foreign government?

- Have you had contact with a foreign government by phone? By email? By written correspondence? Through a third party?
- Have you met anyone you suspect may have been a representative of a foreign government?
- Have you met anyone you suspect had any official connections with the intelligence or security services of a foreign government?
- Have you ever been arrested in a foreign country?
- Have you ever been detained in a foreign country?

### **Question Definition:**

**Terrorism:** Refers to the calculated use of violence or threat of violence to induce fear and is intended to coerce or intimidate governments or societies in the pursuit of goals that are generally political, religious or ideological. Terrorist activity can be subversive as it interferes with, undermines, or denies individuals those rights guaranteed under the U.S. Constitution and results in or leads to the violent or illegal attempt to overthrow the U.S. Government. (It is important to get across to the examinee that this topic deals with terror acts directed against the USG or its people).

- **Eco-Terrorism:** Terrorism committed in support of ecological, environmental, or animal rights causes.
- **Narco-Terrorism:** Attempts by narcotics traffickers to influence policies of governments and societies through violence and intimidation.
- **Domestic Terrorism:** Terrorist groups born in the United States wanting to overthrow the USG.
- **Foreign Terrorism:** Terrorist groups headquartered in foreign countries. These organizations and groups are often supported by foreign governments. These organizations and groups have cells in the United States and are intent on overthrowing the USG as we know it.

### **Elements: Terrorism:**

- **Member or previous member** of any terrorist organization.
  - Concealed or hidden from the USG, examinee's agency, and the polygraph examiner.
- **Providing support** (*time, money, support via computer or other information sharing*).
  - Currency or financial securities
  - Lodging, Training, Lethal substances, Explosives
  - Communications equipment, False documents or identification
  - Safe houses, expert advice or assistance
  - Facilities or personnel, Transportation, any tangible property



- Concealing contact with any terrorist organization.
  - Hidden and unreported contact
  - Any group on the USG Terrorist watch list (e.g. Abu Nidal; Abu Sayyaf; Al-Aqsa Martyrs; Al-Jihad; Al-Quida; Salafist Group; Ansar al-Sunna; Armed Islamic Group; Asbat al-Ansar; Aum Shinrikyo; Basque Fatherland and Liberty; Communist Party of Philippines; New peoples Army; Continuity Irish Republican Army; Gama's al-Islamiyya; Harakat ul-Mujahedin; Hizballah; Islamic Jihad Group; HAMAS; Palestine Islamic Jihad; Palestine Liberation Front; Popular Front for Liberation of Palestine; Real IRA; Revolutionary Armed Forces of Colombia; Shining Path; United Self-Defense Forces of Columbia; & many others.
- Taking part in any terrorist act (*this includes knowledge of terrorist activity or planned terrorist activity*).
  - Direct Involvement: Assassination; Bombings; Shootings; Sabotage; Ambushes; Kidnappings. Examinee is doing the action.
  - Secondary Involvement: Providing support; Acting as a lookout; Surveillance activities; Planning the acts; Unreported direct knowledge that someone is a terrorist or is planning a terrorist act.

Note: Consider the possibility of a FIS/FSS being directly involved with or providing support to terrorist groups or organizations.

**Topic clarification: The following non-assumptive questions may be used to clarify the topic for terrorism directed against the United States:**

- Are you a terrorist?
- Have you been a member of any international terrorist organization such as Al-Qaida or Hezbollah?
- Have you associated with members of any known international terrorist organizations?
- Have you been a member of any domestic terrorist organization?
- Have you associated with members of any known domestic terrorist organizations?
- Have you provided money to any known terrorist group or activity?
- Have you provided personal services to any known terrorist group or activity?
- Do you associate with any group that advocates change in the USG by violence?
- Do you know anyone who is involved in terrorist activity?
- Have you committed any crime for political or social reasons?
- Have you assisted others who committed crime for political or social reasons?
- Are you withholding any information about your personal connection to terrorist activities?
- Are you withholding any information about your personal connection with any terrorist group?

- Are you withholding any information about your personal connection with any individual engaged in terrorist activity?

## **TES Sub-test B:**

### **R3: Have you (deliberately) mishandled any classified information?**

**Security Concern: Mishandling classified information:** Deliberate or negligent failure to comply with rules and regulations for protecting classified or other sensitive information raises doubt about an individual's trustworthiness, judgment, reliability, or willingness and ability to safeguard such information, and is a serious security concern.

#### **Conditions that could raise a Security Concern regarding the mishandling of classified information:**

- Deliberate or negligent disclosure of classified or other protected information to unauthorized persons, including but not limited to personal or business contacts, to the media, or to persons present at seminars, meetings, or conferences
- Collecting or storing classified or other protected information in any unauthorized location
- Loading, drafting, editing, modifying, storing, transmitting, or otherwise handling classified reports, data, or other information on any unapproved equipment including but not limited to any typewriter, word processor, or computer hardware, software, drive, system, game board, hand-held "palm" or pocket device, or other adjunct equipment
- Inappropriate efforts to obtain or view classified or other protected information outside one's need-to-know
- Copying classified or other protected information in a manner designed to conceal or remove classification or other document control markings
- Viewing or downloading information from a secure system when the information is beyond the individual's need-to-know
- Any failure to comply with rules for the protection of classified or other sensitive information
- Negligence or lax security habits that persist despite counseling by management
- Failure to comply with rules or regulations that results in damage to the National Security, regardless of whether it was deliberate or negligent

#### **Question Definitions:**

Deliberately mishandling classified information: The deliberate failure to protect classified information. Removing or storing either hard copy, electronic, or memorized classified

information with the intent of giving, passing, selling, keeping, or publishing that information for any reason.

This definition is also concerned with unauthorized removal of classified information or material from a secure location and long-term storage outside an approved area. This would include any transfer of classified material to a non-approved computer. This transfer would constitute long-term storage of classified material even if the individual attempted to delete the information, because of the difficulty in deleting files from a computer.

Key Words:

- Classified refers to USG information only. There are three classifications:
  - Confidential
  - Secret
  - Top Secret (including SCI)
- Compromise:
  - Giving, passing or exposing classified USG information to any unauthorized person.
  - Unauthorized sale of classified information or material to anyone.
  - Compromise can be accomplished in two ways:
    - Revealing classified data to unauthorized persons through conversation, digital data, and hard copy.
    - Removal of classified information from authorized locations and storing in an unauthorized location.
  - Revealing classified through conversation, or unauthorized removal can be purposeful or accidental.
- Unauthorized removal of classified information involves removal of classified material from any authorized USG secure location to any unauthorized location. The definition for such removal should include:
  - Taking classified materials (documents, magnetic media, classified hardware, etc) away from a secure environment to an area such as home, garage, friend's home, or trunk of a car;
  - Entering of classified information into computerized bulletin boards or other unclassified means of communication;
  - Placing of classified information into areas where control of material is lost and the potential of compromise is increased;
  - The passing of classified secrets from one company to another;
  - Knowledge of deliberate mishandling of classified material that examinee failed to report.

- Unauthorized person refers to someone that does not hold the appropriate security clearance or does not have a need-to-know:

It is important to note that a *security violation* is not necessarily a *compromise*, but a *compromise* is always a security violation. A compromise of classified information may be hiding behind security violation admissions.

**Elements: Mishandling Classified Information:** Providing classified information or material to:

- Uncleared U.S. Citizen
  - One who does not have a USG security clearance.
  - One who has a USG security clearance, but does not have a need-to-know.
- Media or Press
  - Radio, TV, Magazines, Newspapers, Books
  - Computers, blogs, web-sites, bulletin-boards
  - Telephone, Email, Personal interview
- Foreign National
  - Any FN that is concealed or hidden and not reported
  - Anyone from foreign press
  - Anyone from foreign embassy, organization, group
  - Any U.S. Citizen representing a foreign group, organization, government, or country
- Unauthorized Removal and Storage
  - Removing classified from its secure environment
  - Storing at home, apartment, car, rented storage facility, friend's house
  - Downloading classified onto any unclassified medium
  - Placing classified information where control is lost
  - Passing classified information from one company to another in an unauthorized manner or without proper authorization
  - Knowledge of deliberate mishandling of classified information that one fails to report

**Topic clarification:** The following non-assumptive questions may be used to clarify the security topic for mishandling classified information:

- Have you ever given classified USG information to a representative of a foreign government?

- Have you accepted money or something of value in exchange for giving classified USG information to someone without a USG security clearance?
- Have you deliberately handed over classified USG documents to someone who does not possess a USG security clearance?
- Have you deliberately passed digitized data media containing classified USG information to someone who does not possess a USG security clearance?
- Have you deliberately handed over classified USG equipment to someone who does not possess a USG security clearance?
- Have you intentionally discussed in an email any classified USG information with someone who does not possess a USG security clearance?
- Have you deliberately removed classified USG information from a secure facility without authorization?
- Have you deliberately stored classified USG information in an unauthorized or unsecured location?
- Have you provided an unauthorized person with access to a classified USG facility?
- Have you provided an unauthorized person with access to classified USG information via any authorized USG computer access?
- Has there been any instance when your actions resulted in an unauthorized person gaining access to classified USG information?

#### **R4: Have you had any unauthorized foreign contacts?**

**Security Concerns: Foreign Influence:** Foreign contacts and interests may be a security concern if the individual has divided loyalties or foreign financial interests, may be manipulated or induced to help a foreign person, group, organization, or government in a way that is not in U.S. interests, or is vulnerable to pressure or coercion by any foreign interest. Adjudication under this Guideline should consider the identity of the foreign country in which the foreign contact or financial interest is located, including, but not limited to, such considerations as whether the foreign country is known to target U.S. citizens to obtain protected information and/or is associated with a risk of terrorism.

#### **Conditions that could raise a Security Concern regarding Foreign Influence:**

- Contact with a foreign family member, business or professional associate, friend, or other person who is a citizen of or resident in a foreign country if that contact creates a heightened risk of foreign exploitation, inducement, manipulation, pressure or coercion;
- Connections to a foreign person, group, government, or country that create a potential conflict of interest between the individual's obligation to protect sensitive information or technology and the individual's desire to help a foreign person, group, or country by providing that information;
- Counterintelligence information, that may be classified, indicates that the individual's access to protected information may involve unacceptable risk to national security;

- Sharing living quarters with a person or persons, regardless of citizenship status, if that relationship creates a heightened risk of foreign inducement, manipulation, pressure, or coercion;
- A substantial business, financial or property interest in a foreign country, or in any foreign-owned or foreign-operated business, which could subject the individual to heightened risk of foreign influence or exploitation;
- Failure to report, when required, association with a foreign national;
- Unauthorized association with a suspected or known agent, associate, or employee of a foreign intelligence service;
- Indications that representatives or nationals from a foreign country are acting to increase the vulnerability of the individual to possible future exploitation, inducement, manipulation, pressure, or coercion;
- Conduct, especially while traveling outside the United States, which may make the individual vulnerable to exploitation, inducement, manipulation, pressure, or coercion;
- Conduct, especially while traveling outside the United States, which may make the individual vulnerable to exploitation, pressure, or coercion by a foreign person, group, government, or country.

### **Question Definitions:**

Unauthorized foreign contact: This is secret, hidden, covert or clandestine contact with a foreign national or a representative of a foreign government, power, group, organization, or firm. A foreign national is a non-US person, however, a representative of a foreign government, power, group or firm can be a US person known to be representing a foreign government or entity. Contact refers to any contact and includes all means of communication (personal, phone, computer, fax, radio or written). This contact would be considered unauthorized if it is covert, hidden, concealed and unreported.

- There are certain countries with which the USG intelligence community has a close working relationship. These countries are Canada, Great Britain, New Zealand and Australia. Many other countries, both friend and foe have demonstrated an intelligence gathering or terrorist threat against the USG.
- As outlined in the definition above, an unauthorized foreign contact can be a US person known to represent a foreign government or entity. Therefore, if the pretest discussion leads to close personal, illegal, professional or business contact with any foreign national obtain the details.
  - Nature of relationship, frequency of contact, type of contact (intimate, casual, professional)
  - Current or past involvement with any foreign government activity, including military.

Note: The term fraternization is defined as recurring unofficial social or business contact, or any type of close personal contact.

- Fraternalization does not include sanctioned relationships maintained for operational purposes, routine arms-length commercial transactions for goods or services or unavoidable casual or ad hoc encounters.
- Many foreign countries pose a documented intelligence and or terrorist threat to US citizens and the USG.
  - Many foreign countries are friendly or allied, but still target the USG for intelligence gathering purposes.

### **Elements: Unauthorized Foreign Contacts:**

- Business contact:
  - Own a business in a foreign country.
  - Have foreign nationals as business partners.
  - Own rental property in a foreign country.
  - Have foreign investments.
  - Have foreign bank accounts.
  - Have any type of business relationship with a FIS or FSS.
- Professional contact:
  - Recurring professional contacts with a FIS or FSS that have not been reported.
  - Recurring contact with foreign nationals met at symposiums, conferences or colloquiums that have not been reported.
  - Recurring contact with foreign nationals that are professional in nature such as co-authoring a book or research paper that have not been reported.
  - Sharing information with a foreign national that is official information dealing with examinee's job and has never been reported.
- Illegal or criminal contact:
  - Participating in any illegal act involving a foreign national.
  - Arrested, detained, interrogated or interviewed by foreign law enforcement, FIS or FSS.
  - Assisting any foreign national to illegally enter the US.
  - Personally aware of any foreign national involved in anything illegal or criminal.
  - Knowledge of unauthorized contacts that have been concealed from the USG in consideration of personnel security requirements.
  - Suspicious or repetitive contacts.
  - Requests for sensitive or classified information by the contact(s).
- Close personal contact:
  - Routine contact via phone, email, written correspondence.

- Plans for future contact, even if non-specific in nature.
- Shared personal affinity or connection including sexual intimacy.
- Business relationships, to include involvement in illegal activities.
- Shared living space in U.S. or abroad.
- This includes overnight stays at examinee's residence by a foreign national.
- Personal knowledge on the part of a foreign national regarding specific aspect of examinee's job.
- Any relationship with a foreign national that holds a dual citizenship.
- Any hidden contact that requires reporting under security regulations.

Topic clarification: The following non-assumptive questions may be used to clarify the security topic for unauthorized foreign contacts:

- Have you assisted any foreign national with illegal entrance into the U.S.?
- Have you assisted any foreign national with illegal immigration into the U.S.?
- Have you assisted any foreign national with illegal immigration into any other country?
- Have you engaged in any illegal activity with a citizen of a foreign country?
- Are you personally aware of any foreign nationals who are engaged in on-going criminal behavior?
- Are you personally aware of any foreign national who was previously engaged in any criminal behavior?
- Do you have knowledge of unauthorized foreign contacts that have been concealed from the USG for any reason?
- Do you have any friends or associates who are citizens of a foreign country?
- Have you assisted any foreign national with legal immigration to the US?
- Do you know anyone who is a citizen of a foreign country?
- Have you purposefully withheld any information about past or current associations with citizens of a foreign country?



## **Appendix B**

### **Directed Lie Comparison Questions / Irrelevant Questions For the TES Format**

#### **Directed Lie Comparison Questions (DLC):**

The following are the only acceptable directed lies.

All DLC questions must begin "Did you ever...".

"Have you ever" is reserved for the relevant questions

Reference to "specific family members" in a DLC question is not allowed.

This includes spouse, mother, father, brother, etc.

Below are DLC questions authorized at DACA:

- Did you ever take any government (*company*) supplies for your personal use?
- Did you ever violate a traffic (*fishing, hunting, boating*) law?
- Did you ever say something derogatory about another person behind his back?
- Did you ever do anything that made a close friend mad at you?
- Did you ever say something that you later regretted?
- Did you ever lie to a previous supervisor about anything?
- Did you ever borrow anything and forget to return it?
- Did you ever lie to a co-worker about anything at all?
- Did you ever say anything in anger that you later regretted?
- Did you ever brag about yourself to impress others?
- Did you ever lie to make yourself look important?
- Did you ever say anything about someone that was not true?
- Did you ever lie to a close friend?
- Did you ever commit a minor traffic violation?
- Did you ever cheat at golf (*cards, sports, school*)?
- Did you ever lose your temper?
- Did you ever exaggerate your fishing (*hunting, sports, work*) accomplishments?

#### **Irrelevant questions (I):**

The following are the only acceptable irrelevant questions.

- Are you now in (state)?
- Is today \_\_\_\_\_?
- Do you sometimes drink water?
- Are you now on (location)?
- Are you sometimes called \_\_\_\_\_?
- Are the lights on?

Are you sitting down?

Are you wearing shoes (sneakers, boots)?

Is this the month of \_\_\_\_\_?

Is the door closed?

## Appendix C

### Alternate Relevant Questions

The following are acceptable alternate relevant questions.

When multiple words are provided in parentheses, use only ONE of the words in the actual question.

#### **R-1 Damage to information or defense systems:**

- Have you deliberately done something that caused damage to a USG Information Technology System?
- Have you deliberately manipulated (*damaged*) any USG Information Technology System causing it to become a security risk?
- Have you deliberately modified any component of a USG information or defense System causing it damage?
- Have you intentionally performed any action that damaged a USG information or defense system?

Note: The question, “Have you *sabotaged* any US government information or defense systems may be too limited in scope. The term *sabotage* is considered the action of an enemy agent in time of war. The same might be said for using the action verb *destroyed*. To destroy something means that it is completely ruined. An individual could deliberately introduce a malicious code into a computer system that could slow the system down, but not destroy it.

#### **R-2 Espionage or Terrorism:**

- Have you committed (*engaged in*) espionage or terrorism against the United States?
- Have you participated in espionage or terrorism against the United States?
- Have you had contact with a FIS or terrorist group?
- Have you had concealed contact with a member of a FIS or terrorist group?

#### **R-3 Deliberate mishandling of classified information:**

- Have you intentionally mishandled any classified information?
- Have you deliberately failed to properly handle (*protect*) any classified information?
- Have you compromised any classified information?

Note: The term *mishandle* is broader in scope than compromise. (E.g. Improper packaging classified and placing in the mail may be considered “mishandled” however, the classified material is not compromised unless a non-cleared individual reviews the material). Security violations pertain to the rules and regulations involving the handling, storing, transporting and discussion of classified USG information. All compromises include a security violation, but security violations do not necessarily include a compromise.

**R-4 Unauthorized foreign contact:**

- Have you ever had any (secret) (hidden) (unreported) (concealed) foreign contacts?
- Are you (concealing) (hiding) any foreign contacts from the U.S. Government?
- Have you ever failed to report any unauthorized foreign contacts?
- Are you concealing contact with any unauthorized foreign national from (*assigned organization*)?

Note: It is important to evaluate your examinee. If examinee is a first generation US citizen or a non-US citizen the polygraph examiner may be considered the foreign national. It is suggested that the term “non-US citizen” might be a better term to use than “foreign national.”

If significant information is obtained when discussing the relevant issues, the preferred method is to move to a breakdown test to resolve the issue(s). However, when minor admissions are made the relevant question(s) can be prefaced with an appropriate qualifier:

"Other than what you told me"

"Besides what we have discussed"

“Have you revealed the fullest extent”

“Excluding”

## Appendix D

<p>POLYGRA CONS</p>	<p style="text-align: center;">PH EXAMINATION ENT FORM</p>									
<p>I, _____, have been asked to undergo a polygraph examination by _____, regarding NATIONAL SECURITY MATTERS. I understand that:</p>										
<p>a. The polygraph examination is voluntary and I must consent in writing prior to undergoing the examination.</p>										
<p>b. Adverse action will not be taken against me based solely on a refusal to undergo this examination, and any refusal will not be recorded in my personnel file.</p>										
<p>c. Refusal to undergo a polygraph examination does not preclude security investigation by other means.</p>										
<p>d. The examiner will provide an explanation of the polygraph instrument and review all test questions prior to each test.</p>										
<p>e. The examination area contains the following recording devices:</p>										
<table style="width: 100%; border: none;"> <tr> <td style="padding-left: 20px;">two-way observation mirror</td> <td style="padding-left: 20px;">YES</td> <td style="padding-left: 20px;">NO</td> </tr> <tr> <td>video recording devices</td> <td>YES</td> <td>NO</td> </tr> <tr> <td>audio recording devices</td> <td>YES</td> <td>NO</td> </tr> </table>		two-way observation mirror	YES	NO	video recording devices	YES	NO	audio recording devices	YES	NO
two-way observation mirror	YES	NO								
video recording devices	YES	NO								
audio recording devices	YES	NO								
<p>f. I understand this examination will be recorded and/or observed.</p>										
<p>g. This consent form does not constitute a waiver of my Constitutional rights against self-incrimination.</p>										
<p>h. I may consult with legal counsel to answer questions in conjunction with the polygraph examination.</p>										
<p>I UNDERSTAND THE PROVISIONS AND FREELY AND VOLUNTARILY CONSENT TO UNDERGO A POLYGRAPH EXAMINATION. NO THREATS HAVE BEEN MADE OR PROMISES EXTENDED TO ME TO OBTAIN MY PARTICIPATION IN THIS EXAMINATION.</p>										
<p><b>DATE</b></p>	<p><b>SIGNATURE OF EXAMINEE</b></p>									
<p><b>DATE and TIME</b></p>	<p><b>SIGNATURE OF EXAMINER</b></p>									
<p><b>SIGNATURE OF WITNESS</b></p>										

## **Appendix E**

### **Transition from first sub-test to the next**

1. Inform examinee no obvious issues observed on the test, but it must go through a QC process before a definitive decision can be made.
2. Explain that you are moving to the next sub-test.
3. Next test will have same types of questions - security questions and two types of diagnostic questions.
4. Must be 100% honest on the next set of security questions.
5. Remind examinees it is their responsibility to ask questions if they do not understand something, and to provide thorough and complete information as it relates to the security issues.
6. Also, remind examinees that they will once again be asked some diagnostic questions where they will be asked to lie.
7. The reason – after initial testing some lose the capability of responding because of fatigue and these questions will let you know they have that continued capability of responding when they lie.

## Appendix F

### TES OUTLINE

The outline is designed to provide a guide for the TES pretest interview. The pretest interview should not be read, memorized and recited as if being read or spoken as if the pretest was a series of bullet statements. The pretest is an elicitation interview seeking reportable information. Once the pretest is concluded the examinee should be fully aware of all the relevant issues and his or her responsibility as it relates to providing complete, straightforward and truthful information regarding those issues.

#### INTRODUCTION

- Who you are: Name/the polygraph examiner
- Purpose: A security exam to obtain or retain your security clearance/access to a SAP
- Exam consists of several tests
  - Will explain all the questions on each test before conducting them

#### CONSENT (If agency requires it - do rights advisement)

- Read consent form to examinee
- Indicate any recording or observation devices
- Examinee and Examiner sign consent form

#### OVERVIEW OF PROCEDURES

- Will ask medical and health questions to make sure suitable to take test
- Will explain instrument and how it works
- Will demonstrate how it works – Acquaintance test
- Will discuss all questions prior to each test
- Each test will have security questions and two types of diagnostic questions

#### OPENING STATEMENT

- **Set the stage:**
  - o Different from most job interviews
  - o About suitability to possess or retain a TS or access to a SAP
  - o *Credibility Assessment* of ability to provide complete and accurate information to security questions on the test
- **Explain the process**
  - o Two parts to Credibility Assessment
  - o First – discussion of test questions
  - o Second – when sensors attached and physiology recorded
  - o Must do two things to be successful in this process
- **Fix responsibility - First**
  - o Examinee responsibility - If you do not understand something your responsibility to ask questions until you understand.

- Examiner responsibility – My job is answering all your questions completely so the test will be successful.
- **Encourage truthfulness** – Second – Examinee responsibility
  - Be thorough and accurate when answering the security questions
  - Provide minor detail even if it appears unimportant
  - End of discussion – you should be confident of accuracy of all your statements. If not, then our discussion should continue
- **Seal the deal**
  - Can I count on you to ask me questions if you do not understand something?
  - Can I count on you to be completely straightforward and truthful in all your statements regarding the security questions today?
  - Obtain an affirmative answer

### **MEDICAL/BIOGRAPHICAL/CM STATEMENT**

- Determine medical suitability
- Obtain sufficient biographical information for possible PLC use later
- Do not lay foundation for PLC questions – this is a DLC format
- No lifestyle information discussed – Unless it is brought up by examinee when discussing security questions

### **COUNTERMEASURES STATEMENT**

- Not uncommon to research the topic of polygraph
- Many sites provide bogus information
- Cause many to think they must attempt to influence outcome of polygraph
- Such activity suggests non-cooperativeness and deceptiveness
- Can I count on you not to involve yourself in such activity
- Get affirmative answer

### **INSTRUMENT AND F3**

- Show and explain each component as taught at DACA
- Provide F3
  - Changes result of autonomic system
  - Body produces responses when you lie or conceal information
  - Raised to know right from wrong – can't control changes when you lie
  - Responses are automatic even when the lie is minor
  - Must be 100% honest to the security questions
  - Remember your responsibility to ask questions if you do not understand something and be completely honest and thorough when discussing the security questions

### **ACQUAINTANCE TEST**

- Give rationale for the test
  - Become accustomed to the recording components
  - Adjust instrument to your physiology



- Demonstrate you are capable of responding when you lie
- Verbally sell upon completion
  - Reacted strongly
  - Must be 100% truthful to security questions

## QUESTION REVIEW

- Security questions and two different types of diagnostic questions
- Discuss security questions for the first test
- **Sacrifice Relevant**
  - Need to make sure you are truthful to security issues we are about to discuss so I will ask you:
  - Do you intend to answer the security questions truthfully?

## **R1 Damage to USG information and defense systems** *(Note: This is the topical area. Do not read the question until after the question is scoped)*

- What comes to mind when you think of damage to USG information systems?
  - Listen to and evaluate response.
- Short definition: USG information systems are computers and computer systems and everything that links these computers and systems together.
  - Explain difference between USG computer and corporate computer
- Unauthorized access
  - Exchange passwords
  - Misuse (porn, private business, piracy)
  - Hacking
- Physical damage
  - Deliberate and intentional
  - Pouring acid or liquid into an information system
  - Breaking hardware, firmware, or components
  - Sabotage
- Uploading a malicious code
  - Purposeful, malicious to do harm
  - Deliberately placing malicious code into USG system
- Unauthorized altering
  - Changing or deleting without proper permission
  - Use of “back doors” or other surreptitious methods to read restricted data
  - Entering someone else’s compartmented data without permission
  - Altering a USG computer to accept unauthorized hardware
- Topic clarification questions (Pick appropriate questions)
  - Have you used a USG computer to transfer classified to any unauthorized person?
  - Have you downloaded classified without proper permission?
  - Have you hacked into a USG computer?
  - Have you intentionally introduced any malicious code?
  - Have you deliberately damaged in any manner?

- Have you used USG computer to commit a crime?
  - Have you altered info in USG computer without authorization?
  - Have you given your USG computer password to anyone?
  - Are you concealing any unauthorized use of a USG computer?
- What does the topic of damaging USG defense systems suggest to you?
  - Listen to and evaluate examinee's response.
    - Short definition: Refers to military weapon systems used by USG in our nation's defense to include reconnaissance programs. This is equipment associated directly with the security of the US, its military forces, its borders, embassies, and territories.
  - Weapon Systems
    - Orbiting in space; flying in the air; ground based; floating on or under the water
    - Deliberate physical damage or software damage
  - Reconnaissance programs
    - Intentional damage to
    - Intelligence, Surveillance, and Reconnaissance (ISR) programs
    - Can be hand-held, high altitude UAV, manned aircraft or satellites
    - Damage can be physical or uploading malicious code, altering software
  - Computers connecting, controlling or operating
    - Deliberate damage to command and control systems
    - Adding unauthorized software, firmware, or hardware
    - Unauthorized altering of data or deleting data
    - Physical damage
    - Uploading a malicious code
  - Peripheral Equipment
    - Intentional damage
    - For the purpose of slowing down, damaging, or destroying defense systems
  - Topic clarification for damage to USG defense systems (Pick appropriate questions)
    - Have you deliberately damaged any USG defense system?
    - Have you committed an act of sabotage on any USG property?
    - Have you introduced malicious code into a computer connecting defense equipment?
    - Have you hacked into a computer to slow down USG defense systems?
    - Have you been approached or contacted to engage in sabotage?
    - Has any entity not associated with the USG offered you money, training or tasked you to commit an act of sabotage?
    - Have you been compensated for any sabotage activity?
    - Do you have knowledge of any sabotage activity or planned sabotage activity against the USG?
- Question you will hear on the test – “Have you deliberately damaged any USG information or defense systems”?

- How would you answer that question?
- Evaluate the answer.
- Move to a direct question if withholding behavior is observed.

**R2 Involvement in espionage or terrorism against the United States** *(Note: This is the topical area. Do not read the question until after the question is scoped)*

- What does the term espionage mean to you?
  - Evaluate answer – Withholding behavior? Ask direct question.
- Definition: Intentional unauthorized release of classified information or material to a foreign government, power, group or organization with intent or reason to believe that such release may be used to injure the USG or provide an advantage to a foreign government, power, group or organization.
- Elements: Unreported personal, professional or business contact with a representative of a FIS or FSS.
- Unreported contact can involve:
  - Approaches or pitches
  - Offering or volunteering
  - Recruitment, training, tasking
  - Improper copying, removing, transporting and storing for espionage purposes
  - Compensation
  - Spotting and assessment activity
  - Unreported knowledge of espionage
- Topic clarification questions: (Pick appropriate questions)
  - Have you performed any secret assignment or work for any foreign government?
  - Have you accepted money or anything of value from a foreign government?
  - Have you had any unreported meetings with a rep from a foreign government?
  - Have you had contact with a foreign government by phone? Email? Written correspondence? Third party?
  - Have you met anyone you suspect may have been a rep of a foreign government?
  - Have you met anyone you suspect may have had official connections with a FIS or FSS?
  - Have you been arrested in a foreign country?
  - Have you ever been detained in a foreign country?
- What does the word terrorism mean to you?
  - Evaluate examinee's answer – withholding behavior – Ask direct question.
- Definition: Calculated use of violence or threat of violence to induce fear and is intended to coerce or intimidate governments or societies in the pursuit of goals that are generally political, religious or ideological. Terrorist activity can be subversive as it interferes

with, undermines, or denies individuals those rights guaranteed under the US Constitution and results in or leads to the violent or illegal attempt to overthrow the USG.

- Elements:
  - o Member or previous member
  - o Providing support (*time, money, computer or information sharing*)
  - o Concealing contact
  - o Taking part in or knowledge of
- *Topic clarification questions* (Pick appropriate questions)
  - o Are you a terrorist?
  - o Have you been a member of any international terror organization such as Al-Qa'ida or Hezbollah?
  - o Have you associated with members of any international terror organization?
  - o Have you been a member of a domestic terrorist organization?
  - o Have you provided time or money to any domestic terrorist group?
  - o Do you know anyone associated with any terrorist group or organization?
  - o Have you committed any crime for political or social reasons?
  - o Have you assisted others who committed crimes for political or social reasons?
  - o Are you withholding any information about your personal connection to terrorist activity?
  - o Are you withholding any information about your personal connection with any individual engaged in terrorist activity?
- Question you will hear on the test – “Have you been involved in espionage or terrorism against the United States”?
  - o How would you answer that question?

### **Transition to diagnostic questions:**

- Those are the only security issues we will cover on this test.
  - o The next sets of questions we will discuss are the diagnostic questions.

### **Diagnostic Questions:**

- Rationale:
  - o ACQT demonstrated when you lie you respond.
  - o Sometimes people lose the capacity to respond (fatigue, etc.)
  - o I need to make sure you maintain the “capability to respond when you lie”
  - o Therefore, I am going to ask you some questions to make sure you retain this capability.
- DLC set-up:
  - o “We have all at one time or another:
    - Violated a traffic (fishing, boating) law
    - Said something in anger we later regretted
    - Said something derogatory about another behind his back

- Borrowed something and failed to return it
    - Lost our temper
    - Lied to a close friend
  - Obtain affirmative nod or verbal “yes”.
  - Think of a specific instance without telling any detail.
    - When you have a specific instance in mind give an affirmative nod.
  - When I ask you the question – lie to me by answering “no”.
  - Review the question to make sure examinees answers “no”.
    - After they answer “no”, remind them that they are lying about the specific event that they thought of earlier.
    - The answer to the DLC should be as timely as the answers to the irrelevant and relevant questions.
  - Set up the second DLC in the same manner.
- Irrelevant question set-up:
- Will be asking questions that we both know you are being truthful to when you answer them.
  - I need to see how you respond when telling the truth.
  - Review the irrelevant questions:
    - Are you in the state of \_\_\_\_\_?
    - Is today \_\_\_\_\_?
    - Are the lights on?
    - Are you sitting down?
    - Is this the month of \_\_\_\_\_?
    - Is the door closed?
  - Read the question and obtain an appropriate answer.

**Re-review all the questions in this order: SR, R1, R2, C1, C2, I1, I2**

- Obtain a verbal answer to each question.
- Make sure examinee answers the DLC questions appropriately.
  - If the answer is inappropriate (e.g. a “yes” answer) provide instructions and ask the question until the examinee gets the answer right.

**Prepare examinee for the test:**

- Will be asking questions in different order
- Format requires some questions to be asked several times
- Sit still; look ahead, no moving, etc (same procedures as acquaintance test)

**Conduct the first sub-test**

**Evaluate the test data**

**At DACA, after providing a numeric evaluation to the sub-test check with your instructor before moving to the next phase**

**If the first sub-test is NSR, transition to the second sub-test:**

- Did not see any significant physiology at the security questions, but the results must be validated through a quality control process.
- Will continue with additional testing.
- Next test will have same types of security and diagnostic questions.
- Must be 100% honest on security questions
- Need to make sure you have the continued capability of responding when you lie.
- Remind examinees of their responsibility to ask questions if they do not understand something and to be thorough in their answers to the security questions.
  - When ready to review DLCs – Explain whether the DLC questions will be the same or different diagnostic questions.
    - o If the questions are changed, explain that they were changed in order to help him/her pay attention and answer as reviewed.
      - “Sometimes people become bored, tired or fatigued during testing and fail to pay attention as the test progresses.
      - By changing the questions, you will have to pay attention to keep from mis-answering the new questions.”

**Review of security questions for the second sub-test:**

- Sacrifice Relevant
  - o Need to make sure you are truthful to security issues we are about to discuss so I will ask you:
  - o Do you intend to answer the security questions truthfully?

**R3 Mishandling classified information** *(Note: This is the topical area. Do not read the question until after the question is scoped)*

- What does “mishandling classified information mean to you”?
  - o Evaluate answer – Withholding behavior – ask a direct question.
- Definition: Deliberate failure to protect classified information. Removing or storing hard copy, electronic, or memorized classified information with the intent of giving, passing, selling, keeping, or publishing that information for any reason. Includes providing classified or facilitating access to classified information to any unauthorized persons, to include the media, unauthorized US citizens, or foreign nationals. Failing to report efforts by non-cleared individuals to obtain classified information. Unauthorized removal of classified from a secure location and long-term storage outside an approved area. This would include transfer of classified to a non-approved computer.
- Classified refers to USG information only. Three classifications:
  - o Confidential
  - o Secret
  - o Top Secret

- Elements:
  - o Providing to an uncleared US citizen or a cleared US citizen without a need-to-know
    - One who does not have a USG security clearance
    - One who has a USG clearance but the information is compartmented and the person does not have a need-to-know
  - o Providing to the media or press
    - Radio, TV, Magazines, Newspapers, Book deals
    - Computer blogs, web-sites, bulletin-boards
    - Telephone, FAX, Email, Personal interviews
  - o Providing to any foreign national
    - Hidden, conceal or not reported
    - Foreign press or media
    - Foreign embassy, consulate, organization, group
    - US citizen representing a foreign group, organization, government, or country
  - o Unauthorized removal and storage
    - Removing from a secure environment to an unsecure or unauthorized environment
    - Placing classified where control is lost
    - Passing to anyone in an unauthorized manner
  
- *Topic clarification questions for mishandling classified information(Pick the most appropriate questions):*
  - o Have you ever given classified USG information to a representative of a foreign government?
  - o Have you accepted money or something of values in exchange for giving classified USG information to someone not authorized to receive it?
  - o Have you deliberately handed over classified USG information to someone who does not possess a USG security clearance?
  - o Have you deliberately passed digitized classified data to someone not authorized to receive it?
  - o Have you intentionally discussed in an email any classified USG information with someone who does not possess a USG security clearance?
  - o Have you deliberately passed classified information to any member of the media or press?
  - o Have you removed classified material from a secure location without authorization?
  - o Have you deliberately stored classified material at an unauthorized location?
  - o Have you provided an unauthorized person with access to a classified USG facility?
  - o Have you provided an unauthorized person with access to classified USG information via any authorized USG computer access?
  - o Has there been any instance when your actions resulted in an unauthorized person gaining access to classified USG information?

- Question you will hear on the test – Have you deliberately mishandled any classified information?
  - o Obtain the appropriate answer.

**R4 Unauthorized foreign contact** (*Note: This is the topical area. Do not read the question until after the question is scoped*)

- What does unauthorized foreign contact mean to you?
  - o Evaluate examinee’s behavior
- Definition: This is secret, hidden, covert or clandestine contact with a foreign national or a representative of a foreign government, power, group, organization or firm. A foreign national is a non-U.S person, however a representative of a foreign government, power, group or firm can be a US person known to be representing a foreign government or entity. Contact refers to any contact and includes all means of communication (personal, phone, computer, fax, radio or written). This contact would be considered unauthorized if it is covert, hidden, concealed and unreported. Such contacts include:
  - Elements:
    - o Business matters
      - Own a business in a foreign country
      - Have foreign business partners
      - Own rental property in a foreign country
      - Have foreign investments
      - Have foreign bank accounts
      - Have any type of relationship with a FIS or FSS
      - Recurring business contacts of any type with a FN
    - o Professional activity
      - Recurring professional contacts with a FIS or FSS
      - Recurring contact with FN met a symposiums, conferences or colloquiums
      - Recurring contact with FN that are professional such as co-authoring a book or research paper
      - Sharing information with a FN that is official information dealing with examinee’s job and has never been reported.
    - o Illegal behavior, detention, arrest
      - Participating in any illegal act involving a FN
      - Arrest, detained, interrogated or interviewed by foreign law enforcement, FIS or FSS.
      - Assisting any FN to illegally enter the US.
      - Personally aware of any FN involved in anything illegal or criminal.
    - o Personal relationships that are close and ongoing
      - Routine contact via phone, email, written correspondence.
      - Plans for future contact, even if non-specific in nature.
      - Shared personal affinity or connection including sexual intimacy.
      - Business relationships, to include involvement in illegal activities.
      - Shared living space in US or abroad.



- Overnight stays at examinee’s residence by a FN.
  - Personal knowledge on part of FN regarding specifics of examinee’s job.
  - Any relationship with a FN with dual citizenship.
  - Any hidden contact that requires reporting under security regulations.
- *Topic clarification questions for concealed non-US citizen contact* (Pick appropriate questions)
    - Have you assisted any FN with illegal entrance into the US?
    - Have you assisted any FN with illegal immigration into the US?
    - Have you assisted any FN with illegal immigration into any other country?
    - Have you engaged in any illegal activity with a FN?
    - Are you personally aware of any FN engaged in on-going illegal activity?
    - Are you personally aware of any FN who previously engaged in criminal activity?
    - Do you have any friends or associates who are citizens of a foreign country?
    - Have you assisted any foreign national with legal immigration into the US?
    - Do you know anyone who is a citizen of a foreign country?
    - Have you purposefully withheld any information about past or current associations with citizens of a foreign country?
  - Question you will hear on the test – Have you had any unauthorized foreign contacts?
    - Obtain the appropriate answer.

### **Transition to diagnostic questions:**

- Those are the only security issues we will cover on this test.
  - The next questions we will discuss are the diagnostic questions.

### **Diagnostic Questions:**

- Give rationale again (as in previous sub-test)
  - Known lies - to ensure that examinees have continuing capability to respond when they lie
  - Known truth - to see how they respond when they tell the truth
- DLC set-up:
  - “We have all at one time or another:
    - Violated a traffic (fishing, boating) law
    - Said something in anger we later regretted
    - Said something derogator about another behind his back
    - Borrowed something and failed to return it
    - Lost our temper
    - Lied to a close friend
  - Obtain affirmative nod or verbal “yes”.
  - Think of a specific instance without telling any detail.
    - When you a specific instance in mind give an affirmative nod.
  - When I ask you the question – lie to me by answering “no”.
  - Review the question to make sure examinees answers “no”.

- After they answer “no”, remind them that they are lying about the specific event that they thought of earlier.
    - The answer to the DLC should be as timely as the answers to the irrelevant and relevant questions.
  - Set up the second DLC in the same manner.
- Irrelevant question set-up:
  - Will be asking questions that we both know you are being truthful to when you answer them.
  - I need to see how you respond when telling the truth.
  - Review the irrelevant questions:
    - Are you in the state of \_\_\_\_\_?
    - Is today \_\_\_\_\_?
    - Are the lights on?
    - Are you sitting down?
    - Is this the month of \_\_\_\_\_?
    - Is the door closed?
  - Read the question and obtain an appropriate answer.

**Re-review all the questions in this order:** SR, R3, R4, C1, C2, I1, I2

- Obtain a verbal answer to each question.
- Make sure examinee answers the DLC questions appropriately.
  - If the answer is inappropriate, (e.g. a “yes” answer) provide instructions and ask the question until he or she gets the answer right.

**Prepare examinee for the test:**

- Will be asking questions in different order
- Format requires some questions to be asked several times
- Sit still; look ahead, no moving, etc (same procedures as acquaintance test)

**Conduct the second sub-test**

# Appendix G

## TES SCORE SHEET

Sub-Test     

First Asking	R__	R__
Pneumos		
Electrodermal		
Cardio		
1st Asking Totals		
Second Asking	R__	R__
Pneumos		
Electrodermal		
Cardio		
2nd Asking Totals		
Third Asking	R__	R__
Pneumos		
Electrodermal		
Cardio		
3rd Asking Totals		
<b>Question Score</b>		

Examiner\_\_\_\_\_

Examinee\_\_\_\_\_

Date and Time\_\_\_\_\_

<p><b>Global Review</b></p> <p>X - Hit                  ? - Inc                  / - Acceptable                  0 - Artifact</p> <p><u>TES A</u></p> <p>R1    ___    ___    ___</p> <p>R2    ___    ___    ___</p> <p><u>TES B</u></p> <p>R3    ___    ___    ___</p> <p>R4    ___    ___    ___</p>		
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Note: Above inserted to assist DACA students in their global review of test data.

**Comments:** Place on reverse.

<b>Sub-Test Score</b>	
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<b>DECISION</b>	<b>NSR</b>	<b>NO</b>	<b>SR</b>
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## Appendix H

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## TES Scoping and Withholding Behavior Guide

**Sabotage:** Deliberate act(s) of misuse, damage, contamination, slowing down, interference with, or altering of USG Information Technology Systems (ITS), and/or defense systems (DS). *Topic clarification/withholding behavior questions:*

- Have you engaged in any acts of sabotage against a USG ITS or DS?
- Have you been trained, tasked or recruited for sabotage purposes?
- Have you received any compensation for sabotage activity?
- Do you know anyone who has sabotaged a USG ITS or DS?
- Intentionally placed a virus/malicious code into a USG ITS or DS?
- Illegally intruded into a USG ITS?
- Created a secret backdoor on a USG ITS?
- Have you helped, planned or participated with anyone to engage in sabotage against a USG ITS or DS?
- Used USG ITS access to commit any crime for self or someone else?
- Unauthorized altering or deleting data on a USG ITS?
- Approached by someone to engage in unauthorized access or damage to USG ITS or DS?

**Espionage:** The intentional, unauthorized release of classified or sensitive USG information or material to a foreign government, power, group or organization with an intent or reason to believe the information will injure the USG or give an advantage to the foreign government, power, group or organization. *Topic clarification/withholding behavior questions:*

- Have you spied against the U.S.?
- Have you compromised classified information to/for any foreign government, group, power or organization?
- Have you attempted/offered to spy against the U.S.?
- Have you been tasked to obtain classified information by someone representing a foreign government/power?
- Performed secret assignments for any foreign government/power?
- Have you copied, removed, transported or stored classified material for espionage purposes?
- Have you been trained, tasked or recruited to spy against the U.S.?
- Have you received any compensation for espionage activity?
- Do you know anyone involved in espionage against the U.S.?
- Have you ever been coerced to provide classified to a foreign representative?
- Have you helped, planned, or participated with anyone to spy against the U.S.?
- Unreported contact with foreign intelligence/security, military, diplomatic, transnational/terrorist personnel?
- Contact with a foreign government representative by phone, email, writing, or via a third party?

**Terrorism:** The use of violence or threat of violence to achieve political goal(s). *Topic clarification/withholding behavior questions:*

- Have you committed any terrorist acts against the U.S. (foreign-based, domestic-based, eco-terrorism)?
- Any direct knowledge of a terrorist plot against the U.S. (past or impending)?
- Have you had any direct involvement in terrorism (assassinations, bombings, sabotage, ambushes, hostage situations, or use of biological/chemical/radiological device)?
- Any secondary involvement in terrorism (acting as a lookout, surveillance activities, planning, intelligence)?
- Any support involvement (time, money, technical, training, handling lethal substances or explosives, communications, false documents, safe houses, expert advice, facilities)?

- Have you ever been a member of or pledged allegiance to any terrorist organization?
- Have you been trained, tasked or recruited by a terrorist organization?
- Have you attempted/offered to engage in terrorism against the U.S.?
- Do you know anyone involved in terrorist activity against the U.S.?
- Have you been involved in the commission of any crime for political or social reasons?

**Mishandling Classified:** Unauthorized disclosure of classified information by any means to anyone, or the unauthorized removal of classified material from a secure area to an unsecured location where materials may be lost or compromised. *Topic clarification/withholding behavior questions:*

- Have you intentionally provided classified to someone who was clearly not authorized to receive it?
- Have you stored classified information outside of government control (home, computer, etc.)?
- Have you helped, planned or participated with anyone to mishandle classified information?
- Have you accepted compensation in exchange for classified information?
- Have you provided classified information to any media personnel?
- Have you disclosed classified info to the public via internet/computerized social network/blogs?
- Have you passed classified secrets from one company to another?
- Have you processed/stored classified information on any unauthorized ITS?
- Have you provided classified USG information to a representative of a foreign government/power?
- Have you deliberately provided USG equipment to any unauthorized person?

**Unauthorized Foreign Contact(s):** Secret, hidden, covert, or clandestine contact with a (a non-U.S. citizen or someone representing a foreign government/group/power or organization) foreign national (FN) or with a representative of a foreign government, power, group or organization. *Topic clarification/withholding behavior questions:*

- Any unreported contact with any known or suspected foreign government representative/power (intelligence, security, diplomatic, military, criminal, terrorist)?
- Any foreign financial or property obligations (business, banking, real estate, legal or illegal partnerships)?
- Contact with anyone involved in international criminal activity (Drugs/weapons/human smuggling or trafficking, or any other felony crimes)?
- Any foreign relationships of obligation, exploitation, inducement, manipulation, pressure or coercion?
- Any intention to marry, cohabitate, or any continuing intimate relationships with FN (regardless of residency)?
- Any other close and continuing relationships with FN (regardless of residency)?
- Have you participated in any illegal act involving a foreign national?
- Have you had suspicious or unusual contact with any FN?
- Have you had any contacts that would require reporting under your agency's security regulations?
- Ever arrested/interviewed/interrogated/detained in foreign country or by a foreign security service?
- Ever owned a foreign passport? Still have it? Ever travelled using one?
- Have you ever claimed dual citizenship? Claiming dual citizenship now?
- Any unreported travel to a foreign country?
- Do you have knowledge of coworkers with suspicious foreign contact?

U.S. Department of Homeland Security  
Washington, DC 20229



U.S. Customs and  
Border Protection

DATE: June 29, 2010

MEMORANDUM FOR: Credibility Assessment Division (CAD) Personnel

FROM: Director, Credibility Assessment Division  
Office of Internal Affairs

SUBJECT: CAD Policy Additions

Effective immediately, all CAD polygraph examiners will adhere to the following procedures or policies when administering any CAD polygraph examination:

I. **Audio Recording Polygraph Examinations**

All CAD polygraph examinations shall be audio recorded, unless otherwise directed by the CAD Director, or designee.

II. **Monitoring of Polygraph Examinations by an Attorney or Union Representative**

When requested, an attorney or union representative for an examinee may monitor a CAD polygraph examination either audibly and visually (if available) from a remote location. The polygraph examiner must insure such representatives do not interrupt or otherwise disrupt a CAD polygraph examination and should be so instructed prior to the administration of a CAD polygraph examination.

Any representative who monitors a CAD polygraph examination will be identified as such in the CAD polygraph examination reporting protocol.

III. **Written Statements**

- a. **CAD Applicant Examinations** – A written statement detailing an admission against interest should be obtained when an applicant admits to significant criminal activity that is undetected, unresolved, or currently under investigation. Significant criminal activity includes, but is not limited to, murder, manslaughter, rape, human trafficking, and significant drug trafficking.
- b. **CAD Specific Issue Examinations** - In the event the examinee is determined to be deceptive and a confession is obtained, at the conclusion of the polygraph, the case agent should take a written statement from the examinee detailing the confession. A written statement, prepared in accordance with 28 U.S.C. § 1746 alleviates the burden of additional travel and expenditure of time for the

examiner to appear at any subsequent administrative or judicial proceedings.  
(*Reference* – CAD Policy and Procedures Manual – Initiating a Polygraph Examination)

- c. Confirmed Countermeasures – The details provided by an examinee regarding employing countermeasures during a CAD polygraph examination should be documented by the examinee in a written statement prepared in accordance with 28 U.S.C. § 1746. (*Reference* – CBP/CAD Countermeasure Guide)

All CAD polygraph examiners must receive CAD management approval before deviating from the policies described above.



# FEDERAL GUIDELINES APPENDICES

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FEDERAL  
PSYCHOPHYSIOLOGICAL DETECTION OF  
DECEPTION  
EXAMINER HANDBOOK

COUNTERINTELLIGENCE FIELD ACTIVITY TECHNICAL MANUAL

September 12, 2005

02/06

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## FOREWORD

This manual is issued under the authority of DoD Directive 5210.48, DoD Polygraph Program. Its purpose is to prescribe uniform Psychophysiological Detection of Deception (PDD/polygraph) procedures. The provisions of this manual are effective immediately and apply to those DoD elements that use PDD, and by agreement to other federal law enforcement, counterintelligence, and security agencies that also use PDD procedures.

Procedures and formats prescribed herein are based upon the requirements of the Components and of the federal agencies with established polygraph programs.

This manual is mandatory for use by all of the Components and those federal agencies participating in the Quality Assurance Program. Heads of the Component organizations may issue supplementary instructions only when necessary to provide for unique requirements in support of their respective missions.

This update supersedes the April 14, 2005, version of the Handbook. The modifications to this technical manual were completed in accordance with paragraph C.1.3.2., below.

David Burtt, II  
Director

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## ACRONYMS AND ABBREVIATIONS

TERM	ACR	ONYM/ABBREVIATION
Acquaintance Test	ACQT	
Comparison Test Format	CTF	
Counterintelligence Scope Polygraph	CSP	
Counterintelligence Screening PDD	CSP	
Deception Indicated	DI	
Department of Defense Polygraph Institute		DoDPI
Directed-Lie Comparison	DLC	
Federal PDD Examiner Handbook		Handbook
Modified General Question Test		MGQT
No Deception Indicated	NDI	
No Opinion		NO
No Significant Response	NSR	
Peak of Tension	POT	
Plan of Instruction		POI
Probable-Lie Comparison	PLC	
Psychophysiological Detection of Deception		PDD
Quality Assurance Program	QAP	
Quality Control	QC	
Rank Order Scoring System	ROSS	
Relevant/Irrelevant	R/I	
Searching Peak of Tension	SPOT	
Significant Response	SR	
Test for Espionage and Sabotage		TES
United States Army Military Police School		USAMPS
Zone Comparison Test	ZCT	



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## DEFINITIONS AND TERMS

Acquaintance Test (ACQT): A questioning format that 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 recovery.  
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.

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.

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 that 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 that 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 limited scope 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.

Field Rank Order Scoring System: A version of the RQSS that is an optional method of evaluating R/I counterintelligence scope PDD examinations, sometimes referred to as the "High Three."

Forensic Psychophysiological Detection of Deception: 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.

Irrelevant Question: A question that 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 that 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 PQT 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 that may be indicative of the examinee's overall response capability.

Personnel Security Screening (PSS) PDD Examination: A PDD screening examination conducted to aid in determining an individual's eligibility for initial or continued access to designated programs or information, 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 that 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 Anti-Countermeasures (ACM). Those procedures routinely included in the examination protocol to deter or neutralize CM.

PDD Counter-Countermeasures (CCM). Those procedures invoked only when CM are suspected and are used to defeat them or confirm their presence.

PDD Countermeasures (CM): Those strategies by examinees to affect PDD testing by the intentional employment of physical, mental, pharmacological, or behavioral efforts.

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 posttest 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 that 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 primarily to evaluate relevant/irrelevant questioning formats.

Recovery: A deviation in a tracing attributable to a physiological phenomenon occurring as a compensatory action after a response or an artifact.

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 that may be utilized in an R/I question format to determine the examinee's overall capacity for response.

Symptomatic Question: A question that 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 that may consist of unwanted noise, artifact, recovery, 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.

## CI. CHAPTER I

### INTRODUCTION

#### CI.1. CONCEPT OF FEDERAL PSYCHOPHYSIOLOGICAL DETECTION OF DECEPTION

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

#### CI.2. SCOPE

Nothing in the 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 the Handbook shall not give rise to any claim cognizable in a court of law. The 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 United States, its agencies or instrumentalities, its officers or employees, or any other person.

#### CI.3. POLICIES AND PROCEDURES FOR THE CONDUCT OF EXAMINATIONS

CI.3.1. Agency heads should establish procedures for the supervision of PDD programs to ensure the highest ethical, professional, and technical standards. General principles for PDD examinations are contained in the Handbook.

CI.3 .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.

## **C2. CHAPTER 2**

### **QUALITY CONTROL**

#### **C2.1. SCOPE**

This guide establishes the essential elements for quality control within the Federal Government.

#### **C2.2. BACKGROUND**

In order to develop minimum standards for the conduct of QC within the Federal Government, the PDD program managers and the Department of Defense Polygraph Institute established the Quality Assurance Working Group which developed the basis for these QC standards.

#### **C2.3. ADMINISTRATION OF QUALITY CONTROL**

C2.3.1. Quality Control 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.

C2.3.2. Technical Supervision of Examiners. Quality Control procedures for the technical supervision of PDD examiners should ensure ethical, professional, and technical standards are maintained.

C2.3.3. Quality Control Supervision. The QC of PDD examinations should be under the supervision of the PDD program manager.

C2.3.4. Quality Control Personnel. Quality Control procedures should only be accomplished by designated, experienced, certified PDD examiners.

C2.3.4.1. Personnel assigned responsibilities of QC should have a minimum of two years' experience as a PDD examiner.

C2.3.4.2. Quality Control personnel should have a grade level commensurate with Their authority, responsibility, and technical abilities.

C2.3.4.3. Quality Control personnel should have technical authority over PDD examiners and should have input into their performance ratings.

C2.3.5. Centralized Quality Control. To ensure consistent implementation of agency policy, QC procedures should be as centralized as possible.

#### **C2.4. QC PROCEDURES**

C2.4.1. Operating Procedures. Each agency should have standard operating procedures for the conduct of its QC program.

C2.4.2. Independent and Objective Quality Control. Quality Control procedures shall be independent and objective without undue influence of the original examiner or other sources.

C2.4.3. Quality Control Review. All PDD reports, technical documents, and charts shall undergo a QC review to ensure satisfactory tracing quality and correctness of opinion rendered.

C2.4.4. Quality Control Authority. Quality Control should have the authority to direct reexamination.

C2.4.5. 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.

C2.4.6. Quality Control Review Indicated. Each PDD file should indicate that a QC review of the examination has been completed.

## C2.5. PDD APPROVAL PROCEDURES

C2.5.1. 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.

C2.5.2. Accounting Procedures. An accounting procedure for the approval and conduct of specific issue PDD examinations that are requested individually should be established.

C2.5.3. Approval of Personnel Screening Examinations. Personnel screening examinations are authorized by public law, directive, regulation, and agency policy.

### C3. CHAPTER 3

#### QUALITY ASSURANCE PROCEDURES

##### C3.1. SCOPE

This guide establishes the essential elements for quality assurance oversight within the Federal Government.

##### C3.2. BACKGROUND

In order to implement Federal minimum quality assurance standards, Federal PDD program managers and DoDPI developed the QAP.

##### C3.3. 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.

##### C3.4. STANDARDS

Quality Assurance Program inspections will be based upon the standards established in the 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.

##### C3.5. INSPECTION FORMAT

C3.5.1. Inspection Pre-briefing. The QAP will brief agency 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.

C3.5.2. On-site Inspection. Inspections will involve an on-site inspection of agency QC 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.

C3.5.3. 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.

##### C3.6. INSPECTION REPORT

C3.6.1. 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.

C3.6.2. 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.

C3.6.3. 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.

### C3.7. REINSPECTION

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

### C3.S. BIENNIAL INSPECTIONS

The QAP will inspect the PDD program QC procedures of each Federal PDD agency biennially.

### C3.9. 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.

## C4. CHAPTER 4

### EDUCATION GUIDELINES

#### C4.1. INTRODUCTION

C4.1.1. Core Curriculum. This curriculum represents the standards for the education and training of federal Psychophysiological Detection of Deception (PDD) examiners; therefore, federal PDD examiners will receive their initial PDD training at DoDPI.

C4.1.1.1. The PDD Program curriculum will be composed of a core program and clinical laboratory activities.

C4.1.1.2. All PDD students will be required to take the core curriculum described below. The two important aspects of the core curriculum are the traditional classroom work and the clinical laboratory activities during which the student applies the knowledge gained in the classroom.

#### C4.1.2. PDD Program Curriculum Concept

C4.1.2.1. A PDD curriculum will emphasize those enduring educational principles held in common with all institutions of higher learning to produce the highest quality graduate for the government's polygraph programs. The government has a vital need for broadly educated and intellectually equipped examiners to effectively and competently engage PDD processes to resolve complex and important cases for national security and criminal justice. Advancing technologies along with research findings in psychology and physiology have afforded new methods and insights for today's PDD examiner, advances that are reflected in the evolution of the DoDPI curriculum.

C4.1.2.2. Inevitable resource constraints in the years immediately ahead mandate that The United States achieve maximum efficiency regarding investigations and security concerns within all agencies. The PDD Program curriculum will be configured to meet these two converging concerns by providing a superior quality graduate-level education in PDD to ensure competency when utilizing the government's most effective credibility assessment technology.

C4.1.2.3. A PDD curriculum should build on its historical foundation and progress in concert with advancements in forensic psychophysiology, continually evolving and improving to further the missions of the customer agencies.

C4.1.2.4. The PDD Program curriculum shall, when practical, conform to the Standards set by the DoDPI Executive Committee, professional polygraph associations, and the appropriate academic accreditation agency. The DoDPI will continue to pursue accreditation through an accreditation agency recognized by the US Department of Education.

#### C4.1.3. Interdisciplinary Approach to Curriculum

C4.1.3.1. A PDD curriculum will be both multidisciplinary and interdisciplinary. It will contain a core program, a scientific research component, and a clinical aspect.



C4.1.3.2. 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.

C4.1.3.3. The academic program will engage the student in a variety of teaching methodologies including seminars, individual study, research, clinical practica, and group exercises.

C4.1.3.4. Multiple assessment techniques, including written examinations and laboratory performance evaluations, will be employed to evaluate student comprehension and achievement.

## C4.2. PDD CURRICULUM OBJECTIVES

### C4.2.1. Broad Objectives

C4.2.1.1. Produce educated forensic psychophysiologyists who possess in-depth knowledge and experience in PDD to serve as senior military and career civil service special agents. The examiner should be competent to conduct valid examinations and make effective decision and policies regarding PDD applications in a complex, rapidly changing national security environment.

C4.2.1.2. Educate, inform, and influence the national security community, the Scientific community, and the legal community with regard to the science of forensic psychophysiology.

C4.2.1.3. Remain the nation's premier educational and research institution in the area of forensic psychophysiology, with special emphasis on learning resource material acquisition, to remain the nation's foremost repository of knowledge and expertise on the subject.

C4.2.1.4. Develop and retain a nationally prominent faculty which grows in tandem with advanced educational and research systems and adapt the curriculum to reflect an ever-evolving science.

### C4.2.2. Learning Objectives

C4.2.2.1. Understand critical theories, concepts, and principles related to PDD.

C4.2.2.2. Apply these theories, concepts, and principles through the conduct of PDD examinations that address a wide range of issues, both specific and general in nature, regarding criminal, intelligence, counterintelligence (CI), and screening situations.

C4.2.2.3. Analyze physiological data to identify patterns of arousal on which valid inferences of deception, truthfulness, or concealed knowledge can be based.

C4.2.2.4. 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, intelligence, and CI issues.

C4.2.2.5. 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.

C4.2.2.6. 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.

C4.2.2.7. Demonstrate professional-level competency and capability in forensic psychophysiology through technical application, oral presentation, and written communication.

### C4.3. PDD PROGRAM CURRICULUM

Credit Hours for the PDD Program - One semester hour of credit equals at a minimum, 15 classroom hours of lecture, 30 hours of laboratory, or 45 hours of practica.

#### C4.3.1. PDD 501 - Interviewing Techniques

4 Semester Hours - Interviewing skills facilitate and complement the PDD process from the pre-test development of suitable test questions to the post-test discussion of the examination results. Through class lecture and live exercises, this course provides the student examiner with a foundation for building rapport with examinees and preparing them for testing. Dependent on the testing format utilized, students are taught how to encourage self-report of behaviors relevant to the test issues. Students learn to become sensitive to nonverbal cues, tailoring their approach according to individual characteristics, and consider cultural aspects that may pertain to an examinee. Several methods of pre-test and post-test interviews are presented to students who practice them under field-like conditions in mock crime scenarios.

#### C4.3.2. PDD 502 - PDD Analysis

2 Semester Hours - In this course students study the theory of PDD test questions and stimuli and practical aspects of their construction based upon the case investigative analysis. The students are acquainted with the use and purpose of all types of interrogatives utilized in specific issue and expanded CI screening PDD examinations. The various types of relevant questions utilized in specific issue and expanded CI examinations are discussed in detail. The students are acquainted with categories of comparison questions authorized for most major crime specific issue and expanded CI examinations. They will then learn how to formulate the most appropriate comparison questions based upon an examinee's personal history and the tested relevant issue for all DoDPI specific issue PDD formats.

#### C4.3.3. PDD 503 - PDD Analysis II

2 Semester Hours - This course presents the DoDPI Three- and Seven-Position Numerical Evaluation Scoring System. It prepares the student examiner to recognize and evaluate physiological phenomena or diagnostic features in each of the PDD recording channels. The decision rules for various PDD testing formats are presented and the means for rendering a diagnostic opinion are taught. Using the knowledge gained in Physiology #501 and Psychology #50 I, the student examiner gains a greater understanding and appreciation for the interrelationship between physiology, psychology, and PDD.

#### C4.3.4. PDD 504 - PDD Methods

2 Semester Hours - This course provides the student with historical aspects of PDD from the crude methods of detecting deception during the days of the Inquisition to the present. The student examiner is acquainted with early pioneers of PDD who had a tremendous influence in the development of physiological research leading to the development of modern-day sensors and PDD instrumentation. They also become familiar with significant personalities who had an impact on the development of PDD testing formats. Beginning with the early 1900s and leading up to present day, the student is presented with information about significant and high profile cases having a profound effect on modern PDD practices.

The student is exposed to PDD instrumentation ranging from traditional analog instrumentation to proper utilization and operation of present day computerized polygraph systems (hardware) and associated software programs. The student is taught acquaintance test protocols (ACQT); selected intelligence and screening PDD formats (TES, LEPET, and R/I Screening); Specific Issue R/I PDD format procedures and operational methodologies currently being taught at DoDPI.

#### C4.3.5. PDD 505 - PDD Methods II

2 Semester Hours - This course acquaints the student with specific-issue PDD testing formats utilized within the Federal Government. It also introduces the student examiner to types of mental, physical, and pharmacological countermeasures that might be encountered in PDD testing and provides counter-countermeasures an examiner might utilize to neutralize these countermeasures. The course provides insight into the use of interpreters in conducting PDD examinations of an examinee whose primary language capability is something other than what the examiner possesses. Additionally, the relationship is explored between the field examiner and quality control aspects of their work to ensure that adequate standards and controls are maintained.

#### C4.3.6. PDD 506 - PDD Laboratory

4 Semester Hours - Students are introduced to state-of-the-art instrumentation. Hands-on experience with examinees enables students to apply the principles, theory, and methodology gleaned from their studies of PDD to simulated law enforcement and CI scenarios. Students are graded on their ability to utilize, interpret, analyze, and evaluate specific *PDD* methods of investigation.

#### C4.3.7. PDD 507 - Field Familiarization Laboratory

1 Semester Hour - This course familiarizes the student examiner with field applications of *PDD* formats and testing techniques. Under the auspices of a representative from the students' parent organization and with the coordination of DoDPI faculty, student examiners conduct *PDD* examinations and evaluations utilizing their agency's *PDD* formats and procedures.

#### C4.3.8. PHY 501 - Physiology of PDD

4 Semester Hours - This course integrates an in-depth knowledge and understanding of the

major human physiological systems as they pertain to the clinical applications of PDD. Emphasis is placed on the integrated functions of the nervous, cardiovascular, respiratory, and integument systems, with attention given to the skeletal and muscular systems. Special attention is placed on the physiology of the neuron resting and action potentials, synaptic transmission, sensory and motor pathways, brain lateralization, and autonomic nervous system modulation. Cardiovascular and respiratory system dynamics are described with an emphasis on neural integration. Eccrine gland dynamics and its innervations is the focal point of the integument system. The physiological dynamics of this systemic approach to human body function are described with respect to *PDD* assessment.

#### C4.3.9. PSY 501- Psychology of PDD

3 Semester Hours - The psychological theories and processes underlying human behavior and its relationship to *PDD* are examined. Topics include sensation, perception, human learning, memory, cognition, motivation, emotion, stress, personality, psychological disorders, social processes, and social psychology. All topics covered will be developed specifically with respect to their relevance to the *PDD* process. In addition, topics of relevance will be developed in relation to causes and explanations for criminal behavior. Finally, psychological concepts relevant to extraction and retention of information of criminal incidents as perceived by eyewitnesses will be addressed.

#### C4.3.10. RES 501- Research Theories and Issues

1 Semester Hour - This course exposes the student examiner to research theories and issues of *PDD*. Students are acquainted with scientific research terminology and the procedures for conducting laboratory and field *PDD* research. They are provided with information on the relative merits of the different types of PDD research. Through assigned readings and individual research, students are expected to recognize and articulate differences between scientific and unscientific PDD research.

#### C4.3 .11. LAW 501- Legal and Ethical Aspects of PDD

1 Semester Hour - This course is designed to acquaint the student examiner with ethical and legal issues affecting PDD. During the ethics portion, the student is furnished information and practical dilemmas in an effort to acquaint them with situations they may be confronted with in field PDD procedures. The students are also exposed to various readings and may be required to research an ethical issue on a current PDD situation. During the legal aspects of PDD, the students are provided case law on PDD issues and the Federal court systems. Additionally, the student examiner is provided information on the legal and technical applications involved in qualifying as an expert witness for PDD issues that the courts have articulated through their various decisions.

### C4.4. FACULTY

#### C4.4.1. Faculty Composition

C4.4.1.1. Instructor positions will be employed full-time. Adjunct faculty members May be used to augment the full-time faculty.

C4.4.1.2. All instructors will have a minimum of 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.

C4.4.1.3. Instructors in ethics and law, psychology, and physiology will have a doctoral degree in their particular area of instruction or be under the supervision of a faculty member holding that degree.

#### C4.4.2. Faculty Organization

C4.4.2.1. DoDPI will be organized around a core faculty to ensure continuity, stability, and scholarly substance for the curriculum.

C4.4.2.2. With the exception of adjunct faculty members, the Director and/or Chief of Instruction will have direct input into the evaluations of all faculty members.

C4.4.2.3. 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.

C4.4.2.4. 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.

C4.4.2.5. All faculty members will receive 40 hours of formal training in instructional methods prior to being certified as instructors.

#### C4.5. LEARNING RESOURCES

##### C4.5. 1. Library

C4.5. 1.1. The library's collection will be multidisciplinary in nature. It will include publications concerning psychology, physiology, education, criminal justice, CI, espionage, terrorism, polygraph issues, ethics and law.

C4.5.1.2. The collection will contain relevant journals and periodicals to provide the most up-to-date information available on the subject matter taught at the Institute. This includes periodicals published by polygraph professional organizations.

##### C4.5.2. Information Technology

C4.5.2.1. Access to the Internet and electronic access to bibliographic records, book listings, and periodicals relating to PDD will be available to students.

C4.5.2.2. Laboratory instruction will be enhanced by the presence of closed circuit television, pan and tilt cameras, audio and video recording capability and voice communications between the monitoring room and the polygraph suite. DoDPI will possess a minimum of one computerized polygraph instrument for every two students.

C4.5.2.3. Classroom instruction will be supported through the acquisition of Educational technology such as video monitors, computerized slide projectors, electronic blackboards, audio and video recording capability and desktop computers for the students.

#### C4.6. ADMISSION REQUIREMENTS

Student Candidate Requirements:

C4.6. 1. US citizenship.

C4.6.2. At least 25 years of age.

C4.6.3. Earned baccalaureate degree from a regionally accredited four-year college or university.

C4.6.4. At least two years' experience as an investigator with a U.S. Federal Government agency, Department of Defense agency, or local or state law enforcement agency.

C4.6.5. High moral character and sound emotional temperament based on a background investigation.

C4.6.6. Judged suitable for the position after taking a PDD examination to ensure that the candidate fully realizes the impact of such an examination. This examination shall be given before the beginning of the PDD Program.

#### C4.7. FEDERAL POLYGRAPH CONTINUING EDUCATION CERTIFICATION PROGRAM (FPCECP)

C4.7.1. Purpose: Subsequent to the completion of the PDD Program, it is essential that graduates have available a broad variety of continuing education (CE) opportunities. The purpose of the FPCECP is to standardize CE requirements and establish a centralized location for reporting, recording, reviewing, assessing, and certifying CE received by federal PDD examiners.

C4.7.2. Requirement: In accordance with the FPCECP, examiners will earn a minimum of 80 hours of credible education every two years.

## C5. CHAPTER 5

### TEST QUESTION CONSTRUCTION

#### C5.1. SCOPE

This guide establishes essential elements for test question construction for the Federal Government as taught by DoDPI.

#### C5.2. BACKGROUND

A test question is a specifically designed sentence 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 in PDD testing.

#### C5.3. QUESTION TYPES

C5.3.1. 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:

C5.3.1.1. Be clear and concise.

C5.3.1.2. Avoid legal terms when possible.

C5.3.1.3. Be constructed so that they may be answered yes or no.

C5.3.1.4. Not be worded in the form of an accusation or contain an inference that presupposes knowledge or guilt.

C5.3.1.5. In specific issue tests when testing for multiple items or amounts of money, use the phrase, "any of", e.g., "Did you steal any of that money?"

C5.3.1.6. In specific issue tests, only address one issue in each question.

C5.3.1.7. In specific issue tests, only address one incident in each series.

C5.3.2. 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.

C5.3.3. 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:

C5.3.3.1. 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. (See figure C5.F1.)

Figure C5.F1. Sample of an Evidence-Connecting Relevant Question

Do you know where any of that money is now?

C5.3.3.2. Guilty-Knowledge. A guilty-knowledge relevant question is used to determine if the examinee has any knowledge of who committed the incident under investigation. (See figure C5.F2.)

Figure C5.F2. Samples of Guilty-Knowledge Relevant Questions

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

C5.3.3.3. Secondary-Involvement. A secondary-involvement relevant question tests for secondary involvement such as seeing or hearing or focuses on physical acts that support the primary offense. (See figure C5.F3.)

Figure C5.F3. Sample of a Secondary-Involvement Relevant Question

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

C5.3.4. 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 used within the Federal Government.

C5.3.4.1. Probable -Lie Comparison. 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 time, place, or category. The comparison question should use the same action verb or a 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. (See figure C5.F4.)

Figure C5.F4. Sample of a Probable-Lie Comparison Question

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

C5.3.4.2. Directed-Lie Comparison. 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. (See figure C5.F5.)

Figure C5. F5. Sample of a Directed-Lie Comparison Question

Did you ever commit a minor traffic violation?

C5.3.5. Sacrifice Relevant Question. When used, 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. (See figure C5.F6.)

Figure C5.F6. Samples of Sacrifice Relevant Questions

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?

C5.3.6. 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. (See figure C5.F7.)

Figure C5.F7. Samples of Symptomatic Questions

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?

C5.3.7. 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. (See figure C5.F8.)

Figure C5.F8. Samples of Irrelevant Questions

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

C5.3.8. Irrelevant Questions in Relevant/Irrelevant 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. (See figure C5.F9.)

Figure C5.F9. Samples of Irrelevant Questions in Relevant/Irrelevant Formats

<p>Is today Friday?          Are you now in Alabama?          Do you live in MD?</p>
--

C5.3.9. Overall Truth Question. This is an optional question which may be used 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. (See figure C5.F10.)

Figure C5.F10. Samples of Overall Truth Questions

<p>Do you intend to answer truthfully all of the questions on this test?          Have you truthfully answered all of the questions on this test?</p>
---

C5.3.10. Stimulus Question. This question is an optional question which may be used 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.

C5.3.10.1. 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. (See figure C5.F11.)

Figure C5.F11. Samples of a Math Question

<p>Does <math>10 + 9 = 19</math>?          Does <math>7 + 5 = 12</math>?</p>
--

C5.3.10.2. Specific Issue Relevant/Irrelevant Stimulus Question. This question is used to determine the examinee's overall capacity for response. It is used primarily when the examinee exhibits a consistent lack of response. When used 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 used as comparison questions. (See figure C5.F12.)

Figure C5.F12. Sample of a Specific Issue Relevant/Irrelevant Stimulus Question

<p>Were you on that bridge that night?</p>
--

## C6. CHAPTER 6

### TEST DATA ANALYSIS

#### C6.1. SCOPE

C6.1.1. This guide establishes essential elements for test data analysis for the Federal Government as taught by DoDPI.

C6.1.2. The physiological recordings which comprise a PDD examination are addressed in this standard. The respiratory, electrodermal, and cardiovascular are the three currently accepted channels for collecting PDD data.

#### C6.2. BACKGROUND

C6.2.1. Relevant/Irrelevant. 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 DoDPI from USAMPS and were subsequently adopted by agencies of the Federal Government.

C6.2.2. Numerical Test Data Analysis. The numerical evaluation procedure in large part was developed by Cleve Backster. A variation of that procedure was adopted by USAMPS, DoDPI, and subsequently used by agencies of the Federal Government.

#### C6.3. TEST DATA ANALYSIS

C6.3.1. Evaluation Procedures. There are four methods used to analyze PDD test data in the Federal Government: the 3- and 7-position numerical evaluation procedures, global test data analysis, and the rank order scoring system (ROSS). In the 3- and 7-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.

C6.3.2. Numerical Evaluation. The 3- and 7-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 3-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 7-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.

C6.3.3. 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 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.

C6.3.4. Rank Order Scoring System. The method 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 and provides the examiner with a cumulative picture of the consistent, significant, and timely responses on the PDD charts. This method of evaluation is used primarily to evaluate the R/I questioning formats. The Field Rank Order Scoring System, a version of the ROSS adopted in this Handbook, identifies the three most responsive presentations during a series.

C6.3.5. Evaluative Criteria. Only data that is timely with the applied stimulus and free of artifacts and 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. The PDD test data consists of the signal of interest which may contain noise, artifact, recovery, or response. Not all test data is evaluated. When noise, an artifact, or recovery 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.

C6.3.6. Evaluation Criteria for Each Component. Only that physiological criteria taught by DoDPI will be used to evaluate test data.

C6.3.7. Test Data Analysis Opinions. The following 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).

C6.3.7.1. Opinions of DI and NDI are appropriate in a specific issue series.

C6.3.7.2. Opinions of NSR and SR are appropriate in screening examinations.

C6.3.8. 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.

## C7. CHAPTER 7

### ACQUAINTANCE TEST

#### C7.1. SCOPE

This guide establishes essential elements for the conduct of the ACQT for the Federal Government as taught by DoDPI.

#### C7.2. BACKGROUND

C7.2.1. The ACQT, as taught by DoDPI, is a form of the known-solution POT test, and is used to demonstrate the basic concepts of 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.

C7.2.2. 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.

#### C7.3. PRETEST PHASE

C7.3.1. Question Review. During the pretest phase, the fact that an ACQT will be conducted is mentioned. ACQT questions are reviewed prior to the test being conducted.

##### C7.3.2. Questions Used in the ACQT

C7.3.2.1. The Key. This represents the number chosen by the examinee.

C7.3.2.2. Padding Questions. These questions are placed before and after the key number and consist of questions relating to the other numbers on the test.

C7.3.2.3. Preparatory Phrase. This is the first part of the first question of the ACQT, and it is used to focus the examinee's attention to the issue which is being tested. (See figure C7.F1.)

Figure C7. F1. Sample of a Preparatory Phrase

Regarding the number you wrote...

C7.3.2.4. Prefix Phrase. This is the prefix to each of the questions. (See figure C7.F2.)

Figure C7.F2. Sample of a Prefix Phrase

Was it number...

## C7.4. DATA COLLECTION

### C7.4. 1. Question Sequence (See figure C7.F3.)

Figure C2.F3. Sample of an Acquaintance Test Question Sequence

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

C7.4.2. 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.

C7.4.2.1. A visual stimulus is used in the ACQT to insure the examinee knows the sequence of the examination and the location of the selected key.

C7.4.2.2. All questions are worded to elicit a no answer.

## C7.5. TEST DATA ANALYSIS

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

## C8. CHAPTER 8

### ZONE COMPARISON TEST

#### C8.1. SCOPE

This guide establishes essential elements for the conduct of the ZCT for the Federal Government as taught by DoDPI.

#### C8.2. BACKGROUND

The ZCT was designed by Cleve Backster, and a variation of that format was subsequently adopted by USAMPS in 1961. The ZCT as taught by DoDPI has changed little from the original Backster testing format.

#### C8.3. PRETEST PHASE

C8.3.1. Question Review. During the pretest interview, all ZCT questions are reviewed with the examinee prior to the collection of charts. (See figure C8.F1.)

Figure C8. F1. Question Review Sequence

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

#### C8.3.2. Questions Used in the ZCT

C8.3.2.1. 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. (See figure C8.F2.)

Figure C8.F2. Samples of the Primary Relevant Questions in the Zone Comparison Test

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?
--

C8.3.2.2. Secondary Relevant. This question tests the examinee's secondary involvement in or guilty knowledge of the offense under investigation. The secondary relevant question is RIO. Under no circumstance should question RIO be a primary relevant question. (See figure C8.F3.)

Figure C8.F3. Samples of Secondary Relevant Questions

<p>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?</p>
---

C8.3.2.3. Probable-Lie Comparison 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 time, place or category. The comparison questions should use the same action verb or a 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. (See figure C8.F4.)

Figure C8.F4. Sample of a Probable-Lie Comparison Question

<p>Theft issue: Before 1997, did you ever steal anything of value?</p>
--

C8.3.2.4. 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. (See figure C8.F5.)

Figure C8.F5. Sample of a Sacrifice Relevant Question

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

C8.3.2.5. 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. (See figure C8.F6.)

Figure C8.F6. Samples of Irrelevant Questions

<p>Are you now in Alabama?  Are you sometimes called Tom?</p>
---

C8.3.2.6. 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. Responses to symptomatic questions are not scored during the test data analysis phase of a PDD examination. Symptomatic questions are always questions #3 and #8 on the ZCT. (See figure C8.F7.)



Figure C8.F7. Samples of Symptomatic Questions

<p>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?</p>
---

## C8.4. DATA COLLECTION

C8.4.1. 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. (See figure C8.F8.)

Figure C8. F8. Data Collection Question Sequencing

<p>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?</p>
--

C8.4.2. 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.

C8.4.3. Chart Requirements. In most instances, the collection of three charts (three presentations of the relevant questions) is appropriate. A fourth and, if necessary, a fifth chart may be conducted if a conclusive opinion cannot be rendered after the third chart. Under no circumstance will a sixth chart be conducted. The numerical total required for a conclusive opinion remains the same as for a three-chart series. All questions that comprise this format will be presented in each chart collected after the third chart.

C8.4.4. Conduct of an Acquaintance Test. 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.

## C8.5. TEST DATA ANALYSIS

C8.5.1. Numerical Analysis. The two numerical evaluation procedures are referred to as the 3- and 7-position scales.

C8.5.2. 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:

C8.5.2.1. SPOT I: Questions in positions C4 & C6 compared to R5.

C8.5.2.2. SPOT II: Question in position C6 compared to R7.

C8.5.2.3. SPOT III: Question in position C9 compared to RIO.

C8.5.3. 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.

#### C8.5.4. Opinion Rendering Criteria

C8.5.4.1. Deception Indicated. 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.

C8.5.4.2. No Deception Indicated. 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. C8.5.4.3. No Opinion. If it is not DI or NDI, it is NO with the exception of administrative opinions.

## C9. CHAPTER 9

### YOU-PHASE ZONE COMPARISON TEST

#### C9.1. SCOPE

This guide establishes essential elements for the conduct of the You-Phase ZCT, previously known as the bi-zone, for the Federal Government as taught by DoDPI.

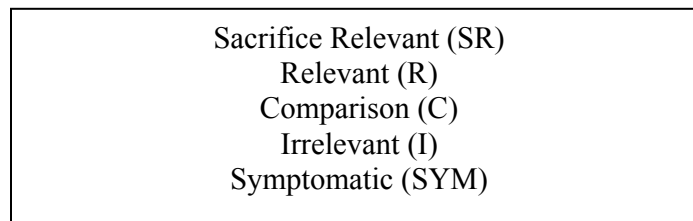
#### C9.2. BACKGROUND

The You-Phase ZCT was designed by Cleve Backster, and a variation of that format was subsequently adopted by USAMPS in 1961. The You-Phase ZCT as taught by DoDPI has changed little from the original Backster testing format.

#### C9.3. PRETEST PHASE

C9.3.I. Question Review. During the pretest interview, all questions are reviewed with the examinee prior to the collection of charts. (See figure C9.F 1.)

Figure C9.F1. Question Review Sequence for the You-Phase Zone Comparison Test



#### C9.3.2. Questions Used in the You-Phase Zone Comparison Test

C9.3.2.1. 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. (See figure C9.F2.)

Figure C9.F2. Samples of Primary Relevant Questions in the You-Phase Zone Comparison Test

<p>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?</p>
--

C9.3.2.2. Probable-Lie Comparison 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 time, place, or category. The comparison question should use the same action verb or a 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. (See figure C9.F3.)

Figure C9.F3. Sample of a Probable-Lie Question

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

C9.3.2.3. Sacrifice Relevant. This is the first question of the You-Phase ZCT 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, for example, "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. (See figure C9.F4.)

Figure C9.F4. Sample of a Sacrifice Relevant Question

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

C9.3.2.4. 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. (See figure C9.F5.)

Figure C9. F5. Samples of Irrelevant Questions

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

C9.3.2.5. 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 responses to the symptomatic question are not scored during the test data analysis phase of a PDD examination. The symptomatic questions are #3 and #9 in the You-Phase ZCT format. (See figure C9.F6.)

Figure C9.F6. Samples of Symptomatic Questions

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?

## C9.4. DATA COLLECTION

### C9.4. 1. Question Sequence (See figure C9.F7.)

Figure C9.F7. Data Collection Sequence for the You-Phase Zone Comparison Test

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?

C9.4.2. Question Rotation. Following the collection of the first You-Phase 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.

C9.4.3. Chart Requirements. In most instances, the collection of three charts (three presentations of the relevant questions) is appropriate. A fourth and, if necessary, a fifth chart may be conducted if a conclusive opinion cannot be rendered after the third chart. Under no circumstance will a sixth chart be conducted. The numerical total required for a conclusive opinion remains the same as for a three-chart series. All questions that comprise this format will be presented in each chart collected after the third chart.

C9.4.4. Conduct of an Acquaintance Test. 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.

## C9.5. TEST DATA ANALYSIS

C9.5.1. Numerical Analysis. The two numerical evaluation procedures are referred to as the 3- and 7-position scales.

C9.5.2. 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:

C9.5.2.1. SPOT I: Questions in positions C4 & C6 compared to R5.

C9.5.2.2. SPOT II: Questions in positions C6 & C8 compared to R7.

C9.5.3. 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.

C9.5.4. Opinion Rendering Criteria.

C9.5.4.1. Deception Indicated. 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.

C9.5.4.2. No Deception Indicated. 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.

C9.5.4.3. No Opinion. If it is not DI or NDI, it is NO with the exception of Administrative opinions.

## CI0. CHAPTER 10

### COMPARISON TEST FORMATS

#### CI0.1. SCOPE

This guide establishes essential elements for the conduct of CTF examinations for the Federal Government as taught by DoDPI.

#### CI0.2. BACKGROUND

The term CTF is an umbrella term which addresses variations of the MGQT. Although the ZCT is also a CTF, the ZCT will be considered separate since research and the 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 used for personnel screening, source validation, and criminal specific PDD testing.

#### CI0.1. PRETEST PHASE

C10.3.1. Question Review Sequence. During the pretest interview, all questions are reviewed with the examinee prior to the collection of charts. (See figure CI0.F1.)

Figure C10.F1. Question Review Sequence for Comparison Test Formats

Sacrifice Relevant (SR) (when applicable) Relevant ( R ) Comparison ( C ) Irrelevant ( I )
---

C101.2. Comparison Test Format Questions. The following question types may be used in CTF applications.

C10.3.2.1. Primary Relevant. This question tests the possible direct involvement of the examinee. (See figure CI0.F2.)

Figure C10.F2. Sample of a Primary Relevant Question

Did you steal that car from that parking lot?
---

C10.3.2.2. 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 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.

C10.3.2.2.1. 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. (See figure C10.F3.)

Figure C10.F3. Sample of an Evidence-Connecting Relevant Question

Do you know where any of that money is now?

C10.3.2.2.2. Guilty-Knowledge. A Guilty-knowledge question is used to determine if the examinee has any knowledge of who committed the incident under investigation. (See figure C10.F4.)

Figure C10.F4. Samples of Guilty-Knowledge Relevant Questions

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

C10.3.2.2.3. Secondary-Involvement. This question tests for secondary Involvement such as seeing or hearing or focuses on physical acts that support the primary offense. (See figure C10.F5.)

Figure C10.F5. Sample of a Secondary-Involvement Relevant Question

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

C10.3.3. Probable-Lie Comparison. 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 time, place, or category. The comparison question should use the same action verb or a similar-in-nature action verb as that of the relevant issue. A PLC question should be broad in scope and time so that it captures as many of the examinee's past-life experiences as possible. (See figure C10.F6.)

Figure C10.F6. Sample of a Probable-Lie Comparison Question

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

C10.3.4. Directed-Lie Comparison. 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. (See figure C10.F7.)



Figure C10.F7. Sample of a Directed-Lie Comparison Question

Did you ever lie to a coworker about anything?

C10.3.5. Sacrifice Relevant. When used, this is the first question that refers to the relevant issue, and it prepares the examinee for the introduction of the relevant questions. (See figure C10.F8.)

Figure C10.F8. Sample of a Sacrifice Relevant Question

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

C10.3.6. Irrelevant. 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. (See figure C10.F9.)

Figure C10.F9. Samples of Irrelevant Questions

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

## C10.4. DATA COLLECTION PHASE

C10.4.1. 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.

C10.4.2. 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 used.

C10.4.3. When a single relevant-question-test is required, the You-Phase ZCT should be used.

C10.4.4. Test Operations. After the first chart, comparison and/or relevant questions should be rotated. At least one of the subsequent charts must involve the rotating of the relevant and/or comparison questions. After the first chart, subsequent charts should be constructed so that the relevant question that had displayed 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.

C10.4.5. Chart Requirements. In most instances, the collection of three charts (three presentations of the relevant questions) is appropriate. A fourth and, if necessary, a fifth chart may be conducted if a conclusive opinion cannot be rendered after the third chart. Under no circumstance will a sixth chart be conducted. The numerical total required for a conclusive opinion remains the same as for a three-chart series. All questions that comprise this format will be presented in each chart collected after the third chart.

C10.4.6. Conduct of an Acquaintance Test. 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.

## C10.5. TEST DATA ANALYSIS

C10.5.1. Numerical Analysis. The two numerical evaluation procedures are referred to as the 3- and 7-position scales.

C10.5.2. Spot Analysis. Relevant questions are grouped together in spots. The examiner monitors and evaluates the examinee's response in these spots.

C10.5.3. 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).

### C10.5.4. Opinion Rendering Criteria.

C10.5.4.1. Deception Indicated. 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 used to render an opinion as is the case in the ZCT.

C10.5.4.2. No Deception Indicated. To render an opinion of non-deception, there must be a plus three (+3) or greater in every overall vertical spot when using the 7-position scale.

C10.5.4.3. No Opinion. 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.

## C11. CHAPTER 11

### PEAK OF TENSION TEST

#### C11.1. SCOPE

This guide establishes essential elements for the conduct of the POT formats for the Federal Government as taught at DoDPI.

#### C11.2. BACKGROUND

The POT was developed by Leonard Keeler to determine possible guilty knowledge possessed by an examinee. It is used most frequently after an examination in which a DI opinion has been rendered. The known-solution POT is used 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 is used 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.

#### C11.3. PRETEST PHASE

C11.3.1. 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. (See figures C11.F 1. and C11.F2.)

Figure C11.F1. Sample of a Peak of Tension Question Sequence

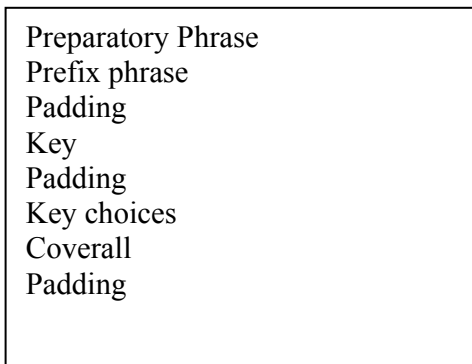
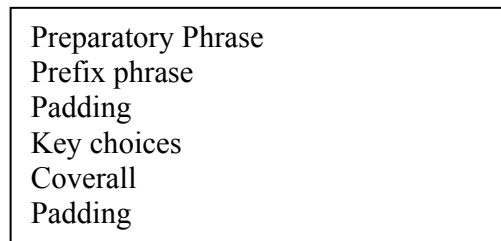


Figure C11.F2. Sample of a Searching Peak of Tension Question Sequence



#### C11.3.2. Questions Used in the POT and SPOT

C11.3.2.1. POT Key. The POT key is a fact about the crime, which should be known only by the perpetrator, the examiner, and the investigators.

C11.3.2.2. SPOT Key Choices. The SPOT key is a fact about the crime known only by the perpetrator.

C11.3.2.3. 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.

C11.3.2.4. 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.

C11.3.2.5. Preparatory Phrase. This is the prefix to the first question of a POT or SPOT. It is used to focus the examinee's attention to the issue which is being tested. It is only stated at the beginning of the first question. (See figure C11.F3.)

Figure C11.F3. Preparatory Phrase for the First Question of a Peak of Tension Test

Regarding the amount of money stolen from that wallet....

C11.3.2.6. Prefix Phrase. This phrase is a continuation of the preparatory phrase. It is asked with each question used 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...?"

C11.3.2.7. Coverall Question. This question is used 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.

#### C11.4. DATA COLLECTION

C11.4.1. Question Sequences (See figures C11.F4. and C11.F5.)

Figure C11.F4.

Preparatory phrase  
Prefix  
Padding question  
Padding question  
Padding question  
Key question  
Padding question  
Padding question

## Sample of a Peak of Tension Question Sequence

<p>Regarding the color of that car, was it...</p> <p>red?</p> <p>blue?</p> <p>green?</p> <p>white?</p> <p>silver?</p> <p>black?</p>
---

Figure C11.F5. Sample of a Searching Peak of Tension Question Sequence

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

C11.4.2. Question Rotation. The SPOT and POT normally consist 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.

C11.4.3. 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.

C11.4.3.1. A visual stimulus is used in the POT to insure the examinee knows the sequence of the examination.

C11.4.3.2. The POT is normally used following a deceptive initial examination.

C11.4.3.3. All questions are worded to elicit a no answer.

C11.4.4. Searching Peak of Tension 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.

C11.4.4.1. A visual stimulus is used in the SPOT to insure the examinee knows the sequence of the examination.

C11.4.4.2. The SPOT is generally used following a deceptive initial examination.

C11.4.4.3. All questions are worded to elicit a no answer.

#### C11.5. TEST DATA ANALYSIS

C11.5.1. 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.

C11.5.2. Opinion Rendering Criteria.

C11.5.2.1. 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.

C11.5.2.2. 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.

C11.5.2.3. For administrative purposes, an opinion of SR indicates guilty knowledge.

## C12. CHAPTER 12

### RELEVANT/IRRELEVANT SCREENING TEST

#### C12.1. SCOPE

This guide establishes essential elements for the conduct of the R/I screening format for the Federal Government as taught by DoDPI.

#### C12.2. BACKGROUND

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

#### C12.3. PRETEST PHASE

C12.3.1. Question Review. During the pretest interview, relevant, irrelevant, and overall truth questions, if used, are reviewed with the examinee. The exact wording of the math question is not reviewed. (See figure CI2.F1.)

Figure C12.F1. Question Review Sequence for the Relevant/Irrelevant Test

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

#### C12.3.2. Relevant/Irrelevant Test Questions

C12.3.2.1. Relevant. 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. (See figure CI2.F2.)

Figure C12.F2. Samples of Relevant Questions

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? Is today Friday?
--

C12.3.2.2. Irrelevant. In R/I formats, the irrelevant question is designed to allow the orienting response to habituate before a relevant question is asked and 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. (See figure CI2.F3.)

Figure C12.F3. Sample of Irrelevant Questions for the Relevant/Irrelevant Test

<p>Is today Friday?          Are you now in Alabama?          Do you live in MD?</p>
--

C12.3.2.3. Overall Truth. This is an optional question, which may be used 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. (See figure C12.F4.)

Figure C12.F4. Samples of Overall Truth Questions for the Relevant/irrelevant Test

<p>Do you intend to answer truthfully all of the questions on this test?          Have you truthfully answered all of the questions on this test?</p>
---

C12.3.2.4. Stimulus Question. This question is an optional question which may be used 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. (See figure C12.F5.)

Figure C12.F5. Samples of Math Questions for the Relevant/Irrelevant Test

<p>Does <math>10 + 9 = 19</math>?          Does <math>7 + 5 = 12</math>?</p>
--

## C12.4. DATA COLLECTION

C12.4.1. Question Sequence. The initial and subsequent question sequence is at the discretion of the examiner. The examiner has the flexibility to use 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. (See figure C12.F6.)

Figure C12.F6. Sample of Initial Question Sequence for the Relevant/Irrelevant Test

<p>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?</p>
--



C12.4.2. 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.

#### C12.4.3. Question Format Procedures.

C12.4.3.1. Acquaintance Test. This test is optional. If an ACQT is conducted it should be conducted as the first chart.

C12.4.3.2. Question Interval. Each chart will normally consist of no more than 12 questions. A question spacing of 20 to 25 seconds from onset of stimulus should be maintained throughout the examination. Irrelevant questions may be inserted as needed.

C12.4.3.3. 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.

C12.4.3.4. 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 using a different testing format or an R/I format with new relevant questions. A phase may be made up of multiple series.

C12.4.3.5. 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.

C12.4.3.6. Clearing Test. The clearing test should be used 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. For an NSR decision, relevant questions asked on the clearing test must be asked a minimum of twice with no artifacts or significant physiological responses. 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.

C12.4.3.7. Askings of Relevant Questions. There must be at least two artifact-free examples of each relevant question in order to be evaluated. Each test should contain 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.

C12.4.3.8. 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.

C12.4.4. Conduct of an Acquaintance Test. 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.

## C12.5. TEST DATA ANALYSIS

C12.5.1. Global Analysis. The evaluation procedure used 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.

### C12.5.2. Opinion Rendering Criteria

C12.5.2.1. Significant Response. The examinee exhibited consistent, timely, significant responses to at least one of the relevant questions.

C12.5.2.2. No Significant Response. The charts revealed that the subject failed to exhibit consistent, timely, and significant responses to the relevant questions.

C12.5.2.3. No Opinion. The examiner cannot render an opinion based upon the physiological responses to the relevant questions.

C12.5.3. Rank Order Scoring System. 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. The 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 R/I questioning formats.

## C13. CHAPTER 13

### SPECIFIC ISSUE RELEVANT/IRRELEVANT TEST

#### C13.1. SCOPE

This guide establishes essential elements for the conduct of the Specific Issue R/I format for the Federal Government as taught by DoDPI.

#### C13.2. 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.

#### C13.3. PRETEST PHASE

C13.3.1. 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. (See figure C13.F1.)

Figure C13.F1. Question Review Sequence for the Specific Issue Relevant/Irrelevant Test

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

#### C13.3.2. Specific Issue Relevant/Irrelevant Questions

C13.3.2.1. Relevant. This question pertains directly to the matter under investigation or to the issue(s) for which the examinee is being tested.

C13.3.2. 1. 1. Primary Relevant. This question tests the possible direct involvement of the examinee. (See figure C13.F2.)

Figure C13.F2. Samples of Primary Relevant Questions

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

C13.3.2.1.2. 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, (See figure C13.F3.)

Figure C13.F3. Samples of Secondary Relevant Questions

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?

C13.3.2.2. Irrelevant. 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. (See figure C13.F4.)

Figure C13.F4. Samples of Irrelevant Questions

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

C13.3.2.3. Overall Truth. This is an optional question which may be used 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. (See figure C13.F5.)

Figure C13.F5. Samples of the Overall Truth Questions

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?

C13.3.2.4. Specific Issue Relevant/Irrelevant Stimulus. This question is used to determine the examinee's overall capacity for response. It is primarily used when the examinee exhibits a consistent lack of response. In the Specific Issue 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 used as comparison questions. (See figure C13.F6.)

Figure C13.F6. Samples of Specific Issue Relevant/Irrelevant Stimulus Questions

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

## C13.4. DATA COLLECTION PHASE

C13.4.1. 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. (See figure C13.F7.)

Figure C13.F7. Sample of a Specific Issue Relevant/Irrelevant Question Sequence

<p>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?</p>
---

C13.4.2. 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.

#### C13.4.3. Test Format Operations

C13.4.3.1. If an ACQT is used, it will be the first chart collected.

C13.4.3.2. No more than three relevant questions will be asked in sequence. Do not repeat any question back-to-back.

C13.4.3.3. The first operational chart begins with at least two irrelevant questions or one irrelevant question and one overall truth question.

C13.4.3.4. The overall truth questions will be asked prior to the first relevant question or after the last relevant has been asked on the chart.

C13.4.3.5. The most responsive relevant question on the previous chart(s) should not be the first relevant question asked on the next chart.

C13.4.3.6. At least three and no more than five relevant questions will be asked during a series.

C13.4.3.7. Only questions addressing elements associated with the issue being tested can be asked. Relevant questions covering different crimes are not permitted.

C13.4.4. Conduct of an Acquaintance Test. 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.

## C13.5. TEST DATA ANALYSIS

C13.5.1. 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, 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.

### C13.5.2. Opinion Rendering Criteria

C13.5.2.1. Deception Indicated. 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.

C13.5.2.2. No Deception Indicated. The charts revealed that the subject failed to exhibit consistent, timely, and significant responses to the relevant questions.

C13.5.2.3. No Opinion. If it is not DI or NDI, it is NO with the exception of administrative opinions.

## C14. CHAPTER 14

### TEST FOR ESPIONAGE AND SABOTAGE

#### C14.1. SCOPE

This guide establishes essential elements for the conduct of the TES question format for the Federal Government as taught by DoDPI.

#### C14.2. BACKGROUND

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

#### C14.3. PRETEST PHASE

C14.3.1. 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. (See figure C14.F1.)

Figure C14. F1. Question Review Sequence for the Test for Espionage and Sabotage

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

#### C14.3.2. Test for Espionage and Sabotage Questions

C14.3.2.1. Relevant. This question pertains directly to the issue(s) being tested. The relevant question tests the possible direct involvement of the examinee.

C14.3.2.2. Directed-Lie Comparison. 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. (See figure C14.F2.)

Figure C14.F2. Directed-Lie Comparison Question for the Test for Espionage and Sabotage

Did you ever commit a minor traffic violation?
--

C14.3.2.3. Sacrifice Relevant. 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. (See figure C14.F3.)

Figure C14.F3. Samples of a Sacrifice Relevant Question for the Test for Espionage and Sabotage

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

C14.3.2.4. 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. (See figure CI4.F4.)

Figure C14.F4. Samples of Irrelevant Questions

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

#### C14.4. DATA COLLECTION

C14.4.1. 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.

C14.4.2. 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. (See figure CI4.F5.)

Figure C14.F5. Question Sequence for Sub-Test A for the Test for Espionage and Sabotage

II Irrelevant  
12 Irrelevant  
SR Sacrifice relevant  
ICI First asking of DLC #1  
IRI First asking of relevant #1  
IR2 First asking of relevant #2  
IC2 First asking of DLC #2  
2RI Second asking of relevant #1  
2R2 Second asking of relevant #2  
2CI Second asking of DLC #1  
3RI Third asking of relevant #1  
3R2 Third asking of relevant #2  
2C2 Second asking of DLC #2

C14.4.3. 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:

C14.4.3.1. 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. Three questions are added after 2C2. (See figure C14.F6.)

Figure C14.F6. Extended Question Sequence for Sub-Test A for the Test for Espionage and Sabotage

11 Irrelevant
12 Irrelevant
SR Sacrifice relevant
ICI First asking of DLC #1
IRI First asking of relevant #1
IR2 First asking of relevant #2
IC2 First asking of DLC #2
2RI Second asking of relevant #1
2R2 Second asking of relevant #2
2C1 Second asking of DLC #1
3RI Third asking of relevant #1
3R2 Third asking of relevant #2
2C2 Second asking of DLC #2
4RI Fourth asking of relevant #1
4R2 Fourth asking of relevant #2
3C1 Third asking of DLC #1

C14.4.3.2. If the examiner does not realize that a fourth asking is necessary until the chart has been collected, a short chart may be collected. (See figure C14.F7.)

Figure C14.F7. Test for Espionage and Sabotage Short Chart

11 Irrelevant
12 Irrelevant
SR Sacrifice relevant
3C1 Third asking of DLC #1
4RI Fourth asking of relevant #1
4R2 Fourth asking of relevant #2
3C2 Third asking of DLC #2

C14.4.3.3. Each sub-test 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.

C14.4.3.4. Any of the sub-tests 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.

C14.4.3.5. When a sub-test (i.e., TESA) results in a decision of NO or SR, a post-test interview will be conducted to determine if there is a reasonable explanation for the responses. If the subsequent sub-test (i.e. TESA2) continues to yield a NO or a SR decision with a reasonable post-test explanation for the responses, additional testing is appropriate. The subsequent sub-tests (i.e. TESA3 and TESA4) are breakdown tests and must be a different format (MGQT, ZCT, etc.) and must contain different relevant questions addressing the NO or SR issue(s).

C14.4.3.6. When a sub-test (i.e. TESA) results in a decision of NO or SR, a post-test interview will be conducted to determine if there is a reasonable explanation for the responses. If the examinee fails to provide a reasonable explanation, a second sub-test (i.e. TESA2) may be conducted. If the second sub-test results in a decision of NO or SR and the examinee fails to provide a reasonable explanation for the responses, additional testing (i.e. TESA3 - the third series of sub-test A) will only be appropriate when the necessity/rationale for that series is clearly elaborated in the polygraph report. A detailed post-test interview will be conducted regarding the relevant issue(s) prior to conducting TESA3. When a third series is accomplished it must be a breakdown test using a different format (MGQT, ZCT, etc.) and different relevant questions.

C14.4.3.7. When the TESA3 sub-test results in a decision of NO or SR and no reasonable explanation is provided, the PDD examiner must elaborate the rationale for additional testing (i.e. beyond TESA3) in the polygraph report. The fourth series will be a specific issue examination on the most responsive relevant question. If the fourth test series results in a NO or SR decision and no significant admissions are obtained all testing is terminated and the results will be reported to the appropriate security personnel outside of the polygraph program. Additional testing is only authorized when polygraph personnel are so directed by agency senior management. The rationale for additional testing will be documented.

C14.4.4. Conduct of an Acquaintance Test. The ACQT will be collected as the first chart of the TES examination. It is conducted in part to acquaint the examinee with PDD procedures. The known-solution ACQT is the only ACQT taught by DoDPI.

## C14.5. TEST DATA ANALYSIS

C14.5.1. Numerical Analysis. Test for Espionage and Sabotage PDD charts are analyzed using the 7-position scale.

C14.5.2. No Split Opinions. An examinee is SR, NSR, or NO to the test not to a question.

C14.5.3. Administrative Opinions. These opinions reflect the results of a series or an examination that are not based upon physiological responses to the applied stimuli, e.g., when the examinee terminates an examination or is practicing countermeasures. In these instances, administrative opinions such as inconclusive, purposeful non-cooperation, etc., are appropriate.

C14.5.4. Spot Analysis. The 7-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. (See figure CI4.F8.)

Figure C14.F8. Spot Analysis for the Test for Espionage and Sabotage

IRI and IR2 compared to ICI or IC2  
 2RI and 2R2 compared to IC2 or 2CI  
 3RI and 3R2 compared to 2CI or 2C2  
 When a fourth asking is required:  
 4RI and 4R2 compared to 2C2 or 3CI  
 When a short test is required:  
 4RI and 4R2 compared to 3CI or 3C2

C14.5.5. 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.

#### C14.6. OPINION RENDERING CRITERIA

C14.6.1. Significant Response. A minus three (-3) or less in any overall vertical spot, or an overall horizontal total score of minus four (-4).

C14.6.2. No Significant Response. At least a plus one (+ 1) at each overall vertical spot and an overall horizontal total score of at least plus four (+4).

C.14.6.3. No Opinion. If it is not SR or NSR, it is NO with the exception of administrative opinions.

## C15. CHAPTER 15

### LAW ENFORCEMENT APPLICANT TESTING

#### C15.1. SCOPE

This guide establishes essential elements for the conduct of law enforcement applicant testing as used by agencies within the Federal Government.

#### C15.2. BACKGROUND

Law enforcement applicant examinations are a specific application of the comparison test format. Law enforcement applicant formats were developed by Federal agencies as the primary personnel screening technique to test applicants for employment in sensitive law enforcement positions. Law enforcement applicant formats address national security, integrity, and suitability Issues.

#### C15.3. PRETEST PHASE

C15.3.1. Question Review Sequence. During the pretest interview, all questions are reviewed with the examinee prior to the collection of charts. (See figure CI5.FI.)

Figure C15. F1. Question Review Sequence for a Law Enforcement Applicant Test

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

C15.3.2. Law Enforcement Applicant Questions. The following question types are generally used in law enforcement applicant testing.

C15.3 .2.1. Relevant. This question pertains directly to the issues being tested. The relevant question tests the possible direct involvement of the examinee. (See figure CI5.F2.)

Figure C15.F2. Samples of Relevant Questions for a Law Enforcement Applicant Test

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

C15.3.2.2. Probable-Lie Comparison. 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 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. (See figure CI5.F3.)

Figure C15.F3. Sample of a Probable-Lie Comparison Question for a Law Enforcement Applicant Test

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

C15.3.2.3. Sacrifice Relevant. This is the first question of the format that refers to the relevant issues. The sacrifice relevant 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. (See figure C15.F4.)

Figure C15.F4. Sample of a Sacrifice Relevant Question

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

C15.3.2.4. 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. (See figure C15.F5.)

Figure C15.F5. Sample of an Irrelevant Question for a Law Enforcement Applicant Test

Are you now in Alabama?

#### C15.4. DATA COLLECTION PHASE

C15.4.1. 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 used.

C15.4.2. Question Sequence. With the possible exception of irrelevant questions, all questions reviewed during the pretest phase of law enforcement applicant 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. (See figure C15.F6. and C15.F7.)

Figure C15.F6. Sample of a Question Sequence for a Law Enforcement Applicant Test National Security Examination

I S R C R C R C R C

Figure C15.F7. Sample of a Question Sequence for a Law Enforcement Applicant Test Integrity and Suitability Examination

I S R C R C R C R C
---------------------

C15.4.3. Data-Collection Phase. After the first chart, relevant and comparison questions may be rotated, or a mixed series may be used. 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.

C15.4.4. Chart Requirements. In most instances, the collection of three charts (three presentations of the relevant questions) is appropriate. A fourth and, if necessary, a fifth chart may be conducted if a conclusive opinion cannot be rendered after the third chart. Under no circumstance will a sixth chart be conducted. The numerical total required for a conclusive opinion remains the same as for a three-chart series. All questions that comprise this format will be presented in each chart collected after the third chart.

C15.4.5. Conduct of Acquaintance Test. 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.

## C15.5. TEST DATA ANALYSIS

C15.5.1. Numerical Analysis. The 7-position scale is normally used to evaluate test data.

C15.5.2. Spot Analysis. Relevant questions are grouped together in spots. The examiner monitors and evaluates the examinee's responses in these spots.

C15.5.3. 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).

C15.5.4. Opinion Rendering Criteria.

C15.5.4.1. Significant Response. 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 used to render an opinion as is the case in the ZCT.

C15.5.4.2. No Significant Response. To render an opinion of NSR, the numerical score must be plus three (+3) or greater in every overall vertical spot when using a 7-position scale.

C15.5.4.3. No Opinion. 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.

C15.5.5. Administrative Opinions. These opinions reflect the results of a series or an examination that are not based upon physiological responses to the applied stimuli, e.g., when the examinee terminates an examination or is practicing countermeasures. In these instances, administrative opinions such as inconclusive, purposeful non-cooperation, etc., are appropriate.

## C16. CHAPTER 16

### COUNTERINTELLIGENCE SCOPE POLYGRAPH TEST

#### C16.1. SCOPE

This guide establishes essential elements for the conduct of CSP tests as used by agencies within the Federal Government.

#### C16.2. BACKGROUND

The CSP was developed in 1981 and implemented in 1982 by the Air Force Office of Special Investigations. Prior to the development of the test for espionage and sabotage, variations of the CSP test were used by many Federal agencies for personnel screening examinations.

#### C16.3. PRETEST PHASE

C16.3.1. Question Review. During the pretest interview, all test questions are reviewed with the examinee prior to the collection of charts. (See figure CI6.F1.)

Figure C16. F1. Question Review Sequence for a Counterintelligence Scope Polygraph

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

#### C16.3.2. Counterintelligence Scope Polygraph Test Questions

C16.3.2.1. Relevant. This question pertains directly to the issues being tested. The relevant question tests the possible direct involvement of the examinee. (See figure CI6.F2.)

Figure C16.F2. Samples of Relevant Questions for a Counterintelligence Scope Polygraph

Have you had any unauthorized foreign contacts? Have you provided classified information to an unauthorized person?
--

C16.3.2.2. Probable-Lie Comparison. 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 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. (See figure CI6.F3.)

Figure C16.F3. Sample of a Probable-Lie Comparison Question

Did you ever say anything about someone that wasn't true?
---



C16.3.2.3. Sacrifice Relevant. This is the first question of the test format that refers to the relevant issue, 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. (See figure C16.F4.)

Figure C16.F4. Sample of a Sacrifice Relevant Question for a Counterintelligence Scope Polygraph

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

C16.3.2.4. 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 issues being tested. Irrelevant questions are not scored. Several irrelevant questions may be reviewed and used as needed. (See figure C16.F5.)

Figure C16.F5. Samples of Irrelevant Questions

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

## C16.4. DATA COLLECTION

C16.4.1. Question Format. 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. However, the exact sequence in which the questions are to be asked in the data collection phase is not revealed. The test format should begin with an irrelevant question. Irrelevant questions may be inserted into each chart as needed. A sacrifice relevant question is always included in the test format. Two to five relevant and two to four comparison questions may be used. If a single relevant-question test is required, the You-Phase ZCT format should normally be used. (See figure C16.F6.)

Figure C16.F6. Data Collection Sequence for a Counterintelligence Scope Polygraph

I Are the lights on?  
SR Regarding the security questions, do you intend to answer each question truthfully?  
C Did you ever lie to a personal friend?  
R Have you had any unauthorized foreign contacts?  
R Have you engaged in espionage against the US?  
C Did you ever take credit for something you did not do?  
R Have you committed sabotage against the US?  
R Have you provided classified information to any unauthorized person?  
C Did you ever cheat in school?  
R Have you ever deliberately damaged any US Government information system?  
C Did you ever violate your own code of ethics?

C16.4.2. Question Rotation. During the second CSP chart, relevant and comparison questions should be asked in a mixed order. The question sequence should be based on a brief global evaluation of the first CSP chart. During the third chart, relevant and comparison questions may be asked in a mixed, reversed, or initial order sequence. These procedures reduce the possibility of response patterns due to the examinee's knowledge of the question sequence.

C16.4.3. Chart Requirements. In most instances, the collection of three charts (three presentations of the relevant questions) is appropriate. A fourth and, if necessary, a fifth chart may be conducted if a conclusive opinion cannot be rendered after the third chart. Under no circumstance will a sixth chart be conducted. The numerical total required for a conclusive opinion remains the same as for a three-chart series. All questions that comprise this format will be presented in each chart collected after the third chart.

C16.4.4. Conduct of Acquaintance Test. Normally, the ACQT should 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.

## C16.5. TEST DATA ANALYSIS

C16.5.1. Numerical Analysis. The 7-position scale is used to evaluate test data.

C16.5.2. Spot Analysis. The 7-position numerical evaluation system analyzes the physiological responses recorded on the chart by comparing the relevant questions to the larger response by component tracing of the adjacent comparison questions.

### C16.5.3. Opinion Rendering Criteria

C16.5.3.1. Significant Response. To render an opinion of SR on the CSP, the score must be minus three (-3) or less in any overall vertical spot. There is no overall horizontal spot total used to render an opinion as is the case in the ZCT.

C16.5.3.2. No Significant Response. To render an opinion of NSR on the CSP, there must be a plus three (+3) or greater in every overall vertical spot.

C16.5.3.3. No Opinion. 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.

C16.5.4. 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.

## C17. CHAPTER 17

### FIELD RANK ORDER SCORING SYSTEM

#### C17.1. SCOPE

The Field Rank Order Scoring System is a form of ROSS that identifies the three most significant responses during a PDD series. This guide describes procedures for the Field Rank Order Scoring System that may be used as an optional procedure to evaluate R/I counterintelligence scope PDD examinations.

#### C17.2. BACKGROUND

The Field Rank Order Scoring System, sometimes referred to as the "High Three," was developed as a supplementary method of evaluating R/I PDD examinations. Its use began prior to the 1970s when the first literature was published regarding rank order analysis of the electrodermal tracing.

#### C17.3. PURPOSE

The purpose of the Field Rank Order Scoring System is to provide decision support to a PDD examiner's global evaluation of R/I test data to supplement an opinion of NSR. The primary method of test data analysis of R/I test data is global evaluation. The Field Rank Order Scoring System provides a secondary method of numerical analysis for the R/I screening test format, but the numbers do not drive the opinion since numerical cut-off scores have not been established. A plan of instruction for the Field Rank Order Scoring System is on file with Instruction Division, DoDPI.

#### C17.4. PROCEDURES

C17.4.1. The pneumograph, electrodermal, and cardiovascular tracings are analyzed separately and given equal emphasis in the decision process.

C17.4.2. The highest three levels of responsiveness to relevant questions are identified in each parameter.

C17.4.3. A value of three (3) is assigned to the relevant question exhibiting the most responsiveness, a value of two (2) is assigned to the next most responsive relevant question, and a value of one (1) is assigned to the third most responsive relevant question.

C17.4.4. Responses that are equal receive the same value.

C17.4.5. Since one or more relevant questions are repeated on a chart during the R/I format, two presentations of the same relevant question may receive a value.

C17.4.6. If only two levels of responsiveness are observed within a parameter, the most responsive presentation will receive a value of three (3) and the next most responsive presentation will receive a value of two (2).

C17.4.7. If no appreciable difference in responsiveness is observed in a particular parameter, that parameter is not scored.

C17.4.8. After all parameters are evaluated, the scores of each relevant question are vertically totaled.

#### CI7.5. SAMPLE OF A COMPLETED SCORE SHEET

C17.5.1. Relevant questions are listed horizontally across the top. The parameters are listed vertically: pneumograph (P), electrodermal (E), and cardiovascular (C). (See figure CI7.FI.)

Figure C17.F1. Sample of a Completed Score Sheet for the Field Rank Order Scoring System

CHART # 1	1	2	3	4	2	4	
P							
E			3		2	1	
C		3		2			
Subtotals		3	3	2	2	1	
CHART # 2	4	1	3	2	1	3	
P			2	3	1		
E	3	3	3		3		
C	3						
Subtotals	6	3	5	3	4		
Question #	1	2	3	4			
Subtotals	7	8	8	9			

C17.5.2. No appreciable difference in responsiveness was observed in the pneumograph parameter, chart #1, and was not scored.

C17.5.3. Only two levels of differential responsiveness were observed in the cardiovascular parameter, chart #1.

C17.5.4. The electrodermal responses, chart #2 were equal to relevant question #4, the first and second presentations of relevant question #1, and the first presentation of relevant question #3.

C17.5.5. On chart #2, only one question, relevant question #4, was deemed responsive in the cardiovascular parameter.

## C18. CHAPTER 18

### COUNTERMEASURES

#### C18.1. SCOPE

This guide establishes essential elements for the federal government where indications of Psychophysiological Detection of Deception (PDD) Countermeasure(s) (CM) are observed. The procedures described are taught at DoDPI.

#### C18.2. BACKGROUND

Reports of CM date to the R/I test use of PDD testing. University research beginning in the 1970s suggested subjects who received detailed information along with personal training in PDD CM could significantly affect the accuracy of the examination process. Prior to the mid-1990s, PDD examiners seldom received CM training and were not equipped to meet the threat.

#### C18.3. PROCEDURES

C18.3.1. Pretest Phase. To assist in conducting a thorough examination, an examiner should elicit information from the examinee during the pretest interview regarding the examinee's knowledge of the polygraph process. This should include any exposure to, knowledge of, and/or PDD advice received, as well as whether the subject has conducted any research or inquiries into PDD procedures. This discussion should be accomplished in a non-accusatory manner consistent with DoDPI instruction. In an effort to deter an examinee from employing CM, it is not appropriate to routinely discuss specific CM during the pretest interview. Such discussion may suggest options to an examinee or create an outside issue.

C18.3.2. Data Collection. When CM are suspected, PDD testing should routinely continue until the testing protocol has been completed. Completion of the test series may allow for sufficient physiological data to identify patterns necessary to establish or refute the employment of CM. If an examination is terminated prior to completion of the protocol due to suspected CM, the examiner should provide technical comments explaining the rationale or circumstances.

C18.3.2.1. If an examiner suspects CM were employed, the examiner may conduct specialized tests (e.g. Yes Test, Concealed Information Test, etc.) designed to confirm the presence of CM. Examiners will not use a countermeasure question (i.e., "Have you done anything to defeat this test?") in a series containing relevant questions pertaining to the original testing issue.

C18.3.2.2. These specialized tests are to be used solely in determining whether CM were employed and must be conducted in accordance with DoDPI curriculum. No conclusion or opinion as to the truthfulness of the original testing issue may be reached based on a CM test series.

#### C18.3.3. Employment of Movement Sensor Device(s) (CMSD).

C18.3.3.1. A MSD is designed to detect covert movements during a PDD examination.

C18.3.3.2. A MSD shall be used in all PDD examinations, when available.

C18.3.3.3. When a MSD is employed, sensitivity settings for the component should allow for optimum tracings.

C18.3.4. Introduction of the MSD. For most specific issue, applicant, and employee screening PDD examinations, a brief introduction of the MSD may be made during the PDD process. Other discussions about the MSD should be completed as necessary.

C18.3.5. MSD Evaluation Procedures. The timing of deliberate manipulations are a consideration (i.e., at comparison questions or at irrelevant questions) when attempting to identify the existence of CM during a PDD examination. The analysis of the frequency and timing of these atypical patterns affords an opportunity to compute probability estimates regarding the likelihood of such patterns having occurred by chance alone, or conversely, to determine whether they are deliberate and tactical.

C18.3.6. MSD Training. Examiners should be trained for the type MSD that is being used. This training should be sufficient to assure the examiner is proficient in the use of the MSD and with interpreting the data collected.

C18.3.7. Opinions.

C18.3.7.1. A significant response or deception indicated decision shall only be made in the presence of CM when there are sufficient uncontaminated data to support such a decision.

C18.3.7.2. A no significant response or no deception indicated decision shall not be made in a test series in the presence of CM.

C18.3.7.3. A no opinion decision may be appropriate when data are contaminated by CM. The continued lack of cooperation by an examinee employing CM may be administratively reported as Purposeful Non-Cooperation (PNC).

#### C18.4. CM TRAINING

All examiners should attend a comprehensive PDD CM course sponsored by DoDPI within two year of graduation from initial PDD training. Thereafter, examiners should attend a minimum of four hours of refresher instruction in CM every two years.

#### C18.5. DODPI REVIEW OF EXAMINATIONS

At each agency's discretion, PDD examinations containing suspected CM may be forwarded to DoDPI for a detailed evaluation.

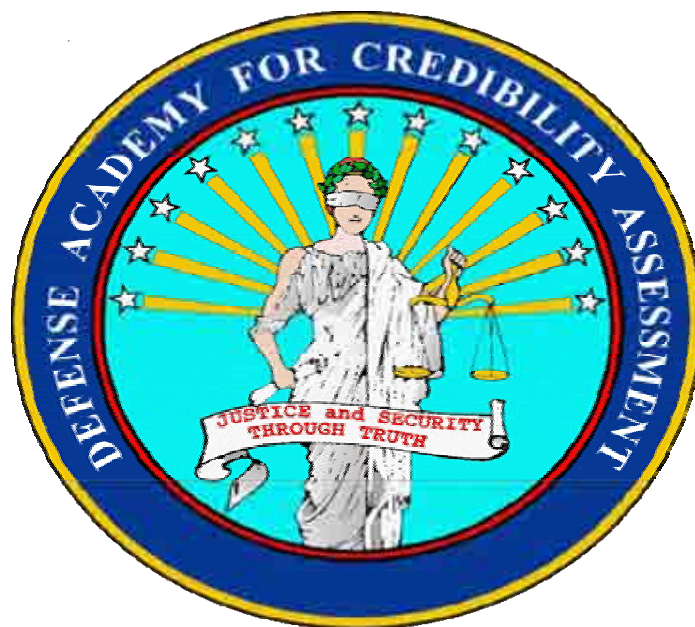
#### C18.6. CM DATABASE

Agencies are encouraged to participate in the DoDPI CM data collection effort and provide DoDPI with all confirmed CM examinations.

#### C18.7. PDD CHART RETENTION

Agencies should retain the test data (charts) and technical reports collected during all PDD examinations.

# PDD 505 METHODS II



## ZONE COMPARISON TEST (ZCT)

January 2009



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1. History. Cleve Backster designed the Zone Comparison Test (ZCT), and variations of Backster's technique were subsequently adopted by USAMPS in 1961. As taught by DACA, the ZCT and You Phase ZCT Psychophysiological Detection of Deception (PDD) formats have changed little from the original Backster techniques.

2. Principles. Both ZCT formats are comparison question techniques designed for single-issue relevant testing. The structured question sequencing and type of questions posed assist in reducing no opinion results.

### 3. Structure and Impact

3.1. The ZCT formats are structured to optimize intensity and distinctness between the relevant and comparison questions. In the ZCT and You Phase ZCT, a relevant question is always asked after a comparison question. The relevant questions (which are limited to a very specific issue) and the exclusive comparison questions create a dichotomy for the examinee. This dichotomy directs the attention of the deceptive/guilty examinee to the relevant questions and the attention of the non-deceptive/innocent examinee to the comparison questions.

3.2. In ZCT formats, a single relevant issue is tested. The ZCT format requires primary and secondary relevant questions. The You Phase ZCT requires only the primary relevant issue--one degree of involvement.

3.3. Other hallmarks of the ZCT formats are the use of the sacrifice relevant and symptomatic questions. Their use and purpose are described below.

3.4. Suspect-Knowledge-You (SKY) questions are optional questions that may be asked on charts two and three of the ZCT; they may not be asked on the You Phase ZCT. The SKY is no longer taught at DACA. The use of these questions is described in Appendix 1.

3.5. All ZCT questions are reviewed during the pretest interview phase; the sequence in which the questions are asked is not revealed to the examinee.

### 4. Concepts

4.1. Psychological Set. The magnitude of physiological responses is a function of the relative salience of the test questions within a test, leading to diminished responding to some questions to which an examinee is deceptive. This phenomenon gives rise to the differential arousal to relevant and comparison questions for deceptive and truthful examinees, and for varying degrees of arousal to different relevant questions to which the examinee is deceptive. The term "psychological set," was first used to explain this effect by Backster in the 1960s, and it was widely adopted by the polygraph profession. It is a useful but incomplete heuristic. "Psychological set" has an established formal meaning in the field of psychology that refers to an unrelated concept.

4.2. Anticlimax Dampening Concept. This theory, also originating from Backster, holds that a person's fear, anxieties, and apprehensions will be directed to that situation which holds the greatest immediate threat to his/her well being or self preservation at that point in time. According to the concept, a guilty examinee's concern over an intense relevant question may result in a full or partial dampening of response to other questions such as less intense relevant questions and/or comparison questions. This concept is based on the principle of psychological set and applies to both the deceptive and non-deceptive examinee.

4.2.1. The deceptive examinee focuses attention on the relevant question(s) which holds the greatest immediate degree of concern for the examinee; the examinee may not be psychologically aroused by the other relevant questions on the examination.

4.2.2. Similarly, the truthful examinee's attention is focused on the comparison question(s) that has the greatest immediate concern and may be less responsive to other comparison question(s) on the examination that he/she perceives as weaker.

4.2.3. This concept explains why an examinee responds significantly more to one particular relevant or comparison question than to others that are presented during a PDD examination and why some relevant questions have significantly higher (minus or positive) numbers assigned.

4.3. Super Dampening. The super dampening concept, also originating from Backster, holds that there will be a suppression of general responding to relevant and comparison questions because of an outside issue that could be more significant to the examinee than the issue examined. The presence of an outside issue usually or generally results in poor or random response, and/or lack of response to relevant and/or comparison questions.

4.4. Spot Analysis. This is another Backster concept. It refers to the procedures wherein each component tracing at each question is separately evaluated by comparing the response of a relevant question to the response of a comparison question. Relevant questions are paired with a specific comparison question(s) for analysis. The relevant and comparison question-pair is a test data analysis (TDA) spot. In the ZCT format there are three TDA spots; and in the You Phase ZCT there are two TDA spots. (See figures F1 and F2.)

Figure F1. ZCT TDA Spots

Spot I	R5 compared to C4 or C6
Spot II	R7 compared to C6
Spot III	R10 compared to C9

Figure F2. You Phase ZCT TDA Spots

Spot I	R5 compared to C4 and/or C6
Spot II	R7 compared to C6 and/or C8

4.5. Numerical Test Data Analysis. Numerical TDA is a systematic evaluation of the ZCT formats (or any comparison question format) in which numeric values are awarded to physiological responses occurring as a result of applied stimuli. The three- and seven-position numerical evaluation procedures are used to evaluate comparison question formats. (See figure F3.) DACA supports the use of the seven-position scale only.

Figure F3. Values for the Three- and Seven-Position Scales

Three-Position Scale	-1	0	+1			
Seven-Position Scale	-3	-2	-1	0	+1	+2 +3

5. Format Requirements and Data Collection

5.1. Question Review. All examination questions are reviewed with the examinee during the pretest interview. Examination questions should be reviewed in the following order: (1) Sacrifice Relevant, (2) Relevant, (3) Comparison, (4) Irrelevant, and (5) Symptomatic questions.

5.2. Question Sequence. With the possible exception of irrelevant questions, all questions reviewed during the pretest phase of the examination are asked during the data collection phase. (See figures F4 and F5.) Appendices 2 and 3 provide examples of ZCT confirmatory and urinalysis PDD examinations.

Figure F4. ZCT Question Sequence

I1	Are you now in South Carolina?	Yes
SR2	Regarding that stolen money, do you intend to answer each question truthfully?	Yes
SYM3	Do you believe I will only ask you the questions we reviewed?	Yes
C4	Prior to 2008, did you ever steal anything from someone who trusted you?	No
R5	Did you steal any of that money?	No
C6	Prior to arriving in South Carolina, did you ever steal anything?	No
R7	Did you steal any of that money from Jones' footlocker?	No
SYM8	Is there something else you are afraid I will ask you a question about?	No
C9	Prior to this year, did you ever steal anything from an employer?	No
R10	Do you know where any of that stolen money is now?	No

Figure F5. You Phase ZCT Question Sequence

I1	Are you now in South Carolina?	Yes
SR2	Regarding that stolen money, do you intend to answer each question	Yes

	truthfully?	
SYM3	Do you believe I will only ask you the questions we reviewed?	Yes
C4	Prior to 2008, did you ever steal anything from someone who trusted you?	No
R5	Did you steal any of that money?	No
C6	Prior to arriving in South Carolina, did you ever steal anything?	No
R7	Did you steal any of that money from Jones' footlocker?	No
C8	Prior to this year, did you ever steal anything from an employer?	No
SYM9	Is there something else you are afraid I will ask you a question about?	No

5.3. Question Rotation. Only comparison questions may be rotated and done so systematically.

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

5.5. Conduct of an Acquaintance Test (ACQT). The known solution ACQT should be collected as the first chart of the ZCT formats. It is conducted in part to acquaint the examinee with PDD procedures.

6. Question Types. In the ZCT format, there are six types of questions posed: (1) Primary relevant, (2) Secondary relevant, (3) Sacrifice relevant, (4) Irrelevant, (5) Symptomatic and (6) Comparison. In the You Phase ZCT format, there are only five types of questions posed; the secondary relevant question is not used. Refer to Appendix 5 for color codes used in ZCT formats.

6.1. Primary Relevant Question. Refer to Appendix 5 for information on relevant question target selection.

6.1.1. The primary relevant questions in a ZCT format are R5 and R7. (See figure F6.)

6.1.2. The purpose of the primary relevant questions is to test for the possible direct involvement of the examinee.

6.1.3. R5 is formed by using an action verb to describe the act/issue.

6.1.4. R7 is formed by using an extension of R5 or by paraphrasing R5.

6.1.5. Both R5 and R7 are usually worded to elicit a no answer.

Figure F6. Examples of Primary Relevant Questions

R5	Did you steal that car?	No
R7	Did you steal that car from that parking lot? (Extension of R5)	No
R7	Are you the one who stole that car from that parking lot? (Paraphrasing of R5)	No

## 6.2. Secondary Relevant Question

6.2.1. The secondary relevant question is R10 in the ZCT format.

6.2.2. The secondary relevant questions generally cover three areas: secondary involvement; evidence connecting; and guilty knowledge, i.e., help, know, plan, participate, and alibi, etc. A secondary relevant question is not used in the You Phase ZCT format.

6.2.2.1. Secondary Involvement. In multiple suspect investigations the #10 relevant question of the ZCT normally addresses secondary involvement areas such as help, plan or participate.

R10 EXAMPLES: Did you help anyone steal any of that money?  
Did you plan with anyone to shoot that man?  
Did you participate (in any way) in stabbing that man?

6.2.2.2. Guilty Knowledge. This #10 relevant question could be used to determine if the examinee has any guilty knowledge of the offense under investigation, such as seeing, hearing, or knowing.

R10 EXAMPLES: Did you see who shot that man?  
Has anyone told you that they....?  
Do you know for sure who shot that man?  
Do you know who stole any of that money?

6.2.2.3. Evidence Connecting. This #10 relevant question is designed to determine if the examinee is aware of the nature or location of various items of evidence and/or physical acts that support the primary issue. In some circumstances secondary involvement or guilty knowledge is not a concern, but if investigative information is available, the examiner should consider these potential question issues.

R10 EXAMPLES: Do you know where any of that stolen money is now?  
Do you know the caliber of the weapon used to shoot that man?  
Did you tear any of that woman's clothing?  
Did you cut the lock off of that door?  
Did you throw a brick through that window?  
Do you know the type of accelerant used to start that fire?

6.2.3. Under no circumstance, should question R10 be a primary relevant question.

6.2.4. The secondary relevant question is usually worded to elicit a no answer.

### 6.3. Sacrifice Relevant Question

6.3.1. The sacrifice relevant question is SR2 in the ZCT formats and is the first question that refers to the relevant issue. The focus of the sacrifice relevant question may be narrower in the You Phase ZCT. (See figures F8 and F9.)

6.3.2. The purpose of the sacrifice relevant question is to absorb initial response to the relevant issue. The sacrifice relevant question is not numerically evaluated.

6.3.3. The sacrifice relevant question should be worded to elicit a yes answer.

Figure F8. Example of a ZCT Sacrifice Relevant Question

SR2	Regarding the theft of that car, do you intend to answer each question truthfully?	Yes
-----	--	-----

FigureF9. Example of a You-Phase ZCT Sacrifice Relevant Question

SR2	Regarding whether or not you stole that Mustang, do you intend to answer each question truthfully?	Yes
-----	--	-----

### 6.4. Irrelevant/Neutral Question

6.4.1. An irrelevant question should be the first question asked on each chart and can be inserted after an artifact occurs or when there is continued response from previous stimuli. Several irrelevant questions may be reviewed and used as needed. Irrelevant questions are labeled I1, I1A, I1B, etc. (See figure F10.)

6.4.2. The purpose of irrelevant questions is to allow the orienting response to habituate before a scorable question is asked and to establish homeostasis when an artifact occurs on the chart. Irrelevant questions are not numerically evaluated.

6.4.3. Irrelevant questions should generally be unrelated to the issue(s) being examined and are normally worded to elicit a yes answer.

Figure F10. Examples of Irrelevant Questions

I1	Is this the month of July?	Yes
I1A	Are you now in South Carolina?	Yes

### 6.5. Symptomatic Questions

6.5.1. There are always two symptomatic questions on any ZCT, SYM3 and SYM8/9. In the standard ZCT, the symptomatic questions are in the third and eighth positions (SYM3 and SYM8). However, in the You Phase ZCT, the symptomatic questions are in the third and ninth positions (SYM3 and SYM9), because there is no secondary issue on the test. (See figure F11).

6.5.2. The purpose of the symptomatic questions is to test for an outside issue. Symptomatic questions are not numerically evaluated.

6.5.3. SYM3 is worded to elicit a yes answer; SYM8/9 is worded to elicit a no answer.

Figure F11. Examples of ZCT Symptomatic Questions

SYM3	Do you believe I will only ask you the questions we reviewed?	Yes
SYM8/9	Is there something else you are afraid I will ask you a question about?	No

## 6.6. Comparison Questions

6.6.1. In the ZCT format, the comparison questions (CQ) are C4, C6, and C9. In the You Phase ZCT format, the comparison questions are C4, C6, and C8. (See figure F12.)

6.6.2. The purpose of comparison questions is to produce a physiological response. The physiological responses of the comparison questions are compared to the physiological responses of the relevant questions.

6.6.3. Probable-lie comparison (PLC) questions are used with ZCT formats. PLC questions should be designed to be a probable lie for the examinee. PLC questions should be similar in nature but unrelated to the specific crime or issue being examined and separated from the relevant issue by time, place, or category. Normally, the PLC 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. PLC questions are formulated and worded to elicit a no answer.

Figure F12. Examples of PLC Questions

C4	Prior to your last birthday, did you ever lie about stealing anything?	No
C6	Before 2008, did you ever steal anything?	No
C8/9	While living in Texas, did you ever steal anything from a close friend?	No

## 7. Test Data Analysis

7.1. Zone Comparison Test. Decision examples. (See figure F13.)

7.1.1. Deception Indicated (DI). To make a determination that the examinee is DI on the ZCT, the score must be a minus three (-3) or lower in any overall vertical spot total or a grand total of minus six (-6) or lower.



7.1.2. No Deception Indicated (NDI). To make a determination of NDI, there must be at least a plus one (+1) or greater in each overall vertical spot total and a combined spot total of plus six (+6) or greater.

7.1.3. No Opinion (NO). If TDA evaluation is not conclusively DI or NDI, it is NO.

Figure F13. Examples of Possible Decisions in the ZCT Format

Example Number	Vertical Total Spot I	Vertical Total Spot II	Vertical Total Spot III	Combined Spot Total	Opinion Rendered
1	+6	0	+6	+12	NO
2	+4 -1		-2 +1		NO
3	-1	+6	+6	+11	NO
4	+2 +2 +2	+6			NDI
5	-2 -2 -2	-6			DI
6	+3 +1 +2	+6			NDI
7	+3	+2 -3 +2			DI
8	+0	0	-3	-3	DI
9	+1 +1 +1	+3			NO

7.2. You Phase Zone Comparison Test. Decision examples. (See figure F14.)

7.2.1. Deception Indicated (DI). To make a determination that the examinee is DI on the You Phase ZCT, the score must be a minus three (-3) or lower in any overall vertical spot total or a grand total of minus four (-4) or lower.

7.2.3. No Deception Indicated (NDI). To make a determination of NDI, there must be at least a plus one (+1) or greater in each overall vertical spot total and a combined spot total of plus four (+4) or greater.

7.2.4. No Opinion (NO). If it is not DI or NDI, it is NO.

Figure F14. Examples of Possible Decisions in the You Phase ZCT

Example Number	Vertical Total Spot I	Vertical Total Spot II	Combined Spot Total	Opinion Rendered
1	+6 0 +6			NO
2	+4 -1 +3			NO
3	+2 +2 +4			NDI
4	-2 -2 -4			DI
5	+3 +1 +4			NDI
6	0	-3	-3	DI
7	+1 +2 +3			NO

## APPENDIX 1. SUSPECT-KNOWLEDGE-YOU (SKY) FORMAT

### 1. Zone Comparison Test Suspect-Knowledge-You Format Requirements and Data Collection

1.1. Question Review. During the pretest, all examination questions are reviewed with the examinee in the following order: (1) Sacrifice Relevant, (2) Relevant, (3) SKY, (4) Comparison, (5) Irrelevant, and (6) Symptomatic questions. (See figure A1.1.) The examinee is told that the SKY questions will be asked during the data collection phase in the same order in which they were reviewed. Chart notations for the “SKY” section of chart are “S11, K12 and Y13.”

Figure A1.1. Question Review Sequence for the ZCT format with SKY Questions

Sacrifice Relevant	SR2
Relevant	R5, R7, R10
SKY	S11, K12, Y13
Comparison	C6, C4, C9
Irrelevant	I1, I1A, I1B, etc.
Symptomatic	SYM8/9, SYM3

1.2. Question Sequence. With the possible exception of irrelevant questions, all questions reviewed during the pretest phase of the examination are asked during the data collection phase. (See figure A1.2.)

Figure A1.2. Example of the ZCT Question Sequence with SKY Questions

I1	Are you now in South Carolina?	Yes
SR2	Regarding the shooting of that man, do you intend to answer each question truthfully?	Yes
SYM3	Do you believe I will only ask you the questions we reviewed?	Yes
C4	Prior to 2008, did you ever hurt anyone who trusted you?	No
R5	Did you shoot that man?	No
C6	Before coming to South Carolina, did you ever hurt anyone?	No
R7	Did you shoot that man in that parking lot?	No
SYM8	Is there something else you are afraid I will ask you a question about?	No
C9	Prior to this year, did you ever desire to hurt anyone out of anger?	No
R10	Do you know for sure who shot that man?	No
S11	Do you suspect anyone in particular of shooting that man?	No
K12	Do you know for sure who shot that man?	No
Y13	Did you shoot that man?	No

1.3. Question Rotation. Same as for the ZCT.

1.4. Chart Requirements.

1.4.1. SKY questions are asked on charts 2 and 3 only.

1.4.2. Prior to collecting Chart I-2, the examinee is told again that questions S11, K12, and Y13 will be asked in that exact order somewhere in the chart.

2. Question Types.

2.1. Same as for the ZCT with the addition of the SKY questions.

2.2. Suspect-Know-You Questions

2.2.1. SKY questions are always S11, K12, and Y13.

2.2.2. Y13 is always identical to question R5.

2.2.3. SKY questions are worded to elicit a no answer.

2.2.4. The action verb in the SKY questions should be the same as in R5.

2.2.5. SKY questions are not scored numerically in the same manner as other spots.

APPENDIX 2. CONFIRMATORY PDD EXAMINATION

A confirmatory examination is a type of examination that may be conducted using several types of PDD testing formats. Based on case facts and circumstances of the confirmatory examination, relevant questions may be constructed to elicit yes or no answers. (See figures A2.1. and A2.2.) A confirmatory examination is never used with the ZCT SKY questions.

Figure A2.1. Example of a Yes-Answered Relevant Question ZCT Confirmatory Examination

I1	Is today Monday?	Yes
SR2	Regarding that \$400.00 you reported stolen, do you intend to answer each question truthfully?	Yes
SYM3	Do you believe I will only ask the questions we reviewed?	Yes
C4	Prior to the year 2008, did you ever lie to anyone in a position of authority?	No
R5	Did you have \$400.00 stolen from your locker?	Yes
C6	Before age 20, did you ever lie about anything (important)?	No
R7	Did you have \$400.00 stolen from your locker last night?	Yes
SYM8	Is there something else you are afraid I will ask you a question about?	No
C9	While living in Texas, did you ever lie to cover up something significant?	No
R10	Did you secure that \$400.00 inside your locker?	Yes

Figure A2.2. Example of a No-Answered Relevant Question ZCT Confirmatory Examination

I1	Is today Monday?	Yes
SR2	Regarding that \$400.00 you reported stolen, do you intend to answer each question truthfully?	Yes
SYM3	Do you believe I will only ask the questions we reviewed?	Yes
C4	Prior to 2008, did you ever lie to anyone in a position of authority?	No
R5	Did you lie about that \$400.00 being stolen from your locker?	No
C6	Before age 20, did you ever lie about anything (important)?	No

R7	Did you lie about that \$400.00 being stolen from your locker last night?	No
SYM8	Is there something else you are afraid I will ask you a question about?	No
C9	Prior to this year, did you ever lie to cover up something significant?	No
R10	Did you lie about securing that \$400.00 in your locker?	No

### APPENDIX 3. URINALYSIS PDD EXAMINATION

In PDD examinations conducted to verify the results of a urinalysis, the only issue may be whether or not the examinee used the illegal substance that tested positive. Because the You Phase ZCT format requires only one degree of involvement for relevant question construction, this format is frequently appropriate for urinalysis PDD examinations. Often, the most appropriate PLCs for urinalysis PDD examinations are lie comparison questions. (See figure A3.1.)

Figure A3.1. Example of a You Phase ZCT for a Urinalysis PDD Examination

I1	Is today Monday?	Yes
SR2	Regarding the use of cocaine, do you intend to answer each question truthfully?	Yes
SYM3	Do you believe I will only ask the questions we reviewed?	Yes
C4	Prior to 2008, did you ever lie to anyone in a position of authority?	No
R5	Within 30 days prior to that urinalysis test, did you (knowingly) use any form of cocaine?	No
C6	Before age 20, did you ever lie about anything (important)?	No
R7	Within 30 days prior to that urinalysis test, did you (knowingly) use any form of cocaine in any manner?	No
C8	Prior to this year, did you ever lie to cover up something significant?	No
SYM9	Is there something else you are afraid I will ask you a question about?	No

## APPENDIX 4. TARGET SELECTION

### 1. Case Evaluation

- 1.1. Evaluate case information and identify relevant targets.
- 1.2. Determine major relevant issues and separate acts (targets).
- 1.3. Determine seriousness of each event issue by legal sanctions.
- 1.4. Assess intensity to examinee.

2. Target Selection. Select the target that most closely connects the examinee to issue being examined in terms of case information and circumstantial evidence, and/or that deals with the motive of the perpetrator. In a housebreaking and larceny for example, theft would be the most appropriate since larceny was probably the motive.

- 2.1. Determine most serious (primary) relevant issue/target.
- 2.2. Assess intensity to examinee.
- 2.3. Choose one issue/target per examination. Do not combine issues/targets in the ZCT.
- 2.4. Formulate secondary issue relevant questions that are within the primary target.
- 2.5. Consider case information and circumstantial evidence when multiple targets are equal in seriousness and intensity.

APPENDIX 5. COLOR CODES

Relevant	Red
Sacrifice relevant	Yellow/Red
Comparison	Green
Irrelevant	Yellow
Symptomatic	Black
Suspect	Green
Knowledge	Red/Yellow
You	Red



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# DEFENSE ACADEMY FOR CREDIBILITY ASSESSMENT



## AIR FORCE MODIFIED GENERAL QUESTION TECHNIQUE (AFMGQT)

**April 2007**

Supersedes all previous editions

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## 1. History

1.1. The Air Force Modified General Question Technique (AFMGQT) is a modified version of the Reid technique developed by John Reid before 1953. In 1966, the U.S. Army adopted the Reid technique and taught it at the polygraph course of the United States Army Military Police School (USAMPS), Fort Gordon, GA.

1.2. In 1968, USAMPS modified Reid's technique and called it the Army MGQT. Incorporated in the Army MGQT were many of the principles utilized in Cleve Backster's Zone Comparison Technique (ZCT, 1960) that was adopted by USAMPS in 1961.

1.3. One major difference between the Reid technique and the 1968 Army MGQT was that Reid did not use numerical evaluation. In addition, comparison questions were not isolated by time or place from the relevant issue and Reid allowed for multiple-issue testing within a single series (crossing targets).

1.4. In later years, both the Air Force and the Navy modified the Army MGQT in various ways and still utilize these testing techniques today. In the mid 1970s, the Air Force modified the Army MGQT by adding a sacrifice relevant, adding more comparison questions and allowing for a two, three or four relevant question test. The modified Air Force version was called the AFMGQT.

## 2. Principles of the AFMGQT

2.1. Comparison Question Technique. Like the Army MGQT, the AFMGQT is a comparison question technique. Depending on the version of the AFMGQT utilized, every relevant question has an adjacent comparison question for evaluation purposes. Except for Version 1 (see paragraphs 5.1.2 and 5.1.3 below) of the three and four relevant question AFMGQT, every relevant question is bracketed by a comparison question for evaluation purposes.

2.2. Test Uniformity. The AFMGQT is a version of the comparison question technique, and its structure is always uniform.

2.3. The AFMGQT allows for minimum and maximum number of relevant questions involving the selected target. As indicated above, the AFMGQT has two, three and four relevant question versions. Depending on available case facts and personal preference, the psychophysiological detection of deception (PDD) examiner may utilize any of these versions in resolving specific issue crimes, assuming that all relevant issues are resolved by the chosen version, i.e., two, three or four relevant question AFMGQT.

## 3. Psychology of the AFMGQT

3.1. As with all comparison question techniques, test questions in the AFMGQT are designed to pose a threat to the examinee, regardless of his or her innocence or guilt, and draw attention

toward specific questions in the test structure.

3.2. In the AFMGQT, all test questions are reviewed with the examinee; however, the exact sequence in which the questions are asked in the data collection phase is not revealed.

3.3. The relevant questions in the AFMGQT structure are designed to pose a threat to the deceptive examinee.

3.4. The comparison questions in the AFMGQT structure are designed to pose a threat to the non-deceptive examinee.

#### 4. AFMGQT Concepts

4.1. Psychological Set. The magnitude of physiological responses is a function of the relative salience of the test questions to the examinee. Differences in salience underlie the differential arousal to relevant and comparison questions for deceptive and truthful examinees, and for varying degrees of arousal to individual relevant questions to which the examinee is deceptive. The deceptive examinee may direct attention to the relevant question(s) that cause the greatest degree of concern. Sometimes, this examinee may not respond as greatly to other relevant question(s) on the test. Likewise, the truthful examinee may attend to the comparison question(s) that evokes the greatest concern. This explains why an examinee may respond significantly more to some, but not all, relevant or comparison questions that are presented during PDD examinations.

4.2. Spot Analysis. This concept refers to the procedure wherein each component tracing is separately evaluated by comparing the response of a relevant question to the response of a comparison question. Relevant questions are paired with a specific comparison question(s) for analysis. The relevant and comparison question-pair is a test data analysis (TDA) spot. Since the AFMGQT has two, three and four relevant question testing formats, the spots are the relevant questions that are compared to adjacent comparison questions (See paragraph 9).

4.3. Numerical Analysis. A system by which a set of numerical values are assigned to differences in response magnitude between pre-established pairings of relevant and comparison questions. The two systems most used in the Federal Government are the:

4.3.1. Seven-Position Scale: **+1 +2 +3 0 -1 -2 -3**

4.3.2. Three-Position Scale: **+1 0 -1**

4.3.3 Typically, the AFMGQT is evaluated using the seven-position numerical analysis scale.

5. AFMGQT Structure and Operations. There are two authorized versions of the AFMGQT. It is the examiner's discretion as to which is chosen in specific-issue testing.

5.1. Version 1 is the original AFMGQT format that was modified from the Army MQGT in the mid 1970s. Version 1 of the AFMGQT has a two, three and four relevant question version as follows:

5.1.1. Version 1, Two Relevant Question Test:

1. Irrelevant
2. Sacrifice Relevant
3. Comparison
4. Secondary Relevant (Usually help, plan, participate, guilty knowledge or Evidence connecting)
5. Comparison (Most encompassing)
6. Primary Relevant (Always primary relevant position)
7. Comparison

5.1.2. Version 1, Three Relevant Question Test:

1. Irrelevant
2. Sacrifice Relevant
3. Comparison
4. Secondary Relevant (Usually help, plan, participate or evidence connecting)
5. Comparison (Most encompassing)
6. Primary Relevant (Always primary relevant position)
7. Comparison
8. Secondary Relevant (Guilty knowledge or evidence connecting)

5.1.3. Version 1, Four Relevant Question Test:

1. Irrelevant
2. Sacrifice Relevant
3. Comparison
4. Secondary Relevant (Usually help, plan, participate or evidence connecting)
5. Comparison (Most encompassing)
6. Primary Relevant (Always primary relevant position)
7. Comparison
8. Secondary Relevant (Typically evidence connecting)
9. Comparison
10. Secondary Relevant (Usually guilty knowledge or evidence connecting)

5.2. Version 2 is a modified version of the original AFMGQT. It was devised as an authorized testing format for counterintelligence security polygraph examinations. It was subsequently utilized in informant testing. It is now an authorized testing format for specific-issue polygraph examinations. The primary difference between versions 1 and 2 is that each relevant question in Version 2 is always bracketed by a comparison question either of which may be used in the evaluation process.

5.2.1. Version 2, Two Relevant Question Test

1. Irrelevant
2. Sacrifice Relevant
3. Comparison
4. Secondary Relevant (Usually help, plan, participate, guilty knowledge or evidence connecting)
5. Primary Relevant (Always primary relevant position)
6. Comparison (Most encompassing comparison)

5.2.2. Version 2, Three Relevant Question Test

1. Irrelevant
2. Sacrifice Relevant
3. Comparison
4. Secondary Relevant (Usually help, plan, participate or evidence connecting)
5. Primary Relevant
6. Comparison (Most encompassing)
7. Secondary Relevant (Usually guilty knowledge or evidence connecting)
8. Comparison

5.2.3. Version 2, Four Relevant Question AFMGQT:

1. Irrelevant
2. Sacrifice Relevant
3. Comparison
4. Secondary Relevant (Usually help, plan, participate or evidence connecting)
5. Primary Relevant
6. Comparison (Most encompassing)
7. Secondary Relevant (Usually evidence connecting)
8. Secondary Relevant (Usually guilty knowledge or evidence connecting)
9. Comparison

5.3. There are always three AFMGQT charts collected. The first AFMGQT chart is collected in straight sequence. The sequence for the questions on the second chart is always changed. At the examiner's discretion, the order of the questions on the third chart may also be changed. As long as the relevant questions are bracketed by comparison questions according to the format, examiners have the option of sequencing the comparison and relevant questions in any manner they choose for charts 2 and 3 for either version of the AFMGQT. For Version 2, when using the three relevant question format, examiners may sequence the relevant questions in a one-two or two-one relevant question sequence in the mixed chart(s). For instance, chart 2 might be sequenced IR, SR, C, R, C, R, R, C and chart 3 may be sequenced IR, SR, C, R, R, C, R, C or vice versa.

5.4. An acquaintance test is always collected as the first chart with the AFMGQT.

5.5. Centering adjustments may be made at appropriate times between any questions. Sensitivity and cardiovascular pressure changes can only be made before the third question is asked on the AFMGQT (first comparison question).



5.6. During the data collection phase, irrelevant questions may be inserted for homeostasis purposes as needed. Additionally, although each version of the AFMGQT has just one specified irrelevant question in the format, examiners may review as many as three irrelevant questions in the pretest interview. By doing this, each chart could begin with a different irrelevant question or the examiner would have additional irrelevant questions to insert for homeostasis purposes. However, this procedure is optional.

## 6. AFMGQT Question Types

6.1. Relevant questions – The following types of relevant questions are used with the AFMGQT.

6.1.1. Sacrifice Relevant Question. The sacrifice relevant question is the first question that refers to the relevant issue. The purpose of the sacrifice relevant question is to absorb initial response (orienting response) to the relevant issue. The sacrifice relevant question is not numerically evaluated and it is worded to elicit a “Yes” answer.

EXAMPLES: Regarding the shooting of that man, do you intend to answer each question truthfully?

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

6.1.2. Primary Relevant Question. This question tests direct involvement. In Version 1 of the AFMGQT, it is always the #6 relevant questions. In Version 2 of the AFMGQT, it is always the #5 relevant questions. In a specific issue examination, there is only one primary relevant question in each AFMGQT series.

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

6.1.3. Secondary Relevant Question(s). These questions test lesser actions of the issue than direct involvement. They include such areas as secondary involvement (help, plan or participate), evidence connecting, or guilty knowledge questions.

6.1.3.1. Secondary Involvement. In multiple suspect investigations, the #4 relevant question of the AFMGQT normally addresses secondary involvement areas such as help, plan or participate.

EXAMPLES: Did you help anyone steal any of that money?  
Did you plan with anyone to shoot that man?  
Did you participate (in any way) in stabbing that man?

6.1.3.2. Evidence Connecting. This question is designed to determine if the examinee is aware of the nature or location of various items of evidence or fruits of the crime. The evidence connecting question is most often used at the #8 position of Version 1, and #7 position of Version 2 of the AFMGQT. In some circumstances secondary involvement or guilty knowledge is not a concern, but if investigative information is available, additional evidence connecting questions may be used at all secondary relevant question positions of the AFMGQT.

EXAMPLES: Do you know where any of that stolen money is now?  
Do you know the caliber of the weapon used to shoot that man?

6.1.3.3. Guilty Knowledge. A question used to determine if the examinee has any knowledge of who committed the crime under investigation. If used, this question is usually the last relevant question presented in the AFMGQT.

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

6.2. Comparison Questions. In Version 1 of the AFMGQT, comparison questions are always in the #3, #5, #7 and #9 positions (depending on two, three or four relevant question format). In the four relevant question of Version 2, the comparison questions are always in the #3, #6 and #9 positions.

6.2.1. Comparison questions are used to compare against the relevant questions.

6.2.2. They are designed for the truthful examinee who should be more concerned (physiologically aroused) about comparison than relevant questions.

6.3. Irrelevant Questions. There is one designated position for an irrelevant question in the AFMGQT; however, irrelevant questions may be inserted at any time for homeostasis purposes. Typically, the examiner will review three irrelevant questions in the pretest interview to insert for homeostasis purposes or to begin each chart with a different irrelevant question. Irrelevant questions:

6.3.1. Are neutral questions.

6.3.2. Are unrelated to the relevant issue.

6.3.3. Are designed to absorb initial response to first test questions on the chart (absorb orienting response.)

6.3.4. Are worded so examinee answers "Yes".

6.3.5. Help to overcome artifacts, are inserted for homeostasis purposes and are used to establish a physiological tracing free of noise.

EXAMPLES: Are the lights on in this room?  
Are you now sitting down?  
Is today \_\_\_\_\_?

7. Formulating Comparison Questions for the AFMGQT.

7.1. Probable lie

7.2. Typically use action verbs that are the same or similar

7.2.1. Steal Relevant > Steal Comparison

7.2.2. Shoot Relevant > Hurt/Harm/Injure Comparison

7.3. Comparison questions are isolated from relevant questions by time, place or category.

7.3.1. TIME: Prior to this year, did you ever steal anything?

7.3.2. PLACE: Prior to arriving in South Carolina, did you ever steal anything?

7.3.3. CATEGORY: Did you ever steal any Government Property? (If issue is theft of private property)

7.3.4. Are broad in time and scope.

7.3.5. Admissions to comparison questions require modification of the question, i.e., "Other than what you told me, before this year, did you ever steal anything?"

8. Formulating Relevant Questions for the AFMGQT

8.1. Must be clear and concise.

8.2. Avoid emotional/legal terms. (i.e., Murder, Rape, Kill).

8.3. Must present a dichotomy - require a "Yes" or "No" answer.

8.4. Should not be worded in the form of an accusation or contain an inference which presupposes knowledge or guilt.

8.5. When testing for multiple items or amounts of money - always use the phrase "Any of".

9. AFMGQT Test Data Analysis.

9.1. In Versions 1 and 2 of the AFMGQT, if a relevant question is bracketed by a comparison question, either comparison question may be evaluated against the relevant question by individual physiological tracings. In the three and four relevant question tests for Version 1 of the AFMGQT, since the last relevant question (#8 or #10) is not bracketed by a comparison question, it is scored against the preceding comparison question only.

9.2. Decision rules for the MGQT use the vertical spot totals only. There is NO overall grand total as used in the ZCT.

9.2.1. NDI: Each overall vertical spot total must be a plus three (+3) or greater.

9.2.2. DI: At least one overall spot total must be minus three (-3) or lower (-4, -5, etc.).

9.2.3. Anything else is No Opinion.

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# PSYCHOPHYSIOLOGICAL DETECTION OF DECEPTION PROGRAM

PSYCHOPHYSIOLOGICAL DETECTION OF DECEPTION  
ANALYSIS II--COURSE #503



## TEST DATA ANALYSIS: DACA Numerical Evaluation Scoring System

**23 August 2006**

All previous editions are obsolete.

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## 1. INTRODUCTION

1.1. This document introduces you to the DACA Numerical Evaluation Scoring System. There are other numerical scoring systems in existence; however, the DACA system is the preferred and standardized system of evaluation used throughout the Federal government.

1.2. The information in this document pertains only to manual numerical evaluation of physiological data. You will learn the diagnostic features and decision rules DACA uses in evaluating physiological waveforms/tracings obtained by the following three polygraph recording sensors: pneumograph (PN), electrodermal (ED), and cardiovascular (CV) sensor.

1.3. The DACA system consists of two numerical evaluation scales; the three- and seven-position scale. Although the three-position scale is more conservative and objective, DACA advocates use of the seven-position scale. The seven-position scale has a tendency to reduce the number of No Opinion decisions by allowing an examiner to assign greater values to each recording channel.

1.4. You will initially be introduced to the three-position scale. When you have acquired the requisite proficiency with its usage, you will transition to learning the seven-position scale. The three-position scale is easier to learn than the seven-position scale because there are fewer scoring rules and the range of potential values to assign is less. Some Federal agencies rely principally on the three-position scale, others rely only on the seven-position scale and yet other agencies use both scales situationally. Consequently, DACA teaches both evaluation scales.

1.5. The three- and seven-position numerical evaluation scales are technique or format dependent and therefore are not applicable to all testing formats used in psychophysiological detection of deception (PDD) (i.e., Peak-of-Tension Test, Relevant/Irrelevant Screening Test). The evaluation of physiological data pertaining to other testing formats that are not dependent on manual numerical scoring are addressed in other publications and other courses of instruction within the DACA Psychophysiological Detection of Deception Program (i.e., PDD 504, Methods I and PDD 505, Methods II).

1.6. It is absolutely critical that you dedicate yourself to mastering test data analysis for peoples' lives may, at times, depend upon it. As you will learn, there may be few lonelier times in an examiner's life than when rendering a decision outcome that is in opposition to the expectation of others. In other words, you are going to routinely make decisions about the veracity of an individual and the decisions you make will, at times, not be what others anticipated.

1.7. There is a direct correlation between the quality and interpretability of the data collected and your ability to defend a decision outcome. You must be able to articulate what decision rules you applied to your analysis and which diagnostic features drove the value you assigned to each analysis spot. Consequently, your data collection goal should be to obtain courtroom quality charts. Irrespective of whether your examination results ever see the light of a courtroom, you need to invest the time to obtain the most interpretable data possible for it will make your data analysis more defensible and will ultimately enable others (i.e., SAC, commander, team leader,

quality control, administrative review boards, etc.) to better understand how you arrived at your decision.

1.8. There is an axiom in PDD and that axiom is as applicable today as when it was first uttered. The axiom is, “Believe in your charts!” A PDD examination under the control of a seasoned and disciplined examiner is a well-orchestrated event from the moment you first greet the examinee until you release him or her. Because examiners systematically approach each examination and consistently apply the respective testing protocol, they gain a calming confidence in the end product. Their data is interpretable, the decision rules are uniformly applied, the diagnostic features are distinguishable and the decision outcome is defensible.

## 2. CONCEPTS AND TERMINOLOGY

2.1. For a valid PDD examination to exist, respiration, ED, and CV activity must be monitored and recorded.

2.1.1. At least one of the two standard respiration sensors must be operational.

2.1.2. A PDD examination is not invalidated solely because one or two of the systems being monitored lacks diagnostic features.

2.2. A PDD examination consists of four phases: pretest, data collection, test data analysis, and posttest. This pamphlet focuses on the pivotal third phase—test data analysis.

2.3. Test data analysis is the systematic process by which a particular set of scoring and decision rules is applied to the evaluation of diagnostic features and other physiological data resulting in one of three outcome decisions.

2.3.1. In specific issue testing the decision outcomes or diagnostic opinions, as they are sometimes called, are: No Deception Indicated (NDI), Deception Indicated (DI), and No Opinion (NO).

2.3.1.1. The Zone Comparison Test (ZCT) and the Air Force Modified General Question Test (AFMGQT) are two testing formats used in specific issue testing.

2.3.2. In pre-employment testing and in other screening applications the diagnostic opinions are: No Significant Response (NSR), Significant Response (SR), and NO.

2.3.2.1. The Law Enforcement Pre-Employment Test (LEPET), Relevant/Irrelevant (R/I) Screening Test, and the Test for Espionage and Sabotage (TES) are techniques and testing formats used in applicant, tenured employee testing, and in other screening contexts.

2.3.3. The three-position numerical evaluation scale permits a range of only one of three values that may be assigned to an analysis spot. The range is: minus one (-1), zero (0), and plus one (+1).

2.3.4. The seven-position numerical evaluation scale permits a range of seven values that may be assigned to an analysis spot. The range is: minus three (-3), minus two (-2), minus one (-1), zero (0), plus one (+1), plus two (+2), and plus three (+3). When using the seven-position scale, a minus three (-3) is considered less than a minus two (-2) and a plus three (+3) is greater than a plus two (+2).

2.3.5. The standard unit of measurement is a vertical chart division, with a grid setting of one-quarter inch, appearing either on a computer screen or paper chart.

2.3.5.1. Changing grid settings from one-quarter inch to some other measurement standard can impact the assignment of weighted values under some very specific conditions (i.e., something-versus-nothing principle).

2.4. There are some very important terms and definitions that you need to become intimately familiar with in order to better understand the concepts and discussion that follows in this text. The remainder of this section is dedicated to an introduction of these terms and concepts. Refer to Appendix H, in the back of this pamphlet, for additional terms and further clarification of terminology.

2.4.1. Analysis Spot. An analysis spot refers to the specific location, or applicable relevant question on a chart where the spot analysis concept is applied.

2.4.1.1. Analysis spots are technique and format dependent. For example, in the traditional ZCT format, there are three analysis spots, which are relevant questions 5, 7, and 10. In Version 2 of the four relevant question AFMGQT format, there are four analysis spots, which are relevant questions 4, 5, 7, and 8. In the TES format, there are three sets of two relevant question pairings or six relevant question analysis spots comprising each Sub-test (i.e., Sub-test A: 1R1-1R2, 2R1-2R2, & 3R1-3R2).

2.4.2. Artifact. An artifact is the cause for a change in the examinee's physiological data that is not attributable to an applied stimulus or recovery (i.e., movement, sensor slippage).

2.4.3. Channel. A channel refers to any one of the four sensor inputs used to monitor and record activity of the respiration, ED, and CV systems. The term channel and component are used interchangeably.

2.4.4. Comparison Question. A question or group of questions that are used for direct comparison against the applicable relevant question(s). The probable-lie and directed-lie are the two types of comparison questions utilized in the Federal government.

2.4.4.1. When using the probable-lie comparison (PLC) technique, comparison questions are similar in nature to the matter under investigation but sufficiently distanced from the relevant issue by time (i.e., Prior to 2005, . . .), place (i.e., Before arriving in the United States, . . .), or category (i.e., Have you ever stolen *private* property?). Comparison questions that attempt to achieve a clear line of demarcation from events surrounding the relevant issue, by using time, place, or category separation are called exclusionary comparison questions.

2.4.4.2. Comparison questions that use the directed lie comparison (DLC) technique, explore minor transgressions that most people will readily admit to having engaged in at sometime in their lifetime. However, these questions traditionally do not seek time, place, or the traditional category separation from the relevant question (i.e., Have you ever said something that you later regretted?).

2.4.5. Comparison Question Technique. Refers to a family of testing formats whereby values are assigned to various analysis spots based upon comparisons between relevant and comparison questions. The two types of comparison questions that are principally used in the Federal government are the PLC question and the DLC question. The ZCT and AFMGQT employ the comparison question technique; however, the formats (structure) are different yet they both use PLC questions. The TES also employs the comparison question technique; however, its format is unique and it uses DLC questions.

2.4.6. Comparison Question Theory. Theory that predicts differential arousal between relevant and comparison question pairings. The theory essentially holds that non-deceptive examinees will meet a predetermined numerical threshold, based upon the technique and format selected, on the positive side of zero. Deceptive examinee's will reach a predetermined numerical threshold on the negative side of zero.

2.4.6.1. When a testing format permits use of multiple comparison questions for evaluation against a relevant question analysis spot (i.e., TES format), utilize the comparison question exhibiting the most significant response. In other words, each question pairing involves an independent analysis, channel-by-channel. It is permissible to use the ED channel from one comparison question and the CV channel from another comparison question for evaluation against a relevant question in the same analysis spot. It is also acceptable to use the upper respiration waveform from one comparison question and the lower respiration from an adjacent comparison question for evaluation against the relevant question in the same analysis spot.

2.4.7. Diagnostic Features. The physiological phenomena used in the numerical evaluation of PDD test data. Examiners use the term feature(s) and criteria/criterion interchangeably.

2.4.8. Homeostasis. Refers to a complex interactive regulatory system by which the body strives to maintain a state of internal equilibrium. Being able to recognize an examinee's homeostatic signature, for each of the recording systems being monitored and recorded, is truly essential to effective test data analysis. Examiners often use the following terms interchangeably with homeostasis: physiological norm, pre-stimulus baseline, resting state, and tonic level.

2.4.9. Latency. Refers to the period of time between stimulus onset and response onset. Any physiological response that begins following stimulus onset is said to display response latency. Response latency, depending upon its consistency, may enable an otherwise untimely response to be evaluated. Pronounced latency may be seen in all recording channels or in just one. An effective method for assessing response latency is to look holistically at all of the physiological data collected, channel-by-channel.

2.4.10. Question String. Refers to all of the questions posed to an examinee between test commencement and test termination.

2.4.11. Relevant Question. A question that pertains directly to the matter under investigation or issue that generated the request for PDD support (i.e., Did you steal any of those missing classified documents?") The serial positioning of the relevant questions, in a question string, defines the applicable analysis spots for the testing format involved. Refer to PDD Course 502, Analysis I, Test Question Construction, for a more comprehensive discussion on question typologies and their use in specific issue PDD testing.

2.4.12. Response Onset Window. Refers to the typical time period, from stimulus onset, where we would predict a physiological response to occur in order for that response to be deemed timely.

2.4.13. Serial Position. Refers to the specific location of a question within a question string.

2.4.14. Spot Analysis. Spot analysis is a fundamental concept for assigning weighted values, by individual recording channel, based upon comparisons between a relevant question and the applicable comparison question(s). The TDA decision rules for a particular testing format, dictate which relevant and comparison question(s) to use for analysis.

2.4.15. Waveform. The term waveform and tracing are used interchangeably and refers to the particular visual representation of the physiological data that is studied for its diagnostic value.

### 3.0. GENERAL EVALUATION CONSIDERATIONS

3.1. The DACA Numerical Evaluation Scoring System utilizes eight primary diagnostic features and four secondary considerations in evaluating physiological data obtained through a polygraph.

3.2. A positive value (i.e., +1) is assigned to an analysis spot if the physiological response is more significant at the applicable comparison question than at the relevant question.

3.3. A negative value (i.e., -1) is assigned to an analysis spot if the physiological response is more significant at the relevant question than at the comparison question(s).

3.4. Zero scores are assigned when there is either no response to either the relevant or applicable comparison question(s) or the difference is indiscernible.

3.4.1. Assign a value of zero with a line through it (0) if any recording channel is unable to be evaluated due to an artifact or other excessive noise.

3.5. There are preliminary steps you should consider before assigning values to particular question pairings or an analysis spot.

3.5.1. One of the most crucial steps in beginning your analysis process is to make a holistic or global assessment of all the physiological data collected. Understanding an examinee's stereotypy is extremely important because examinees often display trends in the physiological data displayed. Look for trends and note deviations from them in order to better perform your data analysis.

3.5.1.1. Consider the following: Some examinees tend to be one-channel dominant. Other examinees present answering artifacts in the PN channel. Some examinees' answering artifacts have a propensity to affect other channels while others do not. Some examinees respond at stimulus onset while others have more pronounced latencies and yet others may prove relatively devoid of response in one or more recording channels. These idiosyncratic characteristics, and many others, impact your data analysis.

3.5.1.2. Determine the examinee's physiological resting state, or homeostasis, for each recording channel. You will get a good sense for this by globally evaluating the data collected on each chart. Ideally, homeostasis should exist in each channel prior to stimulus onset. However, there are exceptions for evaluating each channel even in the event homeostasis was not present at stimulus onset.

3.5.2. Determine if an artifact or excessive noise impacted the evaluation of an analysis spot. The decision rules for the testing technique and format employed will dictate the applicable questions and channels to use for comparison purposes.

3.5.2.1. Excessive noise on a signal of interest is inherently problematic and might be an artifact, lingering response stemming from a previously applied stimulus, recovery, or product of a highly unstable baseline.

3.5.2.2. If an artifact or excessive noise affects each of the recording channels of an analysis spot, do not use that spot for evaluation.

3.5.2.2.1. If the testing format permits use of either of two comparison questions against a relevant question analysis spot (i.e., TES), and one of those two comparison questions is unable to be evaluated, then you must use the other comparison question for evaluation.

3.5.2.3. If an artifact affects two of three recording systems, do not use that analysis spot for evaluation.

3.5.2.4. Particular attention should be made to any artifact that impacts the respiration channel. The respiration channel has a tendency to influence other recording channels. As Holmes et al. (1980) and others (Sroufe, 1971; Leavenson, 1979; Obrist, 1981) have pointed out, alterations in either the depth or rate of breathing is a source of variance in heart rate and heart rate control. Because of this phenomenon, you will hear examiners refer to the PN channel as "the effector."

3.5.2.5. A significant artifact (i.e., an extremely deep breath or extended yawn) affecting the PN channel will almost certainly render other channels non-scoreable.

3.6. Response timeliness is a critical data analysis consideration. There are defined time windows for each recording channel (pronounced latency exceptions exist) in which we would predict an examinee to begin to manifest some physiological response to the question (stimulus) presented. Responses commencing beyond the standard time windows become suspect unless the examinee consistently responds in that manner. This time window is referred to as the response onset window.

3.6.1. The response onset window for each respiration channel, of which there are two, is from stimulus onset to one complete respiration cycle past the examinee's answer.

3.6.2. The response onset window for the ED and CV channel is from stimulus onset to the examinee's answer.

3.7. One of the difficulties during data analysis is determining when a legitimate physiological response begins and when recovery begins. This line of demarcation may be unclear because, at times, there is a transition period that occurs between response and full recovery and you may not know how much residual response existed during the transition to full recovery.

3.7.1. Generally, ED and CV response ends when the waveform either returns to the pre-stimulus level (assuming homeostasis existed) or has sufficiently stabilized at a new tonic level. Respiratory response typically ends when recovery begins to reestablish homeostasis.

3.8. When you have completed your global assessment, identified idiosyncratic trends and deviations from those trends and have a good sense for the authenticity of the data, the decision rules can be applied to the specific testing technique and format you have employed.

3.8.1. To apply the scoring rules for the particular testing technique or format, you must know the decision rules and which diagnostic features to assess within each channel.

3.9. Respiratory Features. There are six diagnostic features used in evaluation of the respiration channel. Five of these features involve some form of suppression or slowing of the respiratory rate. The features are:

3.9.1. Apnea-blocking (suppression)

3.9.2. Decrease in amplitude (suppression)

3.9.3. Progressive decrease in amplitude (suppression)

3.9.4. Decrease in rate

3.9.5. Inhalation/Exhalation (I/E) ratio change



### 3.9.6. Temporary increase in baseline

3.10. Electrodermal Features. There are three diagnostic features used in the evaluation of the ED channel. Two of these features are secondary features that are only considered in certain instances. The features are:

#### 3.10.1. Amplitude

#### 3.10.2. Complex Response (secondary)

#### 3.10.3. Duration (secondary)

3.11. Cardiovascular Features. There are three diagnostic features used in evaluation of the CV channel. One of these is a primary feature and two are secondary diagnostic features.

3.11.1 Phasic response (baseline arousal) is the primary diagnostic feature used in evaluating the CV channel. A phasic response is defined as a short-term change in physiological activity following stimulus presentation. Typically, this response has a relatively rapid onset and may return to the pre-stimulus baseline or establish a new baseline within a period characteristic of the response system.

3.11.2. Duration and decrease in rate are secondary CV waveform diagnostic features considered in certain instances.

## 4.0. RESPIRATORY WAVEFORM

**“Breathing is truly a strange phenomenon of life, caught midway between the conscious and unconscious.”**

Richards, D.W., Jr., 1953

4.1. Anatomy and Physiology. The respiratory system consists of the lungs, the conducting airways, parts of the central nervous system concerned with the control of the muscles of respiration, and the chest wall (Levitzky, 1986).

4.2. The lungs occupy most of the thoracic cavity. They are elastic structures and their elasticity helps with breathing movements (Bevan, 1996). According to Bevan, the main muscles for breathing are the diaphragm and the intercostals muscles. During normal breathing (eupnea) the diaphragm is the more dominate of the two muscles (Bevan, 1996).

4.3. The main functions of the respiratory system are: (1) to obtain oxygen from the environment and to supply it to the cells of the body; and (2) to remove carbon dioxide from the body produced by cellular metabolism (Comroe, 1974). The brain and heart collectively comprise less than 3% of total body weight but account for over 30% of oxygen usage (West, 1985).

4.4. The respiration waveform that is monitored reflects either pulmonary ventilation (which actually facilitates respiration), or the mechanics of a person’s breathing, that is obtained through

the PN sensor of a polygraph. Traditionally, whether viewing a computer screen or a printed PDD chart, the upper two waveforms/tracings are representative of the examinee's breathing.

4.4.1. The respiratory waveform consists of inspiration (taking in of outside air) and expiration (removal of air carrying waste products) cycles which are more commonly referred to as inhalation and exhalation (I&E) cycles. Bevan (1996) states that during inspiration, the diaphragm contracts and becomes flatter than the rib cage. This expansion causes the volume of the thorax to increase causing air to be drawn into the lungs. Expiration occurs passively by the natural elasticity of the lung tissue and is a relatively effortless movement. The intercostal and abdominal muscles can produce more forceful or active expiration.

4.5. Many things impact an examinee's breathing pattern—some may be naturally occurring (i.e., athleticism, age, & disease), while others may be forced (i.e., excessive deep breath). Most people display a resting respiration rate or breathing pattern of between 12 to 18 breaths per minute (Tobin et al, 1988 & J. Reicherter, personal communication, September 6, 2002).

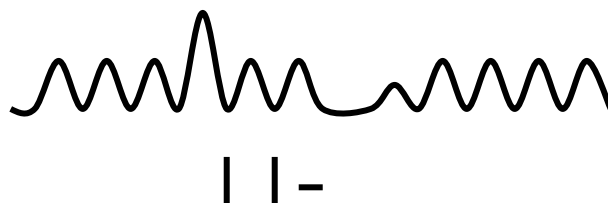
4.6. An examiner is only concerned with within-subject comparisons and not with between-subject comparisons. Use the term normal breathing (eupnea) to refer only to the examinee being tested. Examinees that present a relatively fast respiration pattern (tachypnea) or a very slow respiration pattern (bradypnea) may actually be displaying a true representation of their normal breathing pattern. There are techniques that will be taught to enable you to gauge whether examinees are attempting to thwart the PDD examination process by deliberately manipulating the mechanics of their breathing.

4.6.1. Particular attention should be given to a person's breathing pattern because, of the physiological systems that are currently monitored, it is the respiration system over which an examinee exercises the greatest degree of control (Abrams, 1989).

4.7. Homeostasis Considerations. Ideally, before stimulus onset, the examinee should present a respiration waveform that is in homeostasis. Generally, if homeostasis does not exist at stimulus onset, the applicable spot will not be used for evaluation.

4.7.1. There are occasions where the stimulus is applied prematurely yet the comparative spot may be evaluated. This occurs when the waveform returns to homeostasis during the response onset window with subsequent response or remains in homeostasis beyond the ROW. The following illustration (Figure F.1) depicts an example where evaluation is permitted despite a lack of homeostasis at stimulus onset.

**Figure F.1. Homeostasis Exception**



4.8. During the data collection phase of an examination, the examiner attaches two sensors to the examinee to record and monitor the examinee's respiration system.

4.8.1. Typically, the PN chest assembly consists of a convoluted tube, return mechanism (i.e., spring or rubber band), anti-roll bars, beaded chain or Velcro fastener strips and rubber tubing for connection to the computer sensor box or analog instrument.

4.8.2. Although the two sensors collect data from different parts of the examinee's upper torso, the data they obtain often mirrors each other. However, because some examinees are either predominately thoracic or abdominal breathers and because those two areas of the body are subject to different nerve (i.e., intercostals and phrenic) innervations, we are able to capture any differentiation should it occur by using two sensors.

4.8.2.1. Place one sensor over the examinee's upper chest (thoracic area) and the other over the diaphragm. Be sure you obtain adequate separation between sensor placement.

4.9. Obtain a waveform or tracing amplitude of between one-half inch and one-inch (three-quarter inch is ideal), irrespective of grid setting, prior to going into actual operation.

4.10. Respiration Line Length (RLL). Howard Timm (1982) is credited with advancing the concept of RLL. Respiration line length refers to the linear measurement of a waveform over a specified period of time. It is the primary diagnostic measure used in evaluation of the respiration waveform. DACA adopted the RLL concept with some modifications to the manner in which Timm and others (Kircher et al, 1988 ) employed it. Krapohl (2001) states that the use of RLL reduces reliance on signature and pattern recognition. Moreover, it provides an objective means of evaluation because all respiration waveforms share one commonality—a line length

4.10.1. RLL Features. Five of the six diagnostic features applicable to evaluation of the respiration waveform invoke the RLL evaluation methodology.

4.10.1.1. The five diagnostic features pertaining to RLL are as follows: (1) apnea—blocking (suppression), (2) decrease in amplitude (suppression), (3) progressive decrease in amplitude (suppression), (4) decrease in cyclic rate, and (5) inhalation/exhalation (I/E) ratio change.

4.11. There are provisions to evaluate the respiration channel when none of the RLL diagnostic features are present at either the relevant question analysis spot or applicable comparison question(s). This is where signature recognition and pattern matching become important.

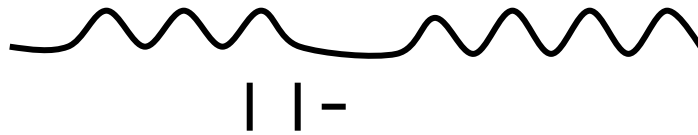
4.11.1. Non-RLL Feature. The one non-RLL feature that research indicates is diagnostic in detection of deception is temporary increase in baseline.

4.12. This section will discuss the six respiration phenomena or diagnostic features used to evaluate PDD data and provide a representative signature of each feature.

4.12.1. Apnea. Refers to a temporary cessation of the respiratory cycle. Some forms of apnea are considered diagnostic of deception while others are not.

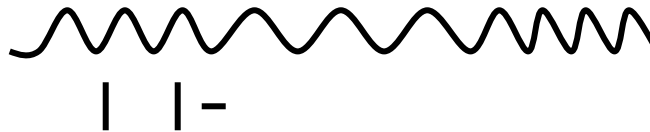
4.12.1.1. If the temporary cessation of breathing (apnea) occurs at or toward the very end of the expiration cycle, it is defined as blocking and is diagnostic of deception (Figure F.2). When apnea occurs at the top of the inspiration cycle, it is not considered diagnostic but is more likely behavioral in origin. Apnea is considered the ultimate manifestation of respiratory suppression.

**Figure F.2. Apnea – Blocking**

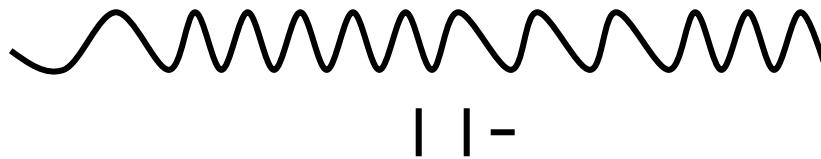


4.12.2. Rate Changes. Diagnostic respiratory rate changes are exhibited in the form of a decrease in cyclic rate relative to an examinee's homeostasis (Figure F.3). This change may also take the form of a change in the inhalation/exhalation (I&E) ratio (Figure F.4, pg 16), where there is a more protracted exhalation cycle than what occurs during homeostasis. Assessing rate changes involves a three-way comparison between what transpired at the relevant question, comparison question(s), and over the course of data collection. This is sometimes referred to as the waveform/tracing average.

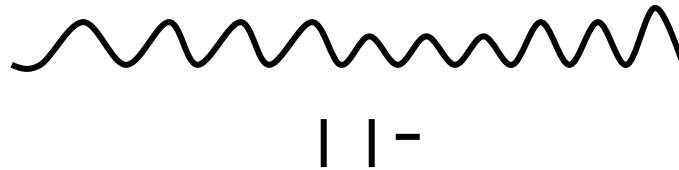
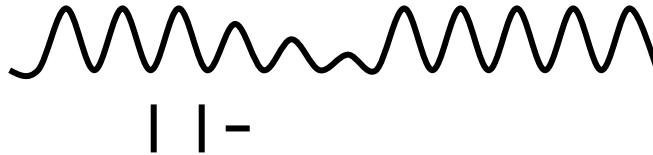
**Figure F.3. Decrease in Cyclic Rate**



**Figure F.4. Change in Inhalation/Exhalation Ratio**

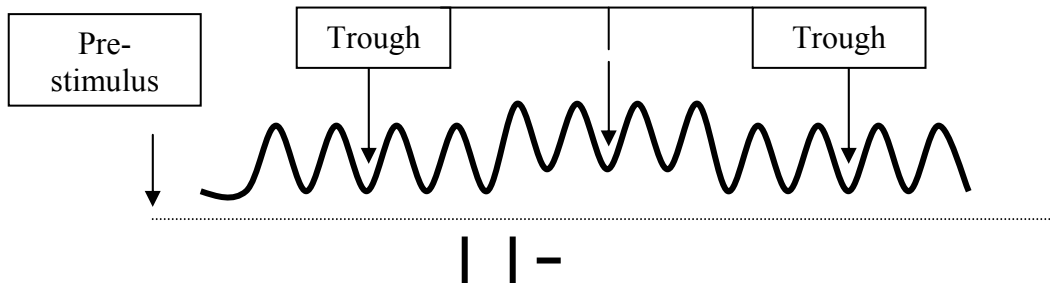


4.12.3. Amplitude Changes. Changes in amplitude may be exhibited in the following forms: (1) decrease in amplitude (suppression) (Figure F.5), or (2) progressive decrease in amplitude (suppression) (Figure F.6). The waveform/tracing average is defined as the average respiratory amplitude for a given chart.

**Figure F.5. Decrease in Amplitude (Suppression)****Figure F.6. Progressive Decrease in Amplitude (Suppression)**

4.12.4. Temporary Baseline Change. Not all baseline changes are diagnostic of deception. For example, a permanent baseline change is not diagnostic of deception and is believed to be more a by-product of behavior (i.e. sensor slippage) than physiology. Also, research has shown that a temporary decrease in baseline is not diagnostic.

4.12.4.1. A temporary increase in baseline (Figure F.7) is considered diagnostic of deception. A temporary increase in baseline is said to occur when the amplitude of the respiration cycle troughs, representing the point of maximum exhalation, temporarily increases relative to the homeostatic or pre-stimulus tonic level.

**Figure F.7. Temporary Increase in Baseline  
(Trough temporarily increases relative to homeostasis)**

4.13. One-Cycle-of-Something-is-Nothing Principle. When assigning values to the respiratory waveform, you typically want to see some response patterning or consistency. Consequently, when you observe only a one-cycle deviation from homeostasis, that deviation is suspect and therefore there is reluctance to assign any value to it.

#### 4.14. Three-Position Numerical Evaluation Scale.

4.14.1. When using the three-position numerical evaluation scale, only one of three values may be assigned to an analysis spot (i.e., -1, 0, +1). If any recording channel or analysis

spot is unable to be evaluated for any reason, assign a value of zero and place a line through the number (Ø).

4.14.2. Employing RLL. Use the RLL evaluation method when an analysis spot or the applicable comparison question(s) exhibits any form of suppression (e.g., decrease in amplitude or apnea-blocking) or decrease in cyclic rate relative to homeostasis.

4.14.3. The following will enable you to employ the RLL scoring methodology:

4.14.3.1. Are any of the RLL features present at the relevant question analysis spot? If the answer is “yes”, RLL applies irrespective of whether the applicable comparison question(s) have a RLL feature or not.

4.14.3.2. Are any of the RLL features present at the applicable comparison question(s)? If an RLL feature appears at either applicable comparison question, use the RLL method irrespective of whether the applicable relevant question analysis spot has an RLL feature or not.

4.14.3.3. If RLL features are present at two of the applicable comparison questions, determine which comparison question has the more significant RLL response duration? The question with the most significant degree of response duration will be used for comparison against the relevant question in that analysis spot.

4.14.3.4. If the relevant question and comparison question in an analysis each have an RLL feature, determine which has the most significant response duration? The question exhibiting the most significant response duration shall serve as the default time window. That default time window is measured from response onset to response end.

4.14.3.4.1. The default time window, once determined, defines or becomes what is called the window-of-evaluation.

4.14.3.4.2. Unlike Kircher et al (1988) and Timm (1982), who always used a set time window beginning at stimulus onset and extending out for 10 or 15 seconds respectively, DACA uses response onset as the point where the window-of-evaluation begins and extends the window to the point where response ends. The DACA method offers advantages over other methods because it better considers individual response differences than do fixed-window methods.



4.14.3.4.3. If a relevant question spot has 10 seconds of response apnea-blocking and the applicable comparison question has six seconds of decrease in amplitude (suppression), the relevant question spot defines the default time window and that 10-second period serves as the window-of-evaluation for the relevant and comparison question.

4.14.3.4.4. Recognize that even though both windows of evaluation contain 10 seconds of data, one window will contain a waveform comprising only response while the other

may contain response, recovery, and perhaps some respiratory cycles reflective of homeostasis. For example, refer to Figure 9 below and the explanation immediately preceding it.

4.14.3.4.5. During the comparative process, the data within each of the respective windows of evaluation, is visually transposed to a linear line length. For example, the respiration waveform depicted in Figure F.8 below is reduced to the line length depicted on the right for evaluation purposes.

**Figure F.8. Waveform Transposed**

This waveform  approximates this line length 

4.14.3.4.6. The shorter line length, be it at the relevant or comparison question, signifies the more intense or significant response and therefore is assigned the value.

4.14.3.4.7. The comparative question tracing having the shorter line length is assigned a value of either minus one (-1) or plus one (+1). If the line lengths are similar or no appreciable difference exists between them, assign a value of zero.

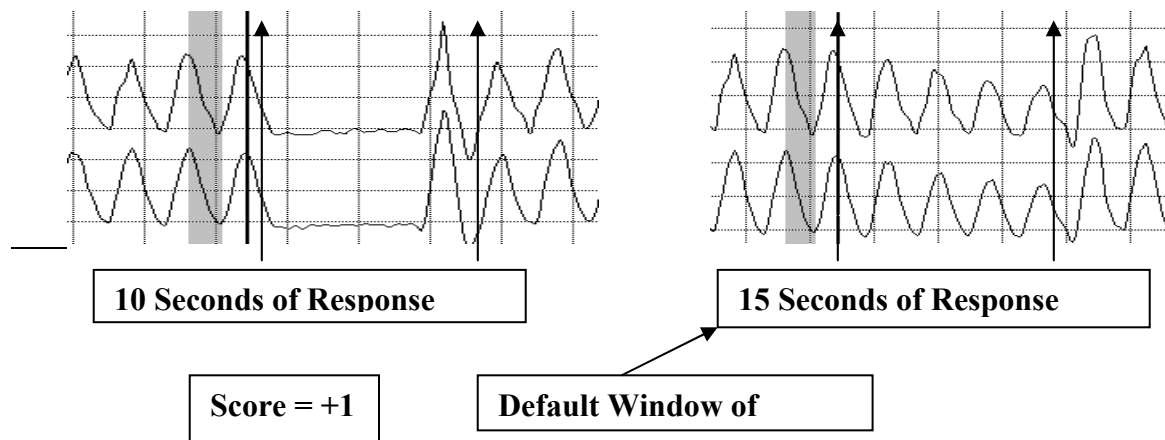
4.15. The following examples (pgs 19-23) illustrate proper implementation and evaluation of the respiratory waveform using RLL. The waveforms to the reader's left reflect a comparison question while the comparative waveform on the reader's right depicts the relevant question. For reader ease in determining response duration, polygraph chart grid lines have been included in all of the examples.

4.15.1. In the first example (Figure F.9, pg 19), RLL applies because the comparison question (on the left) displays one of the five RLL features—apnea-blocking. The relevant question response on the right depicts another RLL feature – progressive decrease in amplitude. The comparison question response is 10 seconds in duration, while the relevant question response is 15 seconds in duration. Since the relevant question has 15 seconds of response duration, it establishes the default window of evaluation. When employing RLL evaluation procedures, both comparative responses must have equivalent windows of evaluation. Accordingly, during the evaluation process, both comparative responses must include 15 seconds of data (arrows represent equivalent windows of evaluation). As such, one of the comparative responses may include recovery or homeostasis data within its equivalent window of evaluation. In the analysis process, the comparison question is assigned a value of plus one (+1). The comparison question line length within the 15 second window-of-evaluation is shorter (even though it includes a recovery cycle) than the line length within the 15 second relevant question window.

**Figure F.9. Respiration Question Pairing #1**

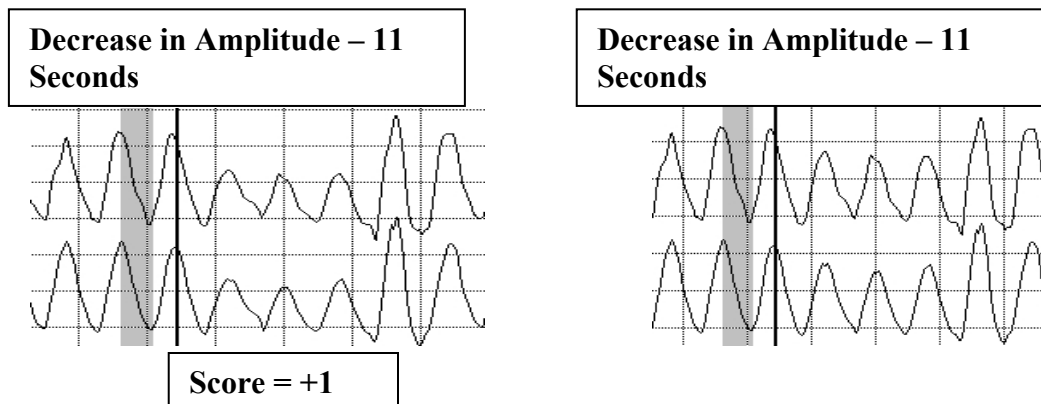
**Apnea-Blocking**

**Progressive Decrease in**



4.15.2 In the next example (Figure F.10), RLL applies because both comparative questions display one of the five RLL features—decrease in amplitude (suppression). Also, both comparative questions exhibit approximately 11 seconds of response duration. As such, the default window of evaluation becomes 11 seconds. A value of plus one (+1) is assigned because the line length of the waveform for the comparison question is shorter than the line length of the waveform at the relevant question. Note that while both questions have a decrease in amplitude response, the amplitude in the comparison question response is smaller. Therefore, it has to have a shorter line length than the relevant question.

**Figure F.10. Respiration Question Pairing #2**

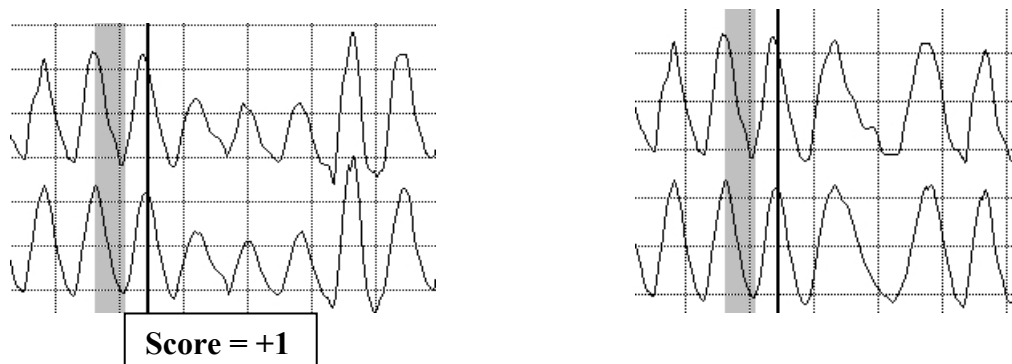


4.15.3. In Figure F.11 (pg 20), RLL applies because both comparative questions display RLL features. The comparison question has 11 seconds of decrease in amplitude and the relevant question has 11 seconds of decrease in rate. Because the data within the comparison question window, when visually transposed into a straight line, results in a shorter line length than the data contained in the relevant question window, it is assigned a value of plus one (+1).

**Figure F.11. Respiration Question Pairing #3**

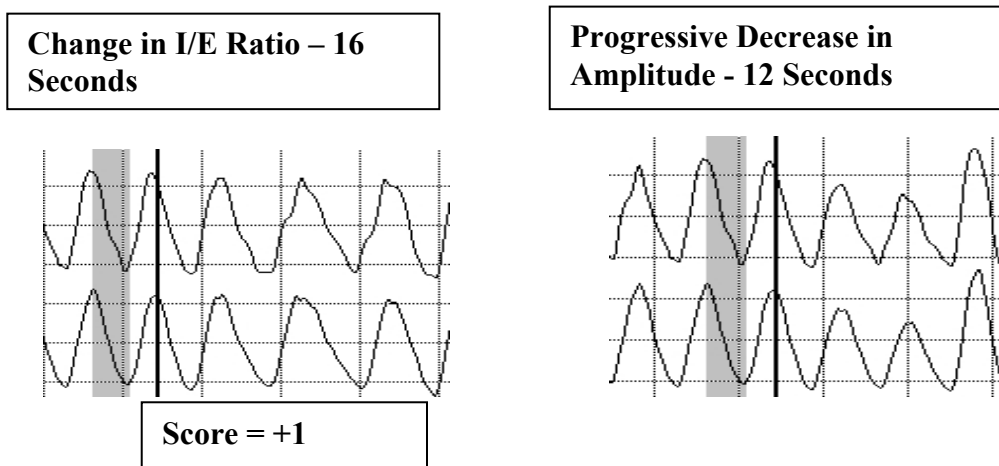






4.15.4. In the next example (Figure F.12), RLL applies because both comparative questions display RLL features. The comparison question has 16 seconds of change in I/E ratio and the relevant question has 12 seconds of progressive decrease in amplitude. In the analysis process, the relevant question would include a complete cycle of recovery within its 16 second window of evaluation. As such, when visually transposed into a straight line, the comparison question results in a shorter line length for a value of plus one (+1).

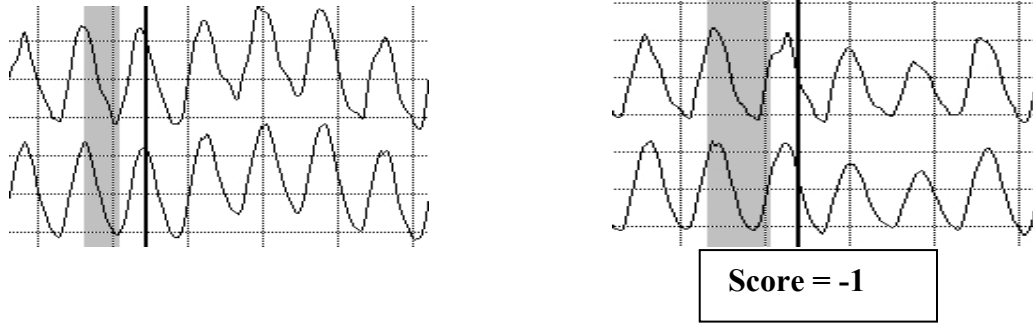
**Figure F.12. Respiration Question Pairing #4**



4.15.5. In Figure F.13 (pg 21), RLL applies because the one of the comparative questions displays an RLL feature. The relevant question has a progressive decrease in amplitude response. The comparison question has a non-RLL response, temporary increase in baseline. Since the analysis spot has a non-RLL feature and an RLL feature, the relevant question would get a value of minus 1 (-1) since it is an RLL feature.

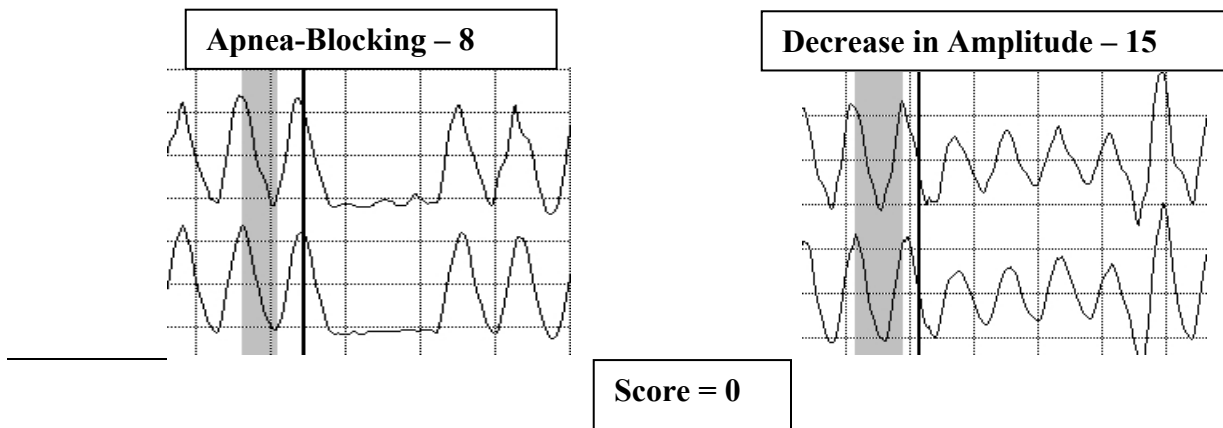
**Figure F.13. Respiration Question Pairing #5**





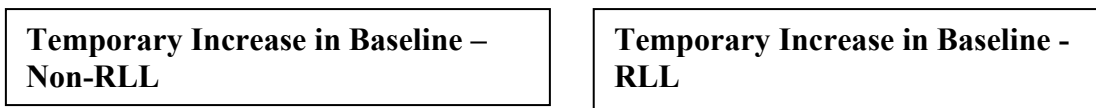
4.15.6. In the next example (Figure F.14), RLL applies because both of the comparative questions display RLL features. During the analysis process, there may be some instances where it is difficult to determine which RLL response has a shorter line length. In those situations, it would be feasible to assign a value of zero (0).

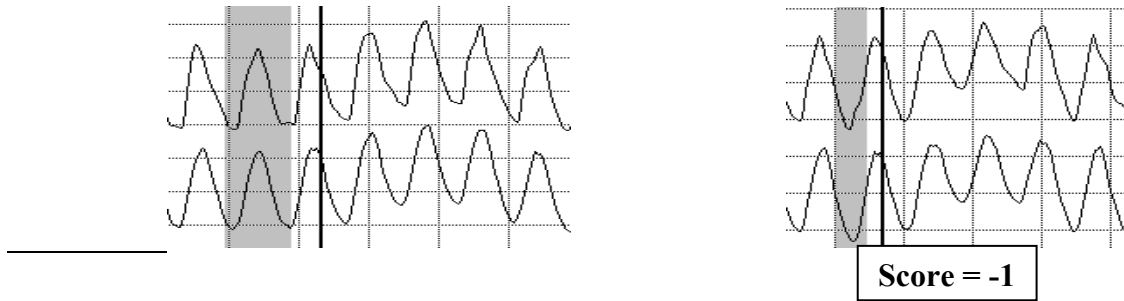
**Figure F.14. Respiration Question Pairing #6**



4.15.7. In Figure F.15, (pg 22), RLL applies because one of the comparative questions displays an RLL feature. Although we typically think of a temporary increase in baseline as a non-RLL response, if this response displays a decrease in amplitude as indicated in the example below, it becomes an RLL response. Since the relevant question response is RLL, during the evaluation process, it would receive a value of minus one (-1).

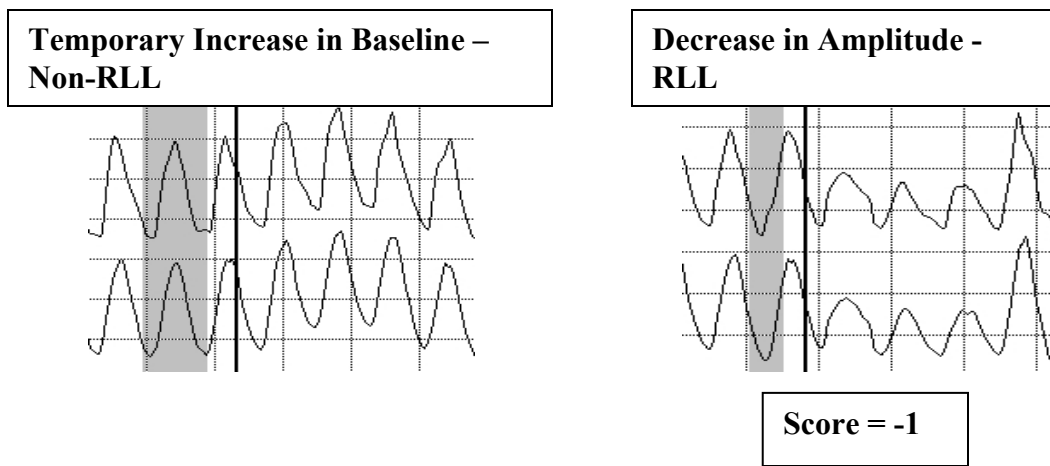
**Figure F.15. Respiration Question Pairing #7**





4.15.8. In the next example (Figure F.16), RLL applies because one of the comparative questions displays an RLL feature. The comparison question has a temporary increase in baseline response which is non-RLL; however, the relevant question displays a decrease in amplitude response. Since the relevant question response is RLL, during the evaluation process, it would receive a value of minus one (-1).

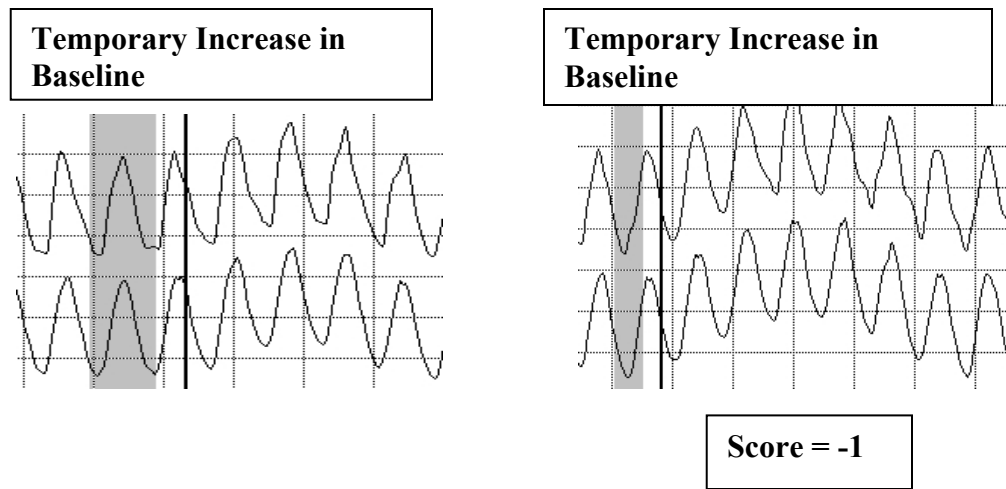
**Figure F.16. Respiration Question Pairing #8**



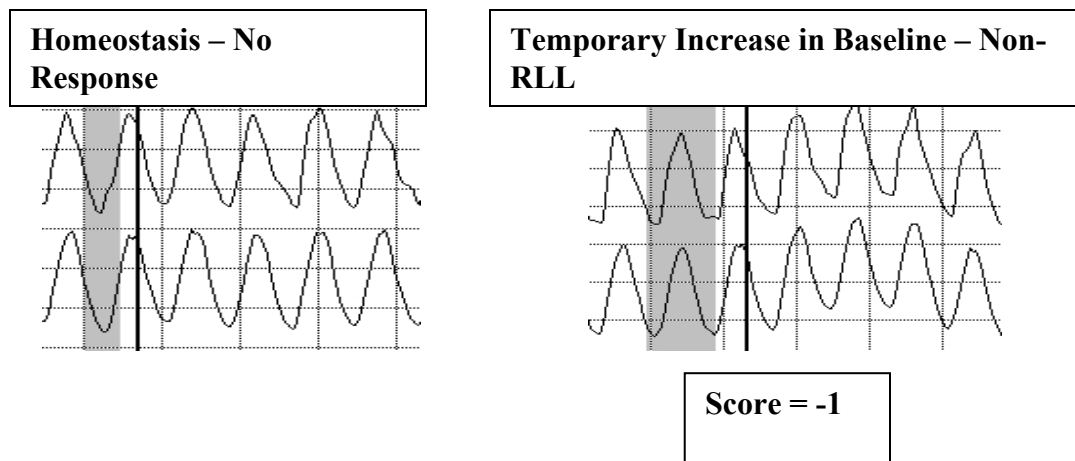
4.15.9. There are going to be instances where you will not be able to discern, without use of a measuring device (i.e., planimeter, ruler, etc.), which comparative response has the shorter line length. In such instances, assign a value of zero. Your assessment should be visual and not based on the use of a measuring device.

4.16. When RLL is not applicable, the comparative response (i.e., relevant or comparison) exhibiting the most significant change in significance or duration is assigned a value of either minus one (-1) or plus one (+1). If no appreciable difference exists between comparative responses, assign a value of zero.

4.16.1. In the Figure F.17 (pg 23), both responses exhibit a temporary increase in baseline, which is a non-RLL response. The relevant question is much more significant in response and duration than the comparison question response. During the analysis, the relevant question would be assigned a value of minus one (-1).

**Figure F.17. Respiration Question Pairing #9**

4.16.2. In the final respiratory example (Figure F.18), RLL does not apply. In the comparison question, there is no response as the respiratory tracing remains in homeostasis. During presentation of the relevant question, there is a temporary increase in baseline response which is a non-RLL response. During the evaluation process, since there was no response in the comparison question, a value of minus one (-1) would be assigned for the relevant question response.

**Figure F.18. Respiration Question Pairing #10**

#### 4.17. Seven-Position Numerical Evaluation Scale.

4.17.1. The conventional approach to evaluating the respiration waveform has generally been one of conservatism (J. C. Kircher, personal communication, September 11, 2002). The seven-position numerical evaluation scale introduces more subjectivity into the evaluation process than the three-position scale because the range of values that can be assigned to an analysis spot increases three fold. Also, examiners typically temper their evaluation of the respiration waveform based, in part, on the realization that examinees can exercise control over the data displayed in the respiratory channel. Moreover, the respiratory channel utilizes the most

diagnostic features (six) and is subject to a wide range of variability. When the waveform trend is highly erratic, an examiner's confidence in the diagnostic value of a response is less than when the waveform is stable.

4.17.2. Under the seven-position scale, any of the following values may be assigned to a respiration analysis spot: - 3, - 2, -1, 0, + 1, + 2, + 3.

4.17.2.1. While values greater than a plus one (i.e., +2 or +3) or less than a minus one (i.e., -2 or -3) may be justified, they are seldom used. While a plus or minus two (+/-2) is occasionally utilized, a plus or minus three (+/-3) is very rarely used.

4.17.3. There are three descriptive words that correlate to the values assigned to evaluation of the respiration waveform. They are subtle, obvious, and dramatic. The ability to discriminate between what is obvious from what is dramatic is a subjective and often difficult enterprise. Notwithstanding the subjectivity in assigning values utilizing the seven-position scale, values must be uniformly applied and consistent with the applicable testing protocol.

4.17.3.1. If the difference between one of the comparative spots is *subtly* more significant, assign a value of plus one or minus one (+/- 1).

4.17.3.2. If the difference between one of the comparative spots is *obviously* more significant, a value of plus or minus two (+/- 2) is justified.

4.17.3.3. If the difference between one of the comparative spots is *dramatically* more significant, a value of plus or minus three (+/-3) is justified.

4.18. It is virtually impossible to identify all instances where values higher than plus one or lower than minus one may be warranted. However, consider the points below as a general guideline in helping you to determine whether values other than plus or minus one are warranted. Ultimately, your respective agency, if it employs the seven-position scale, may govern when and how to assign values using this scale. Remember, relative significance and duration should drive your decision and your decision process must be consistently applied.

4.18.1. When comparing two similar responses (i.e., apnea-blocking), and one response has twice as much response duration as the other, a value greater than plus one or less than minus one is justified because the difference is at least obvious.

4.18.2. When comparing a comparative question that is devoid of response against a comparative question consisting of 15 seconds of response, a value greater than plus one or less than minus one is justified because the difference is at least obvious, if not dramatic. This is particularly so if the examinee's respiration response stereotypy is approximately five seconds in duration.

4.18.3. When comparing one question that is devoid of response against one question that has several diagnostic features (irrespective of whether RLL is applicable), a value greater than plus one or less than minus one is justified because the difference is at least obvious.

4.18.4. When comparing two dissimilar responses (i.e., decrease in rate for two cycles versus decrease in amplitude lasting for five or more cycles), where one response is at least twice as significant in terms of response duration, a value greater than plus or minus one may be justified.

## 5.0. ELECTRODERMAL ACTIVITY (EDA) WAVEFORM

**“The galvanic skin phenomenon is under the influence of exciting mental impressions and the will has no effect upon it.”**

Sticker, A., 1897

5.1. Anatomy and Physiology. The ED waveform is a reflection of the electrical changes in human skin (Dawson et al, 2000). Examiners are principally involved in monitoring and recording either the examinee’s skin resistance level (SRL) or skin conductance level (SCL) and deviations from those levels that we refer to as phasic activity. This is accomplished through the passage of an electrical current across the skin and is termed an exosomatic ED measure.

5.1.1. Traditionally, whether viewing a computer screen or a printed PDD chart, the third waveform/tracing from the top is representative of the examinee’s EDA. The ED channel appears to be the most heavily relied upon measure of physiological activity.

5.2. While various theories have been postulated for what contributes to changes in the skin’s electrical property, examiners tend to favor the secretory theory advanced by Tarchanoff (1890). Tarchanoff believed EDA was related to sweat gland activity. Darrow’s research (1927) supported Tarchanoff’s theory. Is it the moisture on the surface of the skin or the activity of the sweat glands per se that is critical for EDA? Darrow found that ED activity actually began one second before moisture appeared on the surface of the skin, so it was concluded that activity of the sweat glands, not sweat on the skin, was critical for EDA (Dawson et al, 2000).

5.2.1. Veraguth (1907) wrote, “. . .that the electrical phenomena picked up with the galvanometer was attributable to activity of the sweat glands.” What we know is that EDA is highly correlated with the psychological concepts of emotion, arousal, and attention (Dawson et al, 2000), and therefore, is of tremendous benefit to us in PDD.

5.3. The skin is the largest organ of the human body. It primarily serves as a protective coating (Weinstein, 1994). The eccrine sweat gland is the component of skin that examiners are most interested in, not so much because of its thermoregulatory function, but because of its responsiveness to a wide variety of external stimuli.

5.3.1. Eccrine sweat glands are generally found all over the human body. However, they can be found in greatest concentration on the palmar surface of the hand and soles of the feet (Weinstein, 1994). According to Weinstein, there are between 2000 to 2500 eccrine sweat glands per square centimeter of skin surface.

5.3.2. The eccrine sweat gland constantly strives to maintain its homeostatic state of being empty (Weinstein, 1994). Not surprisingly, the positioning of sweat constantly fluctuates between the secretory portion of the sweat gland and the skin’s surface.

5.3.2.1. Passive re-absorption and active re-absorption are two mechanisms that help us explain ED waveform activity that is monitored and recorded. When the sweat gland is innervated, sweat begins to rise through the sweat duct. The sweat, as it continues its journey toward the skin's surface, will penetrate through a membrane and hydrate the corneum (comprised of dead dry skin cells) through a passive process. Assuming there is a sufficient amount of sweat, the sweat will then continue toward the skin's pore and exit onto the skin's surface (Weinstein, 1994).

5.3.2.2. Active re-absorption is the process by which the body attempts to return the sweat, which is rising through the sweat duct, back to its homeostatic state of being empty. However, sometimes there exists a competition between sweat rising through the duct and the body's desire to return it back to the secretory portion of the sweat gland (Weinstein, 1994).

5.3.2.3. The ED tonic level is a reflection of the average moisture level of the skin's surface (Weinstein, 1994). We attribute an increase in baseline arousal, or change in waveform amplitude, to sweat rising from either the sweat gland or from some other fluctuating point between the gland and the skin's pore at the time the stimulus was applied. Electrodermal waveform recovery is most often attributable to active re-absorption. The time it takes for sweat to begin rising up through the duct to the time it returns to the pre-stimulus level is a reflection of response duration. An ED complex response is evidenced by multiple peaks (the largest peak may be on the rise or recovery side) and suggests that as active re-absorption is occurring sweat production increases, overcoming the sweat gland's return to homeostasis.

5.4. During the data collection phase of an examination, the examiner attaches two sensors (known as fingerplates or electrodes) to the underside surface of two fingers of an examinee's hand or to the palmar surfaces of the hand to record and monitor their EDA. If used, most examiners favor placing the fingerplates on the volar surfaces of the distal phalanges (the pad opposite the fingernail) on the examinee's non-dominant hand (Dawson et al, 2000).

5.4.1. Typically, the fingerplate electrode assembly consists of two stainless steel plates or two silver-silver chloride cup electrodes, with Velcro fastening straps and an electromagnetic shielded cable for connection to a computer sensor box or analog instrument.

5.5 **Waveform/Tracing Amplitude.** Obtain a waveform or tracing amplitude of between one inch and two inches, irrespective of grid setting, prior to going into actual operation.

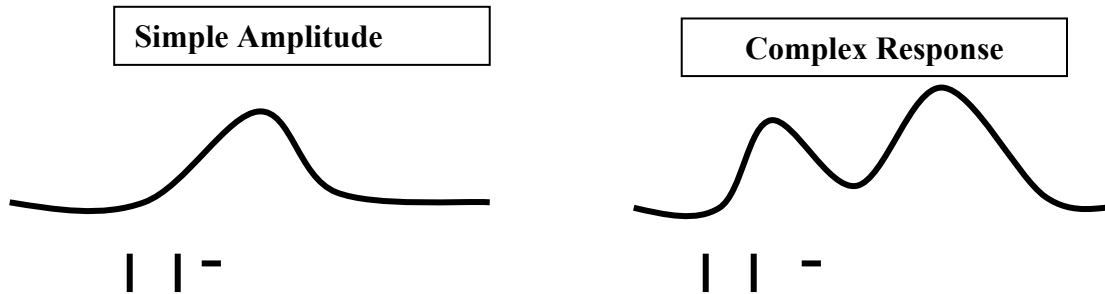
5.6. **Electrodermal Features.** There are three physiological phenomena or ED diagnostic features used to evaluate PDD data. One feature is the primary diagnostic feature (amplitude) and two others are secondary features. The following examples will provide you with a representative signature of each feature.

5.6.1. **Amplitude (primary feature) (Figure F.19).** Waveform amplitude is measured from response onset to the highest peak of a response, irrespective of whether the response is a simple or complex response. Remember, an amplitude increase from homeostasis is a result of sweat rising from the gland up through the duct and out through the duct pore on to the surface of the skin.

5.6.1.1. The pre-stimulus tonic level refers to the waveform when it is either in homeostasis or when a temporary leveling of the waveform occurs resulting in a newly established baseline.

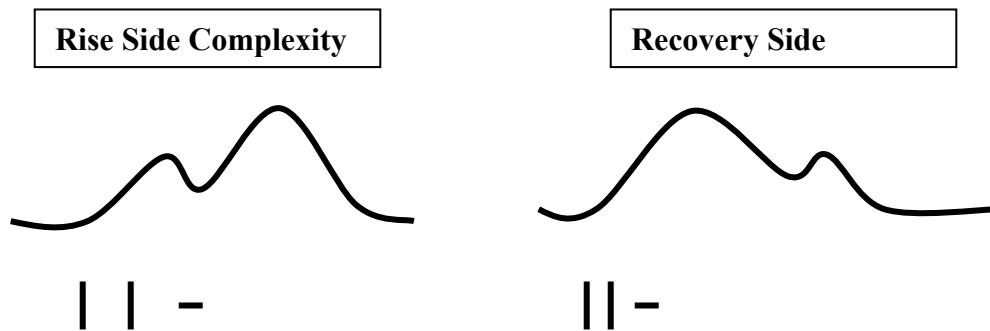
5.6.1.2. An ED response is represented graphically as an increase in amplitude, regardless of whether it represents an increase in conductance or a decrease in resistance. An amplitude change may be displayed as a simple or complex response.

**Figure F.19. Amplitude**



5.6.2. Complex Response (secondary feature) (Figure F.20). An ED complex response is differentiated from a simple response in that a complex response has multiple peaks. A response is considered complex when there is some observable recovery that falls short of the pre-stimulus tonic level with subsequent physiological arousal.

**Figure F.20. Complex Response**

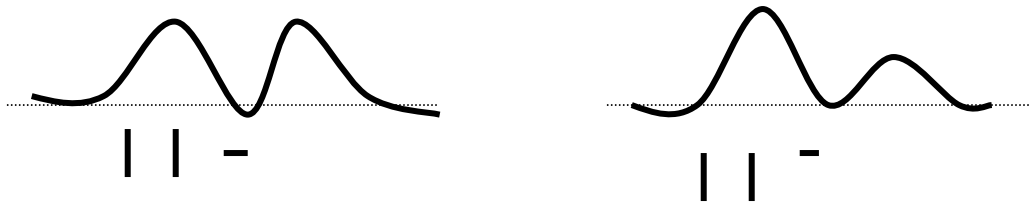


5.6.2.1. If the trough, between multiple peaks, returns to or below the pre-stimulus tonic level, the response is not considered a complex response. In Figure F.21 (pg 28), the responses are not complex, even though they have multiple peaks, because the trough fell slightly below the pre-stimulus tonic level in the example on the left, and it returned to the pre-stimulus level in the example on the right.

**Figure F.21. Trough Depiction**





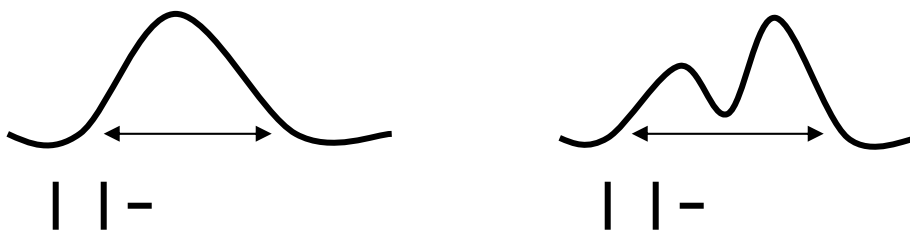


5.6.3. Response complexity, in part, is due to the competition that occurs between sweat rising from the eccrine sweat gland through the duct on its way to the sweat pore and active

re-absorption where the sweat is being returned to its homeostatic state that is empty (Weinstein, 1994). Environmental conditions and other factors affect response latency, response magnitude and other components or attributes of response complexity.

5.7. Duration (secondary feature) (Figure F.22). The ED response duration is the time period between response onset and return to the pre-stimulus tonic level or establishment of a new baseline. Generally, ED response duration is highly correlated with amplitude.

**Figure F.22. Response Duration**



5.7.1. Electrodermal response duration is attributable to the continuation of sweat production or the time period between the initiation of sweat rising from the sweat gland up the duct to its eventual return to the pre-stimulus tonic level. During a complex response, the return to the pre-stimulus tonic level is interrupted by subsequent rise of sweat in the duct.

#### 5.8. Three-Position Numerical Evaluation Scale.

5.8.1. Evaluating Similar ED Responses. When evaluating similar comparative responses (i.e., each waveform exhibits a simple amplitude response or they exhibit a complex response), response amplitude is the primary diagnostic feature used to assign a value.

5.8.2. If a simple amplitude response is the only applicable feature used in evaluating comparative responses (i.e., neither comparative response has complexity), the response with the most significant amplitude (as determined by the waveform peaks) receives the value. Assigning a value of plus or minus one (+/- 1) is justified any time there is a visually discernible amplitude difference between competing responses.

5.8.3. When the amplitude of two simple or two complex ED responses are essentially the same but one comparative response has more duration, the response with the more significant duration is assigned the value.

5.8.4. Evaluating Dissimilar ED Responses. The following decision rules apply in evaluating dissimilar (or unlike) ED comparative responses:

5.8.4.1. When one waveform exhibits a simple amplitude response and another displays a complex response, amplitude is the primary diagnostic feature used to assign a value.

5.8.4.1.1. When two dissimilar comparative responses share equivalent degrees of amplitude, the response exhibiting complexity receives the value.

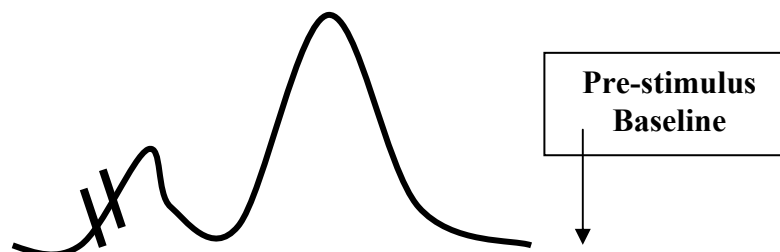
5.8.4.2. Response complexity neither takes precedence over, nor does it neutralize, a response with more amplitude.

5.8.4.3. Duration is never a decision factor when comparing dissimilar ED responses. The basis for this is that complexity, by its nature, will generally have more duration than a simple response.

5.8.5. Homeostasis Considerations. Homeostasis should exist prior to stimulus onset. If homeostasis does not exist at stimulus onset, the ED waveform may generally be evaluated if any of the conditions listed below exist. When employing one of the exceptions to homeostasis, the paramount consideration is whether the response you anticipate evaluating is a by-product of the activity that preceded stimulus onset or more likely a result of stimulus presentation. A standard of reasonableness should drive your decision. If you have no confidence that the response of interest is relatively free from influence of other activity, assigning a value of  $\emptyset$  (zero with a line through it) to the respective analysis spot is appropriate.

5.8.5.1. The means by which an examiner annotates that portion of an ED waveform that is not used for evaluation is by placing a double slash mark (//) on the rise side of the suspect portion of the waveform. Figure F.23 (pg 30) depicts how this annotation is displayed when an early ED response is not considered for evaluation, yet the subsequent response is evaluated. Examiners tend not to use this annotation as much today as in the past. Only when you are trying to convey which portion of the waveform was used for evaluation, or when there is a possibility that someone may not understand which portion of the waveform was used for evaluation is the annotation called for.

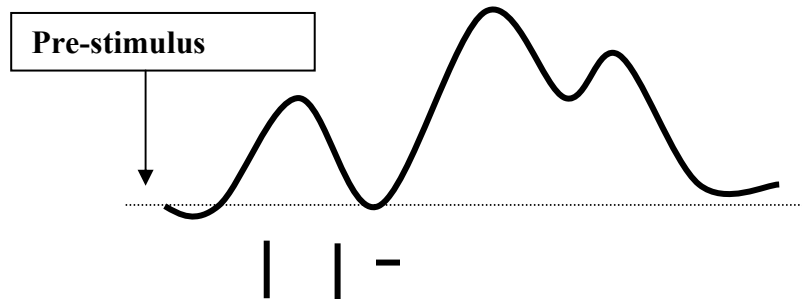
**Figure F.23. Use of the Double Slash Mark**



.....  
 | | -

5.8.6.1. Homeostasis Exception #1 (Figure F.24). The waveform returns to the pre-stimulus baseline with subsequent response occurring within the response onset window. Note that the presentation of the stimulus occurred on the rise side of the non-specific response.

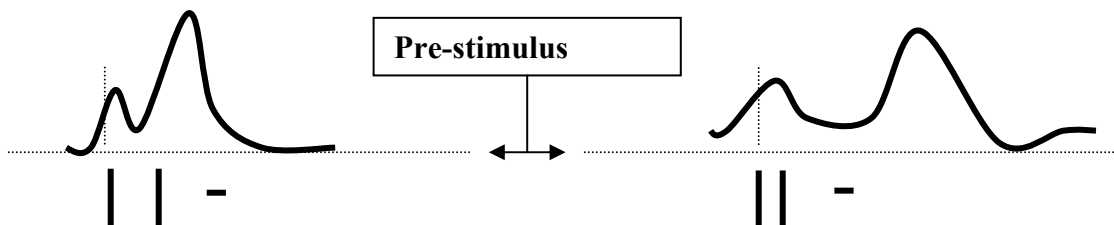
**Figure F.24. Homeostasis Exception #1**



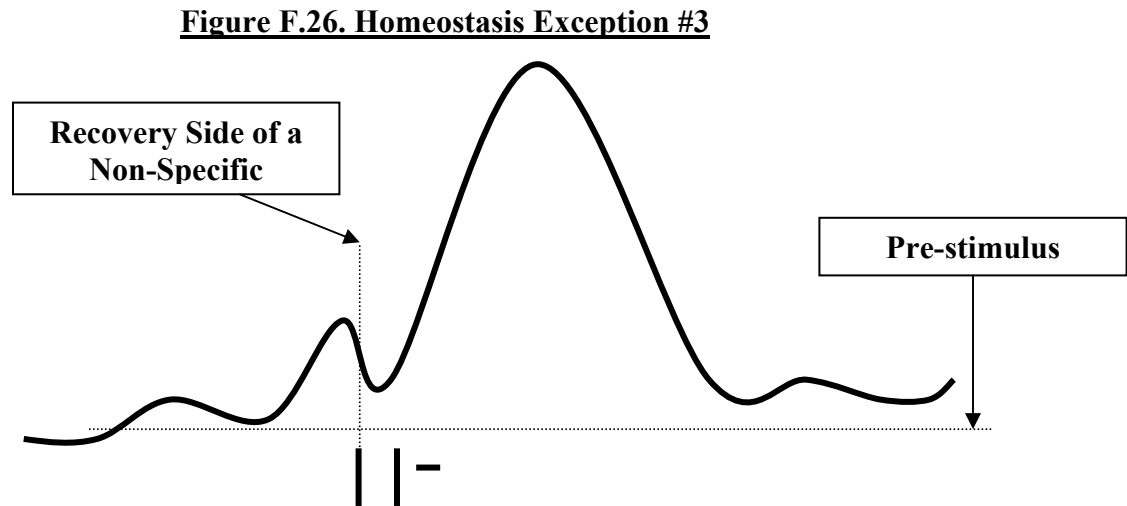
5.8.6.2. Homeostasis Exception #2. The waveform establishes a new tonic level with subsequent response occurring within the response onset window.

5.8.6.2.1. Generally, there is no set period of time that the ED waveform must be stable before deeming it to have established a new tonic level. However, the longer the stabilization of the waveform, the greater confidence the evaluator will have in the authenticity of the response of interest. For example, the waveform depicted on the left in Figure F.25 (pg 31) would not be used for evaluation because there is no waveform stabilization separating the two peaks. However, the waveform to the right may be used for evaluation because arguably a new tonic level was established. Moreover, the evaluator can be reasonably more confident that the response on the right was, more likely than not, a result of the stimulus' content and the examinee's answer to the stimulus, whereas such confidence is not possible given the response on the left. Note that the stimulus, in each case, was presented on the rise side of the non-specific response.

**Figure F.25. Homeostasis Exception #2**



5.8.6.3. Homeostasis Exception #3. During recovery from a non-specific response, the stimulus was presented resulting in a subsequent but distinct response that occurs within the response onset window. In Figure F.26 below, note that the recovery side of the non-specific response falls short of the baseline before a secondary response occurs.



5.8.6.3.1. Apply this last exception judiciously, as several factors will dictate whether the response of interest is of diagnostic value. In the example above, the response occurring within the response onset window is arguably sufficiently distinct from the preceding non-specific response. As such, it may be reasonable to conclude that it is more likely a product of the presented stimulus than to what generated the initial non-specific response. Global evaluation of a subject's response capability and pattern throughout the examination will be helpful in assessing the diagnostic value of the response of interest.

5.9. Seven-Position Numerical Evaluation Scale. Many of the decision rules used to evaluate EDA using the three-position scale are equally applicable using the seven-position scale. Only differences between the two scales are identified below.

5.9.1. To assist in assigning a weighted value defer to the standard unit of measurement—a vertical chart division set at a one-quarter grid setting.

5.9.2. A ratio method was devised to assist in evaluating the ED waveform, particularly in assigning values other than zero and plus or minus one.

5.9.2.1. When using the ratio method, first determine the ratio between comparative responses and then assign a value based on the following:

5.9.2.1.1. If the ratio is less than 2:1, defer to the “bigger-is-better” principle.

5.9.2.1.2. If the ratio is at least 2:1, but less than 3:1, assign a plus or minus one.

5.9.2.1.3. If the ratio is at least 3:1, but less than 4:1, assign a plus or minus two.

5.9.2.1.4. If the ratio is at least 4:1, or greater, assign a plus or minus three.

5.10. Bigger-is-Better Principle. How do you evaluate two comparative responses, irrespective of whether they are similar or dissimilar in nature, where the amplitude ratio is less than two-to-one? The principle of “bigger-is-better” was adopted to address this situation. When the ratio between comparative responses is less than 2:1, the response with the more significant amplitude will receive the value.

5.10.1. When the bigger-is-better principle is applicable, it may not result in assignment of any value other than a plus or minus one.

5.10.2. Any visually perceptible amplitude difference between comparative responses is sufficient to award a value. Generally, if any type of measuring device is needed to discern which comparative amplitude response is greater, assign a zero to the analysis spot.

5.11. Duration. When duration is the only discriminator between two similar comparative responses, evaluation rules permit assignment of a value of plus or minus one only.

5.12. Dissimilar Responses. The following decision rules apply to evaluation of dissimilar comparative responses:

5.12.1. Response amplitude is the primary criterion or diagnostic feature used in evaluating dissimilar ED responses.

5.12.2. Duration is not an evaluation consideration when comparing dissimilar ED responses.

5.12.3. Response complexity is not a decision factor once the amplitude ratio between comparative responses reaches a 2:1 ratio. Response complexity will not be assigned values higher than plus one or lower than minus one.

5.13. Something-Versus-Nothing Principle. When comparing one question containing any type of diagnostic response to another question that is devoid of response, the something-versus-nothing principle holds.

5.13.1. When applying the something-versus-nothing principle, defer to vertical chart divisions as a standard unit of measurement to assist in assigning a value. By utilizing this procedure, an examiner can always be consistent in assigning values. It’s important to remember that all guidance in this pamphlet assumes vertical chart divisions are set at a quarter inch grid setting. If any other grid setting is used, modify the following guidance as appropriate.

5.13.1.1. If one comparative spot is devoid of response and the other comparative spot has a response that measures less than two chart divisions, assign a value of plus or minus one.

5.13.1.2. If one comparative spot is devoid of response and the other comparative spot has a response that measures at least two but less than three chart divisions, assign a value of plus or minus two.

5.13.1.3. If one comparative spot is devoid of response and the other comparative spot has a response that measures at least three chart divisions, assign a value of plus or minus three.

5.13.2. If a response appears to be an anomaly for that channel or waveform, a lesser value than would otherwise be justified, under the something-versus-nothing principle, can be assigned to an analysis spot. This conservative approach to evaluation of an analysis spot must be uniformly applied and exercised in only the most unique circumstances.

## 6.0. CARDIOVASCULAR (CV) WAVEFORM

**“Though the observed actions of men hide their real thoughts and feelings, these are revealed by the observation of their hearts.”**

Gantt, W. H., 1960

6.1. Anatomy and Physiology. The CV system consists of the heart, blood vessels and blood. The principal functions of this system are to transport nutrients, oxygen and hormones to cells and the removal of waste products. The system also protects the body by white blood cells, antibodies and proteins that circulate in the blood and defend the body against foreign microbes and toxins. The CV system is also responsible for body temperature regulation, fluid pH and water content of cells (Pack, 1997).

6.2. The heart is a muscular organ that beats about 100,000 times a day and is ultimately responsible for all CV functions (Martini, 2000). The heart is also a four-chamber muscular pump with an average size of a grapefruit and weighs about 300 grams (Bevan, 1996).

6.3. Polygraph examiners are interested with pulmonary and systemic circulatory pathways; the heart itself, particularly the chambers and valves; cardiac conduction; cardiac muscle contraction; the cardiac cycle, specifically the segments of a heart beat; cardiac output, such as stroke volume and heart rate; and blood pressure.

6.3.1. Pulmonary circulation and systemic circulation are responsible for transporting blood throughout the body via a 96,500-kilometer network of blood vessels (Bevan, 1996). The pulmonary circuit transports oxygenated blood from the lungs to the left atrium where it is temporarily housed before entering the left ventricle for release throughout the body via the systemic circuit. The systemic circuit then takes the deoxygenated blood from the body and transports it to the right atrium, where it is temporarily housed before being passed into the right ventricle. The right ventricle pumps the deoxygenated blood through the pulmonary trunk to facilitate pulmonary circulation (Pack, 1997).

6.3.1.1. With respect to the functioning and flow of blood through the heart, the activity of the right and left atrium and the right and left ventricles of the heart are of particular interest to examiners as are the valves (i.e., bicuspid & tricuspid) that facilitate and control blood

flow. Also of interest is the functioning and movement of blood (i.e, blood volume changes) at particular arterial monitoring sites on the body.

6.3.2. The cardiac cycle describes all the activities of the heart through one complete heartbeat that involves one contraction and relaxation of both the atria and ventricles (Pack, 1997). The contraction phase is known as systole and the relaxation phase is known as diastole (Brownley et al, 2000).

6.3.3. As ventricular contraction occurs, there is an increase in pressure (ventricular pressure exceeds arterial pressure) causing the aortic and pulmonary semi-lunar valves to open and blood is ejected out of the ventricles (Brownley et al, 2000). As the ventricles begin to relax, blood in the aorta and pulmonary trunk begins to flow backward, against the now-closed semi-lunar valves.

6.3.3.1. The rebounding of blood against the closed semi-lunar valves, causes a momentary interruption in the flow of blood and a small increase in blood pressure which appears as the dicrotic notch on the CV waveform (Abrams, 1989). At times, the presence of a dicrotic notch may not be visible in the waveform depicted on your computer screen or printed charts.

6.3.3.1.1. The presence of the dicrotic notch, irrespective of its positioning along the diastolic segment of the cardiac cycle (high, middle, or low), is of no diagnostic value with respect to an examinee's veracity.

6.3.4. Heart rate refers to the number of heartbeats that occur per minute (bpm). Larsen (1986) and Abrams (1989) cite 70 bpm as the approximate normal human adult heart rate. Obrist (1981) cites 72 bpm where as Martini (2000) cited the average heart rate ranges between 70-80 bpm. Interestingly, during sleep this heart rate may decrease by 10 to 20 bpm; during emotional excitement it may reach 150 bpm (Larsen et al, 1986).

6.3.4.1. A heart rate below 60 bpm is termed bradycardia while a heart rate above 100 bpm is termed tachycardia (Martini, 2000). While many things may contribute to bradycardia (i.e., athleticism) or tachycardia (i.e., increased body temperature), examiners are most interested in these conditions when they are associated with emotional excitement and behavioral states (Larsen et al, 1986).

6.3.4.2. An examinee's heart rate can be quickly estimated by counting the number of heartbeats occurring within a five-second period and then by multiplying that number by 12.

6.4. The primary site where we monitor and record CV activity during a PDD examination is over the brachial artery of the upper arm. Other arterial (i.e., radial & ulnar) monitoring sites include the forearm and wrist and in rare instances (i.e., suitable CV waveform cannot otherwise be obtained) behind the gastrocnemius muscle (i.e., calf) of the lower legs.

6.4.1. During the data collection phase, the sensor attached to the examinee is a standard CV blood pressure cuff. This sensor and assembly consists of a rubber bladder, covered with a

cloth or vinyl sleeve and a fastening component (velcro wrap), pump bulb assembly that includes a sphygmomanometer and rubber tubing for connecting the sensor to the computer sensor box or analog instrument.

6.5. Ideally, obtain a CV waveform amplitude of between one-half inch and one inch, irrespective of grid setting, prior to going into actual operation.

6.6. CV Features: There are three diagnostic features used to evaluate CV physiological data. One of these is a primary feature and two are secondary diagnostic features. A representative signature of each feature will be shown. Traditionally, whether viewing a polygraph computer screen or a printed chart, the fourth waveform from the top is representative of the examinee's CV activity.

6.6.1. CV Baseline Arousal (Primary Feature). In numerical analysis, CV baseline changes typically present themselves in the form of phasic responses. Phasic baseline changes occur as a short-term change in physiological activity following stimulus presentation that has a relatively rapid onset and may return to the pre-stimulus baseline or establish a new baseline within a period characteristic of the response system. In Figure F.27 (pg 36), the fact that one phasic response returned to the pre-stimulus baseline and the other response resulted in establishment of a new baseline is insignificant in determining the degree or amount of baseline arousal.

6.6.1.1. Most examiners believe that CV baseline arousal is governed by increases in blood volume changes that occur at the respective monitoring site (Weinstein, 1994). According to Abrams (1989), changes in baseline arousal are likely the result of a combination of blood volume and pressure changes.

6.6.1.2. Generally, baseline arousal is associated with sympathetic nervous system (SNS) activation and is the type of response one would typically predict of an examinee who was experiencing the fight, flight, freeze (F3) phenomenon.

**Figure F.27. CV Baseline Arousal Features**

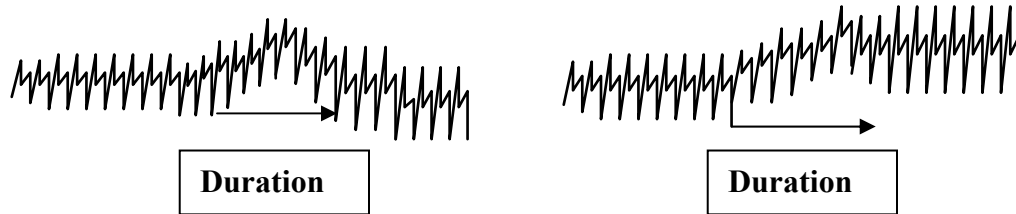




## 6.6.2 Secondary Diagnostic Features:

6.6.2.1. Duration (Figure F.28). CV duration is the amount of time that elapses from response onset to when the response returns to the pre-stimulus tonic level or establishes a new tonic level.

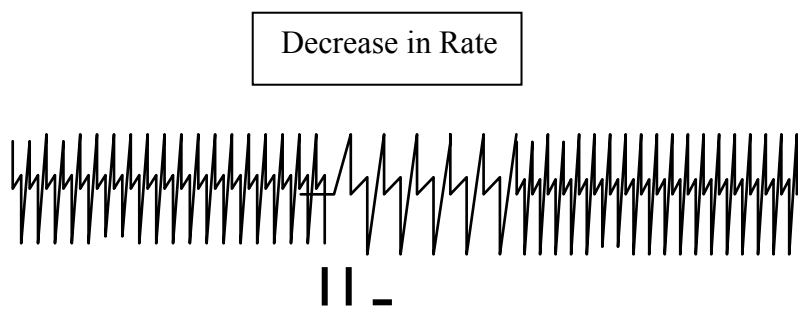
**Figure F.28. CV Baseline Arousal Duration**



6.6.2.2. Decrease in Rate (Figure F.29). A person's heart rate may be influenced by many factors including age, gender, body temperature, and physical fitness. Heart rate is regulated by the autonomic nervous system particularly when the sympathetic branch stimulates cardiac muscle contractions, or when the parasympathetic system inhibits those contractions (Pack, 1997). Heart rate is also impacted by the release of various chemicals within the body (Pack, 1997). The term pulse refers to the wave of pressure with each heartbeat that can be felt in the peripheral arteries near the surface of the skin (Bevan, 1996).

6.6.2.2.1. Diagnostic heart rate changes are observed as a decrease in heart rate (Figure F.29, pg 37) relative to the waveform average for a particular chart.

**Figure F.29. CV Decrease In Rate**



6.6.3. CV amplitude refers to the measurement or height of the actual systolic and diastolic segments of the cardiac cycle (increase or decrease in size of CV tracing). Some research PDD literature use the term amplitude and baseline arousal interchangeably.

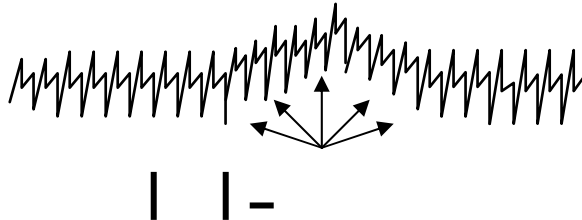
6.6.3.1. Among examiners, it is generally held that amplitude increases and decreases of the CV waveform segments (size of waveform), relative to homeostasis, represents pressure changes (Weinstein, 1994).

## 6.7. Three-Position Numerical Evaluation Scale.

6.7.1. Baseline Arousal. The primary diagnostic feature or criterion used in evaluation of the CV waveform is the degree of baseline arousal (phasic response) one comparative response has in relation to another.

6.7.1.1. Assign the value to the comparative response that has the most significant increase in baseline arousal. Any visual degree of increase in baseline arousal may be awarded the value. Baseline arousal (Figure F.30) is typically determined by looking at the diastolic portion or points found on the underside of the waveform curve (Podlesny et al, 1999).

**Figure F.30. Evaluation Focus Involving Phasic Arousal**



6.7.2. If there is no visually discernible difference in the degree of baseline arousal between comparative responses and the secondary feature of duration is not a consideration, assign a value of zero (0) to the analysis spot.

6.7.3. Secondary Evaluation Considerations. When secondary considerations are the only means of discrimination between otherwise similar responses, a value of plus or minus one only may be assigned.

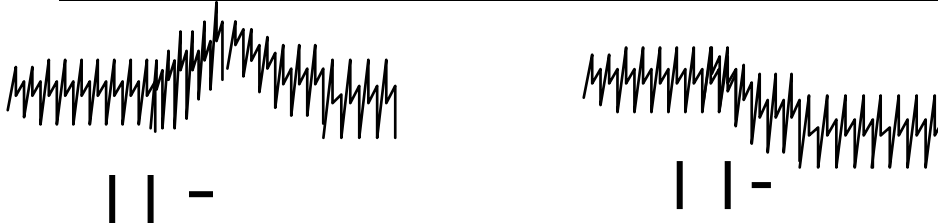
6.7.3.1. Duration. Duration of response is of diagnostic significance when comparing two phasic CV responses. If two comparative phasic responses share the same degree of baseline arousal and one response exhibits more duration than the other response, a value of plus or minus one is awarded to that phasic response.

6.7.3.2. Decrease in Rate. Decrease in CV rate is only a consideration when there is no form of baseline arousal. If two comparative responses without any form of baseline arousal exhibit a decrease in rate in the same analysis spot, the response exhibiting a greater degree of change or having more duration than the other response may be assigned a value of plus or

minus one. However, if in the same analysis spot, one response exhibits baseline arousal (a primary feature) and the other response exhibits a decrease in rate (secondary feature), baseline arousal will be awarded a value of plus or minus one.

6.7.4. Other Evaluation Considerations - Sympathetic Response (Baseline Arousal) versus Parasympathetic Activity (Figure F.31). Although not a primary or secondary evaluation feature, there may be occasions when an examiner will encounter this situation. Assuming homeostasis existed at stimulus onset, a response displaying sympathetic arousal (phasic or tonic) is assigned the value over a comparative response displaying parasympathetic activity as sympathetic arousal is recognized as a flight, flight, freeze (F3) response .

**Figure F.31. Sympathetic Response versus Parasympathetic Activity**



6.8. Homeostasis Considerations. Ideally, homeostasis should exist prior to stimulus onset. If homeostasis does not exist at stimulus onset, the CV waveform may generally be evaluated if any of the conditions listed below exist. When employing one of the exceptions to homeostasis, the paramount consideration is whether the response you anticipate evaluating is a consequence of the activity that preceded stimulus onset or is attributable to stimulus onset. A standard of reasonableness should drive your decision. If you have no confidence that the response of interest is relatively free from influence of other activity assigning a value of  $\emptyset$  (zero with a line through it) to an analysis spot is appropriate.

6.8.1. The waveform returns to the pre-stimulus baseline with subsequent response occurring within the response onset window.

6.8.2. The waveform establishes a new tonic level with subsequent response within the response onset window. (4 – 5 seconds).

6.8.3. During recovery from a non-specific response, the stimulus is applied resulting in a subsequent but distinct response that occurs within the response onset window.

6.8.3.1. Apply this last exception judiciously as several factors will dictate whether the response of interest is of diagnostic value.

6.9. Seven-Position Numerical Evaluation Scale. Many of the decision rules used to evaluate the CV waveform using the three-position scale are equally applicable to the seven-position scale. The differences between the two scales are identified below.

6.9.1. If a comparative response displays phasic arousal and the other comparative response has visually more but less than twice as much arousal, assign a value of plus or minus one.

6.9.2. If a comparative response displays phasic arousal and the other comparative response has twice, but less than three times as much arousal, a value of plus or minus two is justified.

6.9.3. If a comparative response displays phasic arousal and the other comparative response has three or more times the arousal, a value of plus or minus three is justified.

6.9.3.1. Values more significant than plus or minus one are not assigned when comparing CV responses that are differentiated by less than the equivalent of one standard chart division (i.e., one quarter inch or six millimeters in height). In other words, do not consider a situation where one CV comparative response has two millimeters of baseline arousal and another response has four millimeters of baseline arousal as warranting assignment of a plus two given one response is twice as significant as the other.

6.10. Any visually perceptible baseline arousal difference between comparative responses is sufficient to award a value. If any type of measuring device is needed to discern which comparative response is greater, assign a zero to the analysis spot.

6.11. In the seven position analysis scale, secondary CV features of duration and decrease in rate may be assigned a value of plus or minus one only.

6.12. Something-Versus-Nothing Principle. When comparing one question containing any type of diagnostic response to another question that is devoid of response, the something-versus-nothing principle applies.

6.12.1. Generally, when applying the something-versus-nothing principle, defer to vertical chart divisions as a standard unit of measurement to assign a value.

6.12.1.1. If one comparative spot is devoid of response and the other comparative spot has a phasic response that measures less than two chart divisions, assign a value of plus or minus one.

6.11.1.2. If one comparative spot is devoid of response and the other comparative spot has a phasic response that measures at least two but less than three chart divisions, assign a value of plus or minus two.

6.11.1.3. If one comparative spot is devoid of response and the other comparative spot has a phasic response that measures at least three chart divisions, assign a value of plus or minus three.

6.12. If a response appears to be an anomaly for that channel or waveform, a lesser value than would otherwise be justified under the something-versus-nothing principle can be assigned

to an analysis spot. This conservative approach to evaluation of an analysis spot must be uniformly applied and exercised in only the most unique circumstances.

7.0. Conclusion. This document provides you with essential information needed to conduct an analysis of the physiological data you obtain through the use of a polygraph. There are certainly principles or rules governing test data analysis; however, these principles or rules must be tempered with an appreciation for the uniqueness that every individual brings to the testing environment and the uniqueness that potentially every question pairing holds on a given chart. Expertise is a relative term and reading this document will not make you an expert in the field of test data analysis; however, practice and time will!

## APPENDIX A

### 1.0. Comparison Test Formats

1.1. The DACA provides instruction in the use of various comparison question techniques that employ probable-lie and directed-lie formats. The principal probable-lie testing formats are the Zone Comparison Test (ZCT), Air Force Modified General Question Test (AFMGQT) and the DACA (Army) Modified General Question Test (MGQT). The Test for Espionage and Sabotage (TES) is the exclusive directed-lie comparison question format currently taught at DACA.

## APPENDIX B

### 1.0. Zone Comparison Test (ZCT) Evaluation Procedures

1.1. The traditional ZCT is a single-issue test consisting of ten questions. This ZCT format contains three relevant question analysis spots that are compared to at least one of three comparison questions.

1.2. The relevant question analysis spots are: relevant question five (R5), relevant question seven (R7), and relevant question 10 (R10). The serial positioning of each relevant question, within each of the respective question strings (Chart I-1 through Chart I-3), remains the same.

1.3. On Chart I-1, the serial positioning of the comparison questions is at positions four, six and 10 within the question string. Following Chart I-1, comparison questions may be rotated at the examiner's discretion to ensure that the most responsive comparison from the previous chart is aligned adjacent to the most responsive relevant question from the previous chart.

1.4. The irrelevant, sacrifice relevant and symptomatic questions are not evaluated and their serial positioning generally remains unchanged from chart to chart. The following depicts the serial positioning of each question in the question string for Chart I-1. Question one (I1) is an irrelevant question. Question two is a sacrifice relevant (SR2) question. Questions three (S3) and eight (S8) are symptomatic questions. Questions five, seven and ten are relevant questions and questions four, six and nine are comparison questions.

I1 - SR2 - S3 - C4 - R5 - C6 - R7 - S8 - C9 - R10

1.4.1. Relevant question five is evaluated against the most responsive of comparison question four or six.

1.4.2. Relevant question seven is evaluated against comparison question six only.

1.4.3. Relevant question 10 is evaluated against comparison question nine.

1.5. Test Data Analysis. The three ZCT decision outcomes that can be rendered are NDI, DI and NO. The ZCT decision rules are predicated on vertical and horizontal spot analysis totals.

1.5.1. For a No Deception Indicated (NDI) opinion, there must be a plus (+) in the each overall vertical spot with a horizontal grand total of plus six (+6) or greater.

1.5.2. For a Deception Indicated (DI) opinion, there must be either a minus three (-3) at any overall vertical spot or a horizontal grand total of minus six (-6) or less.

1.5.3. Any numerical score not meeting the threshold for a DI or NDI decision shall be deemed No Opinion.

## APPENDIX C

### 1.0. You-Phase Zone Comparison Test (ZCT) Evaluation Procedures

1.1. There are several versions or formats related to the traditional ZCT (i.e., You-Phase, Exploratory, S-K-Y). The You-Phase ZCT is a single-issue test consisting of nine questions. This ZCT format contains two relevant question analysis spots that are compared to at least one of three comparison questions.

1.2. The relevant question analysis spots are: relevant question five (R5) and relevant question seven (R7). The serial positioning of each relevant question within each of the respective question strings (Chart I-1 through Chart I-3) remains the same.

1.3. On Chart I-1, the serial positioning of the comparison questions is at positions four, six and eight. Following Chart I-1, comparison questions may be rotated at the examiner's discretion to ensure that the most responsive comparison from the previous chart is aligned adjacent to the most responsive relevant question from the previous chart.

1.4. The irrelevant, sacrifice relevant and symptomatic questions are not evaluated and their serial positioning generally remains unchanged from chart to chart. The following depicts the serial positioning of each question in the question string for Chart I-1. Question one (I1) is an irrelevant question. Question two is a sacrifice relevant (SR2) question. Questions three (S3) and nine (S9) are symptomatic questions. Questions five and seven are relevant questions and questions four, six and eight are comparison questions.

I1 - SR2 - S3 - C4 - R5 - C6 - R7 - C8 - S9

1.4.1. Relevant question five is evaluated against the most responsive of comparison question four or six.

1.4.2. Relevant question seven is evaluated against either comparison question six or eight.

1.5. Test Data Analysis. The three decisions that can be rendered are NDI, DI and NO. The You-Phase ZCT decision rules are predicated on vertical and horizontal spot analysis totals.

1.5.1. For a No Deception Indicated (NDI) opinion, there must be a plus (+) in each overall vertical spot with a horizontal grand total of plus four (+4) or greater.

1.5.2. For a Deception Indicated (DI) opinion, there must be either a minus three (-3) at any overall vertical spot or a horizontal grand total of minus four (-4) or less.

1.5.3. Any numerical score not meeting the threshold for a DI or NDI decision shall be deemed No Opinion.



## APPENDIX D

### 1.0. Air Force Modified General Question Test (AFMGQT) Evaluation Procedures.

1.1. The AFMGQT is a modified version of a polygraph technique originally developed by John Reid. In 1968, the U.S. Army Military Police Polygraph School modified Reid's technique and called it the Army MGQT. In the mid 1970s, the Air Force modified the Army MGQT by adding a sacrifice relevant, adding more comparison questions and allowing for a two, three or four relevant question test. The Air Force called its modified version the AFMGQT (AFMGQT 2005).

1.2. The AFMGQT allows for a minimum and maximum number of relevant questions involving the same primary target. The AFMGQT has two, three and four relevant question tests. Depending on available case facts and personal preference, the PDD examiner may utilize any of these tests in resolving specific issue crimes, assuming that all relevant issues are resolved by the chosen relevant question test (AFMGQT 2005).

1.3. There are two authorized versions of the AFMGQT. It is the examiner's discretion as to which version is utilized in specific issue testing (AFMGQT 2005).

1.3.1. Version 1 is the original AFMGQT format that was modified from the Army MGQT in the mid 1970s. Version 1 of the AFMGQT has a two, three and four relevant question test. In this version, chart 2 is always a mixed chart. At the examiner's discretion, chart 3 may also be a mixed chart or it may be in straight sequence

1.3.1.1. The following depicts the question string for a two relevant question test of version 1: I(1), SR(2), C3, R4, C5, R6, C7.

1.3.1.1.1 The analysis spots for this test are R4 and R6. R4 is always a secondary relevant question and R6 is always the primary relevant question. Comparisons C3 and C5 are evaluated against R4. Comparisons C5 and C7 are evaluated against R6. If the serial positions of the comparison or relevant questions are moved in the question string for charts 2 and 3, the comparisons bracketing each relevant question are used in the evaluation process.

1.3.1.2. The question string for a three relevant question test of version 1 is: I(1), SR(2), C3, R4, C5, R6, C7, R8.

1.3.1.2.1. The analysis spots for the three relevant question test are R4, R6 and R8. Relevant questions R4 and R8 are secondary relevant questions and R6 is always the primary relevant question. Comparisons C3 and C5 are evaluated against R4. Comparisons C5 and C7 are evaluated against R6 and comparison C7 is evaluated against R8. In the three relevant question test, the last relevant in the question string is evaluated against the preceding comparison only. If the serial positions of the comparison or relevant questions are moved in the question string for charts 2 and 3, the comparisons bracketing each relevant question are used in the evaluation process. Also, for these two charts, the last relevant question in the question string is evaluated against the preceding comparison question only.

1.3.1.3. The four relevant question string of version 1 is: I (1), SR (2), C3, R4, C5, R6, C7, R8, C9, R10.

1.3.1.3.1. The analysis spots for the four relevant question version are R4, R6, R8 and R10. Relevant questions R4, R8 and R10 are secondary relevant questions. Relevant question 6 is always the primary relevant question. Comparisons C3 and C5 are evaluated against R4. Comparisons C5 and C7 are evaluated against R6. Comparisons C7 and C9 are evaluated against R8. Comparison C9 is evaluated against R10. In the four relevant question test, the last relevant in the question string is evaluated against the preceding comparison only. If the serial positions of the comparison or relevant questions are moved in the question string for charts 2 and 3, the comparisons bracketing each relevant question are used in the evaluation process. Also, for these two charts, the last relevant question in the question string is evaluated against the preceding comparison question only.

1.3.2. Version 2 is a modified version of the original AFMGQT created by the Air Force in the mid 1970s. Initially, it was devised as an authorized testing format for counterintelligence security polygraph examinations. It was subsequently approved as an authorized testing format for specific issue examinations. As in Version 1, version 2 of the AFMGQT also has a two, three and four relevant question test.

1.3.2.1. The primary difference between versions 1 and 2 of the AFMGQT is that each relevant question in version 2 is always bracketed by a comparison question. In the analysis process, each relevant is always evaluated against the most responsive bracketing comparison question.

1.3.2.2. The question string for each type of test in version 2 is as follows:

1.3.2.2.1. Two relevant question test: I(1), SR(2), C3, R4, R5, C6

1.3.2.2.2 Three relevant question test: I(1), SR(2), C3, R4, R5, C6, R7, C8

1.3.2.2.3 Four relevant question test: I(1), SR(2), C3, R4, R5, C6, R7, R8, C9

1.3.2.3. In this testing format, relevant question 5 is always the primary relevant question while all other relevant questions are secondary relevant questions. As in Version 1, chart 2 is always a mixed chart. At the examiner's discretion, chart 3 may also be a mixed chart or it may be in straight sequence.

1.4. Test Data Analysis. The three AFMGQT decision outcomes that can be rendered are NDI, DI and NO. The AFMGQT relies only on vertical spot totals (AFMGQT 2005).

1.4.1. For a NDI opinion, there must be at least a plus three (+3) or greater at each overall vertical spot total.

1.4.2. A minus three (-3) or less at any overall vertical spot total, regardless of the scores for the other overall vertical spot totals, will result in a DI opinion.

1.4.3. Any other combination of overall vertical spot totals is considered NO.

## APPENDIX E

1.0. DACA (Army) Modified General Question Test (MGQT) Evaluation Procedures

1.1. The DACA MGQT is a multi-facet test in which the relevant questions are targeted toward different elements of the same crime (Kraphol et al, 2002).

1.2. The DACA MGQT format contains four relevant question analysis spots and two comparison questions (questions six and ten). The relevant question analysis spots are: relevant question three (R3), relevant question five (R5), relevant question eight (R8), and relevant question nine (R9). Generally, the serial positioning of each question within the question string is identical on the first two charts (Charts I-1 and I-2); however, at the examiner's discretion, the comparison questions may be moved in the question string for Chart I-2. The third chart (Chart I-3) is presented in a mixed order and the serial positioning of the relevant questions is at the examiner's discretion. (MGQT, 2004).

1.3. The DACA MGQT format utilizes two comparison questions that are serial positioned, on Chart I-1 and Chart I-2, at position six and ten within the question string. On Chart I-3, each of the two comparison questions are asked twice and their serial positioning is at the examiner's discretion.

1.4. The following depicts the serial position of each question in the question string for Chart I-1 and Chart I-2. Questions one, two, four and seven are irrelevant questions. Questions three, five, eight and nine are relevant questions and questions six and ten are comparison questions.

I1 - I2 - R3 - I4 - R5 - C6 - I7 - R8 - R9 - C10

1.5 The following depicts examples of the serial position of each question in the question string for the mixed chart that is labeled I-3:

I4 - I1 - R5 - C6 - R3 - C10 - R9 - C6 - R8 - C10

I4 - I1 - R9 - C10 - R8 - C6 - R5 - C10 - R3 - C6

I4 - I1 - R8 - C6 - R9 - C10 - R3 - C6 - R5 - C10

1.5.1. Spot I: For Charts I-1 and I-2, relevant question three is evaluated against comparison question six.

1.5.1.1. On Chart I-3, the first relevant question (which is typically the least responsive from the previous two charts collected) is only compared against the first comparison question.

1.5.2. Spot 2: For Charts I-1 and I-2, relevant question five is evaluated against comparison question six.

1.5.2.1. On Chart I-3, the second relevant question appearing in the question string is compared against the adjacent comparison question that elicited the most significant response in each of the respective recording channels.

1.5.3. Spot 3: For Charts I-1 and I-2, relevant question eight is evaluated against either comparison question six or comparison question 10.

1.5.3.1. On Chart I-3, the third relevant question appearing in the question string is compared against the adjacent comparison question that elicited the most significant response in each of the respective recording channels.

1.5.4. Spot 4: For Charts I-1 and I-2, relevant question nine is evaluated against comparison question 10.

1.5.4.1. On Chart I-3, the fourth relevant question appearing in the question string is compared against the adjacent comparison question that elicited the most significant response in each of the respective recording channels.

1.6. Test Data Analysis. The three DACA MGQT decision outcomes that can be rendered are NDI, DI and NO. The DACA MGQT relies only on vertical spot totals (MGQT 2004).

1.6.1. For a NDI opinion, there must be at least a plus three (+3) or greater at each overall vertical spot total.

1.6.2. A minus three (-3) or less at any overall vertical spot total, regardless of the scores for the other overall vertical spot totals, will result in a DI opinion.

1.6.3. Any other combination of overall vertical spot totals is considered NO.

## APPENDIX F

### 1.0. Test for Espionage and Sabotage (TES) Evaluation Procedures.

1.1. The TES was designed to provide a means of ensuring that the loyalty of individuals entrusted with our Nation's secrets is further confirmed (TES, 2004). In the TES format, developed by DACA, there are three sets of two relevant question pairings or six relevant question analysis spots comprising each of two sub-tests (i.e., Sub-test A & Sub-test B).

1.2. Sub-test A: The standard serial positioning of each question within the question string is as follows:

I1 - I2 - SR - 1C1 - 1R1 - 1R2 - 1C2 - 2R1 - 2R2 - 2C1 - 3R1 - 3R2 - 2C2

1.3. Sub-test B: The standard serial positioning of each question within the question string is as follows:

I1 - I2 - SR - 1C1 - 1R3 - 1R4 - 1C2 - 2R3 - 2R4 - 2C1 - 3R3 - 3R4 - 2C2

1.4. Each relevant question presentation is compared against the most responsive comparison question positioned immediately preceding or following it. For example, for Sub-test “A” above, relevant questions 1R1 and 1R2 may be compared against either 1C1 or 1C2. For Sub-test “B” above, relevant questions 3R3 or 3R4 may be compared to either 2C1 or 2C2.

1.5. Test Data Analysis. The three TES decision outcomes that can be rendered are Significant Response (SR), No Significant Response (NSR) and NO. The decision outcomes are predicated on vertical and horizontal spot analysis totals.

1.5.1. The analysis spots for sub-test “A” are relevant questions 1R1, 1R2, 2R1, 2R2, and 3R1 and 3R2.

1.5.2. The analysis spots for sub-test “B” are relevant questions 1R3, 1R4, 2R3, 2R4, and 3R3 and 3R4.

1.5.3. For a NSR opinion, each overall relevant question score (i.e., the sum of the three askings of each of the two relevant questions) must be positive (i.e., >0) with a combined overall horizontal sub-test score of a plus four or greater.

1.5.4. A minus three or less (i.e., -3, -4) for any overall relevant question score or an overall horizontal sub-test score of minus four (-4) or less will result in an opinion of SR.

1.5.5. Any other combination of scores for either the overall question score or overall sub-test score is considered NO.

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## GLOSSARY

### Air Force Modified General Question Test (AFMGQT)

A modified version of the Army MGQT that falls within the category of comparison test formats. It includes a sacrifice relevant, relevant, comparison, and irrelevant questions. This particular format allows for a two, three or four relevant test that addresses multiple facets of a specific issue. Variations of the AFMGQT may be used to test multiple issues for personnel screening and source validation.

### Amplitude

The physiological activity reflected in a PDD waveform/tracing occurring between response onset and response peak (highest level from pre-stimulus baseline). Magnitude of a physiological response.

### Analysis spot

The specific location, or applicable relevant question on a PDD chart, where the spot analysis concept is employed. An analysis spot includes a relevant question and applicable comparison question(s).

### Artifact

An artifact is a change in a physiological pattern not attributable to stimulus (question presentation) or recovery.

### Baseline

The physiological level at which an examinee's system is during stimulus onset. The term tonic level is often used interchangeably with the term baseline. A baseline is subject to change, irrespective of whether a stimulus has been applied or not.

### Baseline arousal

Term used in PDD to characterize a marked upward shift in the respiratory, electrodermal, or cardiovascular waveforms. These shifts represent physiological responses to sensory or cognitive stimulation. Baseline arousals do not always occur during deception; however, when they are observed they can be indicative of deception. Some baseline arousals are relatively short-lived, while others can continue for much longer.

### Blocking

Respiration pattern wherein the examinee discontinues respiration at or near the end of the expiratory segment of the respiration cycle.

### Blood pressure

The pressure blood exerts against the walls of the arteries, usually measured in millimeters of mercury. PDD examiners evaluate relative blood volume changes, as current polygraphs are not capable of providing absolute blood pressure measurements.

### Blood volume

Quantity of blood in an organ or limb, usually recorded as relative increases or decreases in the circumference of the affected area or size of blood vessels. Changes in blood volume are mediated by local, neural, and humeral mechanisms, such as the shunting of blood to the major muscle groups during sympathetic nervous system activations. Traditional PDD methods use changes in blood volume for diagnostic purposes rather than blood pressure per se.

### Brachial artery

Major blood vessel of the upper arm that receives blood from the aortic arch via the subclavian and axillary arteries. Traditionally, the blood pressure cuff is placed around the upper arm and inflated to partially occlude the brachial artery. Sensors placed over the artery transduce the various Korotkoff sounds produced by blood flowing through the partially occluded artery. This is the preferred placement site for the blood pressure cuff in PDD.

### Bracketed relevant question

A question string wherein a relevant question has a comparison question that precedes and follows it and either comparison question may be used for evaluation against the relevant question.

### Cardiograph

General term, often abbreviated cardio, applied to any recording of cardiovascular activity. In PDD, the use of a blood pressure cuff to monitor relative arterial blood pressure and pulse wave changes is more precisely described as sphygmography (recording arterial pulse waveforms) or occlusion plethysmography (recording size or volume changes of a body part that is partially occluded). While the term cardiograph is not incorrect in this context, it lacks precision in



denoting the actual phenomenon being recorded in PDD. Cardiograph in the psychophysiological and medical literature most often denotes the electrocardiograph.

### Cardiosphygmograph

An alternate term for a device that records the pulse wave and relative blood volume waveform used in PDD. While the term cardiosphygmograph was common parlance in the 1930s through 1950s, it is used less frequently today even though it is more precise than the current expression, cardiograph or its abbreviated counterpart, cardio.

### Cardiovascular sensor

One of the three types of sensors routinely used in the conduct of a PDD examination. The cardiovascular sensor monitors relative blood volume and pulse rate. The standard cardiovascular sensor is the blood pressure cuff assembly, consisting of an arm cuff, manometer, and connecting tubing (sphygmomanometer).

### Cardiovascular waveform

The display of physiological patterns of the examinee's relative blood volume and pulse rate.

### Channel

Any one of the four sensor inputs used to monitor and record activity of the respiration, electrodermal and cardiovascular system.

### Chart

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

### Comparison question

A question designed to produce a physiological response. The physiological responses of the comparison questions are compared to the physiological responses of the applicable relevant questions. The probable and directed lies are the two types of comparison questions utilized within the federal government.

#### --Directed-Lie Comparison (DLC)

A comparison question that addresses 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. The Test for Espionage and Sabotage (TES) employs DLC questions.

#### --Probable-Lie Comparison (PLC)

A question 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 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.

Comparison question technique. Refers to a family of testing formats whereby values are assigned to various analysis spots based upon comparisons between relevant and comparison questions. The two types of comparison questions that are principally used in the Federal government are the PLC question and the DLC question. The ZCT and MGQT employ the comparison question technique; however, the formats (structure) are different, yet they both use PLC questions. The TES also employs the comparison question technique; however its format is unique and it uses DLC questions.

Comparison test format

An umbrella term for standard testing formats that use a variation of the modified general question test.

Conductance

Capacity of a material to permit the flow of electrical current. In electrical terms, conductance equals the current flow between two points divided by the voltage difference between those same two points. A related measure, resistance, is the reciprocal of conductance. Skin conductance is a common measure used in PDD.

Countermeasure

Any action(s) taken to affect a PDD examination outcome by tactical employment of behaviors, movements, medication, or cognitive processes.

Computerized polygraph

A computerized diagnostic instrument capable of monitoring, recording, storing, and analyzing respiratory, electrodermal, and cardiovascular activity.

Data collection phase

This is the second phase of a PDD examination and begins with the collection of the first chart. When a conclusive series is conducted, the data collection phase ends when test data analysis (the third phase) begins.

Deception Indicated (DI)

An opinion which indicates that an analysis of the PDD charts revealed the physiological responses to the relevant question(s) is indicative of deception.

Dicrotic notch

A regular feature of the pulse wave. It is generated by the closure of the aortic valve and marks the end of systole and the beginning of diastole. It has not been found to be a reliable diagnostic feature in PDD.

DACA (Army) Modified General Question Test (MGQT)

A modified version of the John Reid technique that falls within the category of comparison test formats. This particular technique was modified by the U.S. Army Military Police Polygraph School in the late 1960s and it was called the Army MGQT. It includes relevant, comparison, and irrelevant questions and addresses multiple facets of a specific issue. This polygraph technique incorporates a mixed chart.

### Duration

Duration is the amount of time that elapses from response onset to when the response returns to the pre-stimulus tonic level or establishes a new tonic level in the ED or CV tracing, or recovery begins in the respiratory tracing.

### Eccrine glands

One of two types of sweat glands, the eccrine glands influence electrodermal activity as monitored in PDD. They are found throughout the skin surface of the body, but in highest concentration on the palms, soles, and axillae (armpits). The primary function of the eccrine glands is thermoregulation; however, emotional stressors, mainly on the palms and soles, also produce eccrine sweat.

### Electrodermal activity recovery phase

The physiological activity displayed in an electrodermal activity waveform that occurs between the highest peak and subsequent return to the pre-stimulus or newly established baseline.

### Electrodermal activity rise

Physiological activity displayed in an electrodermal waveform beginning with response onset and ending at the peak.

### Electrodermal Activity (EDA)

All exosomatic and endosomatic changes in the electrical properties of the skin.

Electrodermal Activity (EDA) Sensor. One of the three types of sensors routinely used in the conduct of a PDD examinations. The EDA sensor monitors skin resistance or skin conductance (instrument dependent) obtained through exosomatic recording with a galvanograph component. The standard EDA sensor is a set of finger electrodes with connecting wiring or silver-silver chloride pads with sensors.

### Electrodermal Activity (EDA) Waveform

The display of physiological patterns of either skin resistance or skin conductance obtained through exosomatic recording with a galvanograph component.

### Electrodermal Response (EDR)

Reaction of skin measured by changes in its electrical properties, including skin resistance (SR), skin conductance (SC), and skin potential (SP).

### Endosomatic

Generated from within the body. An example of an endosomatic measure is skin potential because it reflects the voltage differences between two electrodes on the skin surface; bioelectricity is generated by the neurons of the dermis. Similarly, bioelectricity is generated by neurons in the brain and the heart resulting in the EEG and ECG signals, respectively.

### Examination

A process that encompasses all activities that take place between a PDD examiner and an examinee during pretest, data collection, test data analysis, and posttest phases of a PDD examination.

### Examiner

Someone who has successfully completed formal education and training in conducting PDD examinations and is either authorized or formally certified, by the examiner's agency, to conduct such examinations.

### Excessive noise

Noise in a physiologic tracing that reaches a level that disrupts or prevents the data from being used for diagnostic purposes. Excessive noise may be isolated to a single recording channel or all channels.

### Exclusionary comparison question

Comparison questions that attempt to achieve a clear line of demarcation, from events surrounding the relevant issue, by using time, place, or category separation.

### Exosomatic

Generated from outside the body. Examples of exosomatic measures are skin conductance and skin resistance because they are determined by the application of external electrical current to the skin.

### Fight, Flight, Freeze (F3)

Three stereotypic behavioral responses to threat; sometimes called simply F3. The physiological responses concomitant to these behaviors are involved in mobilizing the body's resources for an expenditure of energy and narrowing attentional focus to the features of the threat. This preparation activity of the body explains the pattern of arousal responses that are recorded during PDD. Some researchers also believe that the shift in attentional focus accounts for the differential responses elicited by different types of 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.

### Galvanic Skin Response (GSR)

A superseded term replaced by the term electrodermal activity (EDA). GSR is an exosomatic measure of the changing electrical resistance of skin. GSR is sometimes erroneously called Galvanic Skin Resistance or Galvanic Skin Reflex. The current term is skin resistance.

Galvanograph

Polygraph component responsible for producing the graphic recording of skin resistance.

General Nervous Tension (GNT)

Recorded physiological patterns that suggest the examinee's baseline arousal is high. This arousal is not indicative of deception in itself. GNT is sometimes indicated by very fast heart rates, unusually labile electrodermal activity, and uneven respiration cycles.

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.

Heart rate

Rapidity of ventricular contractions, usually measured in beats per minute. It is one index of physiological arousal. Recent research indicates that after stimulus onset, cardiac arousal takes the form of an immediate decrease in heart rate. Heart rate and the interbeat interval are reciprocals of one another.

Holding

A pattern sometimes seen in the respiration waveform in which the examinee discontinues respiration at or near the respiratory peak. Holding is differentiated from a typical apnea in that apnea most often occurs near the end of the expiratory segment of the respiration cycle.

Homeostasis

Complex interactive regulatory system by which the body strives to maintain a state of internal equilibrium. The term resting state, pre-stimulus baseline, and homeostasis are used interchangeably.

Hyperventilation

Increase in rate and depth of respiration. Physiologic consequences include increased pulmonary ventilation and decreased carbon dioxide concentrations. Hyperventilation is not a diagnostic feature used in the evaluation of the respiration waveform.

Inhalation/exhalation ratio

The duration of inhalation segment of the respiratory cycle compared with that of exhalation segment. Normally the ratio is about 1:2 in a resting human and changes during stress. Changes in I/E ratio are a diagnostic feature or criterion in PDD and were first reported by Benussi in 1914.

Irrelevant question (in comparison question formats)

A question that is designed to be a non-emotion invoking question used to absorb orienting responses and assist in establishing an examinee's physiological baseline. They should be neutral questions and must be unrelated to the matter under primary investigation.

Latency

Refers to the period of time from stimulus onset to response onset. An examinee may respond within the prescribed response onset window for each recording channel or outside of those windows.

Law of initial values

The extent to which an individual is able to respond physiologically is determined by his/her body's physiological state at stimulus onset. An individual's potential response range is greater when in a state of homeostasis than when in a heightened state of arousal.

Modified General Question Test (MGQT)

A category of comparison test formats that: 1) includes relevant, comparison, and irrelevant questions, 2) may include a sacrifice relevant question, 3) addresses multiple facets of a specific issue, and 4) incorporates a mixed chart. Various DoD and federal agencies utilize selected modified versions of the MGQT in specific issue testing. Variations of the MGQT may also be used to test multiple issues for personnel screening and source validation.

No Deception Indicated (NDI)

An opinion that 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 that indicates the examiner cannot render a conclusive opinion of DI or NDI based upon the evaluation of physiological data on a given set of charts.

Non-specific response

A response that occurs during the collection of PDD data that is not attributable to an applied stimulus. The term random response is also used interchangeably with non-specific response.

No Significant Response (NSR)

This is one of three diagnostic opinions used in various screening contexts. It is equivalent to the term NDI, which is the term of reference in criminal specific issue testing.

Numerical Test Data Analysis (TDA)

Systematic assignment of numerical values to physiological responses, and decision rules that are based on the sums of those numerical values. The DACA Numerical Evaluation Scoring System uses two numerical evaluation scales: The three- and seven-position scale.

Orienting response

The type of response that is expected to occur as a result of a novel stimulus or the type of response expected at the beginning of a polygraph chart when the examinee is orienting to the verbal stimulus during the data collection process.

Overall vertical spot total

The sum of all subtotals for a specific relevant question spot in one series of a comparison question examination.

Parameter

Term used in PDD to denote a single physiological data channel (e.g., pneumograph). The term parameter and channel are used interchangeably.

Peak

Refers to the highest point a waveform achieves following response onset.

Phasic response

A short-term change in physiological activity following question presentation. Typically, this response has a relatively rapid onset and may return to the pre-stimulus baseline or establish a new baseline within a period characteristic of the response system.

Plethysmograph

Device that measures changes in blood volume in a part of the body. Two common types of plethysmographs are occlusion (use of inflatable cuff to restrict venous return while measuring volume changes indirectly via pressure or resistance) and photoelectric (use of infrared light emitter-collector diode pair that measures volume changes indirectly by directing light into the skin and detecting its reflection back).

Polygraph

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

Premature Ventricle Contraction (PVC)

Term loosely applied to any premature heart contraction, but more precisely, it is a ventricular contraction initiated by an ectopic focus in the ventricles and not the atria. During a PVC, the normal sinus rhythm is interrupted and a compensatory pause results. Sometimes referred to as extra-systolic beat.

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, the skills and qualifications for conducting PDD examinations.

Pulse pressure

The arithmetic difference between the systolic and diastolic blood pressures.

Question string

All of the questions that appear on a PDD chart between test commencement (i.e., X) and test termination (i.e., XX).

Rebound

A recovery that drops below the pre-stimulus baseline line and subsequently returns to the pre-stimulus baseline. Rebound may be attributable to physiology and instrumentation.

### Recovery

A deviation in a PDD waveform attributable to a physiological phenomenon occurring as a compensatory action after a response or an artifact (i.e., return to homeostasis or pre-stimulus baseline).

### Relevant question

A relevant question pertaining directly to the matter under investigation or to the issue(s) for which the examinee is being tested. Relevant questions consist of primary, secondary, evidence connecting, and guilty knowledge questions.

### Relevant question (primary)

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

### Relevant question (secondary)

This question tests the examinee's indirect or collateral involvement in the offense or matter under investigation. Secondary relevant questions address involvement (i.e., help, plan, or participate), an element (e.g., see, hear, or know), nature or location of evidence (i.e., Do you know where. . .), and physical acts (e.g., cut, break, splice, tear) that support the primary issue.

### Respiration apnea

A temporary disruption of the respiratory cycle (cessation of breathing). If this temporary cessation of breathing occurs during or near the end of the respiratory cycle, it is defined as blocking. Apnea is the ultimate manifestation of respiratory suppression.

### Respiration Line Length (RLL)

A means of evaluation introduced by Howard Timm. RLL refers to the linear measurement of the respiration waveform over a specified period of time.

### Respiratory sensor

One of the three types of sensors routinely used in the conduct of PDD examinations. Normally two respiratory or pneumograph chest assembly sensors monitor the mechanics of abdominal and thoracic breathing or ventilation. The standard pneumograph chest assembly is comprised of a convoluted rubber tube, connecting tubing, and a beaded chain or other type of fastener that allows placement on the examinee.

### Respiratory Sinus Arrhythmia (RSA)

A cyclical rising and falling in the cardiograph waveform that is synchronous with respiratory activity. Although this same pattern may be created by physical movement contamination (i.e., if the arm with the blood pressure cuff is placed too close to the body and consequently moves in synchrony with chest wall expansion), a vagus effect is distinct. Parasympathetic innervation (through branches of the vagus nerve) driving both respiratory and heart rate activity may be so prominent as to induce this characteristic synchronous wave in the cardiograph tracing.



Respiratory waveform

The display of physiological patterns reflective of an examinee's breathing activity. The respiratory waveform consists of inhalation and exhalation cycles.

Response

A physiological change to an applied stimulus that may be a phasic response or Peak-of-Tension (POT) trend response.

--Phasic response

A short-term change in physiological activity following stimulus presentation. Typically, this response has a relatively rapid onset and may return to the pre-stimulus baseline or establish a new baseline within a period characteristic of the response system.

--POT trend response

Chapter 2 A change in the trend of physiological activity typically associated with the presentation of one stimulus of greater significance to the examinee than other stimuli presented in the same test.

Response onset

The first indication of physiological change from the pre-stimulus level to an applied stimulus. For a response to be considered timely, response onset must occur within the respective response onset windows designated for each recording channel.

Response onset window

Refers to the traditional time period, from stimulus onset, where one would predict a physiological response to occur in order for that response to be deemed timely. Response occurring beyond the designated response onset window for each recording channel, although not generally considered timely, may nevertheless be evaluated if consistency (latency) is demonstrated.

Resting state

An informal term that refers to an individual's homeostatic state. This term is often used interchangeably with tonic level, homeostasis, and state of equilibrium.

Rise time

The period of time from response onset to the peak of a waveform.

Sacrifice relevant

A sacrifice relevant question is the first question in a question string, involving certain testing formats, that is related to the relevant issue(s). The purpose of the sacrifice relevant question is to prepare the examinee for introduction of the relevant questions. Sacrifice relevant questions are not scored.

Serial position

The position of a question within a question string.

Seven-position scale

One of two semi-objective numerical evaluation scales taught by DACA. The seven-position scale enables assigning any of the following values based upon comparisons between relevant and comparison questions: -3, -2, -1, 0, +1, +2, +3. By convention, negative values represent greater physiological response to relevant questions, while positive values indicate greater response to comparison questions. A zero usually indicates equal or no responses to either the relevant or comparison questions, or that the evaluation spot does not meet minimum standards for interpretation. Each testing format has an assigned numerical threshold that results in one of three decision outcomes.

Signal value

The perceived salience or extent to which an examinee is affected by a stimulus. External significance is assigned to a question when it appears to differ from others based on appearance (i.e., is much longer or is read in a louder tone of voice). Internal significance is assigned to a question because of the examinee's perception of the question's scope or content. The objective of a CQT examination is to make the external significance of relevant and comparison questions appear equal, and for their internal significance to vary. An innocent examinee would be expected to generate higher internal significance for the comparison questions, whereas the relevant questions would hold higher internal significance for the deceptive individual.

Significant Response (SR)

This is one of three diagnostic opinions used in various screening contexts. It is equivalent to the term DI in criminal specific issue testing.

Skin Conductance (SC)

General term for skin conductance level and skin conductance response. Both are recorded exosomatically. In recent years, some PDD instrumentation has moved away from skin resistance measures toward skin conductance because skin conductance measurements are linearly related to the number of active sweat glands at the recording site. Sweat gland activity is controlled, in part, by the sympathetic nervous system.

Skin Resistance (SR)

General term for skin resistance level and skin resistance response. Both are recorded exosomatically. Skin resistance was the primary means of detecting electrodermal activity throughout much of PDD history until the introduction of computerized instrumentation. Skin conductance is now the preferred measure.

Sphygmomanometer

A device consisting of a pressure cuff connected to a manometer (pressure sensor) that is used for the indirect measurement of blood pressure. The pressure cuff is placed around a large artery (i.e., brachial artery) and then inflated until the artery is completely occluded. Cuff pressure is gradually released while sounds (Korotkoff sounds) caused by blood passing through the partially occluded artery are monitored. The manometer is also monitored to determine the pressures at which these sounds occurred. The pressure at which sound is first heard is termed systolic pressure, while the pressure at which sound is last heard is termed diastolic pressure. Typically, a stethoscope is placed distal to the occluded artery to enable a person to hear the

Korotkoff sounds. This is the auscultatory method since blood pressure is determined while listening to sounds produced within the body.

### Spot

A specific location, or applicable relevant question, within a question string where the spot analysis concept is applied.

### Spot analysis

A fundamental concept for assigning values, by individual recording channel, based upon comparisons between a relevant question and the applicable comparison questions. The test data analysis rules, for a particular testing format, dictate which relevant and comparison question(s) to use for analysis.

### Stimulus

Any oral stimulus presented by the examiner to the examinee during test data collection. Typically refers to a reviewed question that is presented to the examinee during a test.

### Stimulus (stim) identifier

A stimulus or stim identifier is a test data notation, usually consisting of Arabic numbers, letters, or alphanumeric characters, which is applied directly on the PDD chart. The stimulus identifier indicates the specific stimulus applied by the examiner during the data collection phase.

### Stimulus (stim) mark

A stimulus or stim mark is a test data notation indicated by a vertical mark on PDD charts. A pair of stim marks denotes the exact location on the PDD chart of a specific applied stimulus onset and stimulus end.

### Stimulus end

During data collection, stimulus end is the last syllable spoken by the examiner when a stimulus is presented.

### Stimulus onset

During data collection, stimulus onset is the first syllable spoken by the examiner when a stimulus is presented.

### Symptomatic question

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

### Test data

Physiologic recording of responses of the examinee in response to stimuli.

### Test data analysis

Test data analysis is the systematic process by which a particular set of decision rules is applied to the evaluation of diagnostic features and other physiological data resulting in one of three outcome decisions.

### Test data notations

Notations used to indicate events that occur during the collection of a chart.

### Test for Espionage and Sabotage (TES)

Multiple-issue testing format employed by some U.S. Government agencies for screening purposes. The TES uses a repeated series of relevant and directed-lie comparison questions, and the conventional 7-position scoring system.

### Three-position scale

Abbreviated application of the seven-position scale for PDD test data analysis. The major difference is that the range of values for each question pairing comparison is from minus one (-1) to plus one (+1), rather than the range of minus three (-3) to plus three (+3) in the seven-position scoring system.

### Tonic level change

A relatively slow adjustment in the tonic (baseline) level that may occur over a significant period of time.

### Tonic level

An examinee's level of physiological activity occurring prior to stimulus onset. This is sometimes referred to as the resting or baseline activity level. Tonic level describes a person's physiological activity when resting.

### Vagus roll

Undulations in the pulse wave amplitude that are 2-4 seconds after the corresponding respiratory activity.

### Window-of-evaluation

A term that refers to the onset and period in which data is used for evaluation purposes when applying RLL. Comparative responses, in the respiration channel, are evaluated using identical time windows. The default time window is predicated on the comparative response displaying the most significant response duration. For example, if a comparison question has an RLL response of five seconds, and the relevant question has eight seconds of response, the window-of-evaluation for both comparative questions defaults to eight seconds.

### Waveform

A particular physiological pattern that is studied for its diagnostic value. A waveform is also a mathematical representation of a wave, especially a graph of deviation at a fixed point versus time. The terms waveform and tracing are used interchangeably in PDD.

### You-Phase Zone Comparison Test

A standardized specific issue test that addresses a single issue and uses only two relevant questions.

Zone Comparison Test (ZCT)

A ZCT is a PLC question technique designed to resolve a specific incident. The ZCT uses a sacrifice relevant question, irrelevant questions and symptomatic questions in designated positions. Relevant questions are compared in spots to designated comparison questions.

## APPENDIX I

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