

Results of the OTA Survey of Federal Government Polygraph Testing

Introduction

In May 1983, OTA surveyed selected Federal Government agencies including the Departments of State, Defense (DOD), Treasury, and Justice, Central Intelligence Agency (CIA), Office of Personnel Management, and U.S. Postal Service (USPS), with respect to their use of polygraph testing. The survey requested detailed information about agencies' current and past use of polygraph testing and research conducted or planned by the agency. The request for information was sent to all Federal agencies believed to conduct polygraph examinations. A follow-up survey was sent, in July 1983, with respect to use of polygraph testing in unauthorized disclosure investigations.

Results of the survey are described below. All agencies responded to OTA'S inquiry; however, the CIA considers all such operational and research information to be classified. In addition, the results do not include information from the Customs Service (a Department of the Treasury component), Department of Health and Human Services, and Tennessee Valley Authority, which conduct a limited but unknown number of polygraph examinations. OTA supplemented the survey results with site visits to polygraph facilities at the U.S. Army, National Security Agency (NSA), and Federal Bureau of Investigation (FBI), and discussions with officials from several Federal agency polygraph programs.

Number of Polygraph Examinations

For 1982, the agencies reported conducting a total of **22,597** individual polygraph examinations. Of this total, 18,301 examinations were conducted by DOD component agencies, including the Army, Navy, Air Force, Marines, and NSA. Individual agency totals are shown in table B-1. NSA conducts the largest number of examinations, 43 percent of the total. Next, in terms of number of tests, is the Army Criminal Investigation Command, followed by the Air Force Office of Special Investigations, Naval Investigative Service, and FBI. The NSA and the Air Force have steadily increased the number of examinations conducted each year during the 1980-82 period, while the number of polygraph examinations appears to be relatively stable over this period in other agencies.

However, long-term trends in the number of polygraph examinations show a substantial increase since 1973. In fact, the total number of examinations in 1982 was more than triple the **1973 total (22,597 examinations)** in 1982 compared to 6,946 in 1973) and actually surpassed the previous known high (19,796 in 1963, excluding NSA). As illustrated below, the FBI, Air Force, and NSA experienced the largest absolute increases in polygraph examinations over the 1973-82 period.

Agency	Number of examinations conducted		
	Fiscal year 1963	Fiscal year 1973	Fiscal year 1982
Army CIC	4,400	2,028	3,731
Army ISC	8,094		277
Navy	1,200	665	1,337
Air Force	1,912	482	3,019
Marines	812	62	263
NSA	Not available	3,081	9,672
Other DOD	140	6	0
DOD subtotals	16,558	6,325	18,301
FBI	2,314	79	2,463
DEA			211
SS	65	50	714
BATF			256
USPS	338	485	652
Other	521	7	0
Totals	19,796	6,946	22,597

SOURCE Data from the Office of Technology Assessment 1982 1973 and 1963 data from U.S. Congress, House of Representatives Committee on Government Operations, reports, *The Use of Polygraphs and Similar Devices by Federal Agencies, 1976* and *Use of Polygraphs as Lie Detectors by the Federal Government, 1965*

Number of Polygraph Examiners

For **1982**, agencies reported employing a total of 209 polygraph examiners. Of these examiners, the majority (130) were employed by DOD component agencies. Individual agency totals are shown in table B-1. The U.S. Army has the largest number of examiners, followed closely by the FBI, and then by the U.S. Air Force and NSA. The reason that the number of examiners is not directly related to the number of examinations is that examinations are conducted by agencies for different purposes and under different conditions. For example, NSA examinations are conducted for screening purposes in a central location; in contrast, Army examinations are conducted primarily as part of criminal investigations, and examiners frequently travel to sites within a geographic region.

Table B-I.—Number of Polygraph Exams and Examiners

Agency	Number of polygraph exams			Number of examiners		
	1980	Fiscal year 1981	1982	1980	Fiscal year 1981	1982
Department of Defense:						
Army Criminal Investigation Command	3,977	3,832	3,731	39	42	44
Army Intelligence and Security Command	230	260	279	9	9	12
Naval Investigative Service.	1,317 ^a	1,185 ^a	1,337 ^a	11 ^a	12 ^a	14 ^a
Air Force Office of Special Investigations	1,474 ^a	1,485 ^a	3,019 ^a	26 ^a	29 ^a	28 ^a
Marines	376 ^a	245 ^a	263 ^a	8 ^a	6 ^a	6 ^a
National Security Agency	5,676 ^a	7,418 ^a	9,672 ^a	13 ^a	30 ^a	26 ^a
Subtotals	13,050	14,425	18,301	106	128	130
Department of State	Does not conduct polygraph exams					
Department of Justice:						
Federal Bureau of Investigation	2,121	2,162	2,463	NA	NA	40
Drug Enforcement Administration.	230	200	211	NA	NA	14
Department of Treasury: ^b						
Secret Service	NA	466	714	NA	NA	16
Bureau of Alcohol, Tobacco and Firearms	176	254	256	4	4	4
U.S. Postal Service	714	725	652	NA	NA	5
Central Intelligence Agency.	Does conduct polygraph exams but specific operational information is classified					
Office of Personnel Management	Does not conduct or use polygraph exams					
Totals	16,291	18,232	22,597			209

^a-Calendar year
^b-Excludes Customs Service.
 NA = Not available

Other Federal Agency Polygraph Users

The Federal agencies listed in table B-1 are the primary users of the results of polygraph tests conducted by their personnel. However, these agencies reported that during 1980-82, polygraph examinations were also conducted by their staff for other Federal agencies, both those with polygraph capability and those without. A listing of the number of examinations conducted for agencies that do not employ their own polygraph staffs follows:

Exams conducted by	Exams conducted for	Number of exams 1980-82
Army, CIC	Department of State	26
	Internal Revenue Service	1
	Defense Intelligence Agency	1
	Department of Defense (other)	14
Army, ISC	Defense Intelligence Agency	7
	Coast Guard	1
Navy	General Services Administration	1
	Department of State	2
Air Force	Defense Investigative Service	16
	Defense Intelligence Agency	21
	Coast Guard	1
Marines	Department of State	1
	None	
YSA	DOD components	Data not available
FBI	Bureau of Prisons	39 (1982)
	Other Agencies	10 per year

DEA	Immigration and Naturalization Service	2 (1981-1982)
	U.S. Marshall's Office	3 (1981-1982)
	Department of State	2 (1981-1982)
	Internal Revenue Service	1 (1981-1982)
Secret Service	Internal Revenue Service	Specific data not available, but total is less than 8 percent of all
	U.S. Attorney's Office	1 (1981-1982)
	Department of Treasury	
	Department of Agriculture	
	Federal Reserve Bank	1 Secret Service exams
BATF	Other Agencies (very limited)	Data not available
USPS	Internal Revenue Service	4
	U.S. Marshall's Office	1
	U.S. Congress	1

The polygraph use by these other agencies represents a very small percentage of total Federal agency use.

Purpose of Polygraph Examinations

As shown in table B-2, with the exception of NSA, over two-thirds of Federal agency use of the polygraph is for criminal investigative purposes. In the major Federal polygraph user agencies, such as the Army, Navy, Air Force, and FBI, over 90 percent of polygraph use is for criminal investigations, for example in the verification of information provided by suspects, victims, and witnesses. The one exception, for which data are available, is NSA. About two-thirds of NSA poly-

Table B-2.—Purpose of Polygraph Exam

		Criminal investigation	Counter intelligence	Intelligence	Other
Department of Defense:					
Army Criminal Investigation Command					
	1980	3,968	—	—	9 polygraph examiner applicants
	1981	3,820	—	—	12 polygraph examiner applicants
	1982	3,713	—	—	19 polygraph examiner applicants
					Personnel security Limited access Polygraph applicants
Army Intelligence and Security Command					
	1980	NA	44	NA	0 58 5
	1981	NA	33	NA	9 34 1
	1982	NA	78	NA	58 62 2
Navy					
	1980a	1,209	30	78	
	1981a	1,049	50	86	
	1982a	1,210	45	82	
Air Force					
	1980a	1,296	NA	NA	
	1981 *	1,298	NA	NA	
	1982a	1,750	NA	NA	
Marines					
		NA	—	—	Polygraph examiner applicants
National Security Agency					
		NA	NA	NA	Applicant screening
Department of Justice:					
Federal Bureau of Investigation					
	1980-82	6,038	474	—	234 personnel security
Drug Enforcement Administration					
	1980-82	449	—	—	192 internal investigations
Department of the Treasury:					
Secret Service					
	1982	562	—	65	59 other agency 16 bond 12 inspection
Bureau of Alcohol, Tobacco and Firearms					
	1980-82	686	—	—	
U.S. Postal Service					
	1980-82	2,091	—	—	

*Calendar Year

NA Not available

graph examinations are for applicant screening; i.e., for use in personnel security evaluations of applicants for employment. In 1982, OTA estimates that NSA conducted about 6,700 applicant screening polygraph exams. No other Federal agency, except CIA, conducts routine applicant screening polygraph exams. CIA, as noted above, did not provide information on the purpose of their exams. However, public information available from a report of the Permanent Select Committee on Intelligence, U.S. House of Representatives (173), indicates that the CIA utilizes polygraph tests as part of its applicant screening.

The following agencies also conduct a small number of polygraph exams for counterintelligence and/or intelligence purposes (see table B-2 for estimates): Army Security and Intelligence Command, Navy, Air Force, NSA, FBI, and Secret Service. Other miscellaneous purposes for polygraph exams are listed in table B-2.

Use of Polygraph in Unauthorized Disclosure Cases

Polygraph exams are used by several Federal agencies in connection with the investigation of the unauthorized disclosure of sensitive or classified information; however, such use at present is limited.

Federal agencies responding reported the following polygraph use in unauthorized disclosure cases over the 1980-82 period:

Agency	Number (If polygraph used in unauthorized disclosure cases over the 1980-82 period)
Arm: CIC	1
Army ISC	78
Navy	112
Alr FO(e	0
Marine<	0
ISS/4	0
State Department	0
FBI	33
DEA	11
Secret Service	0
BATF	0
IS/S	0

For agencies providing detailed statistics, the results of the exams were as follows:

	Deceptive	Not deceptive	Inconclwve	No op mon	Deceptive confirmed
Army, ISC	0	1	0	0	0
Navy	26	51	1	0	18
Air Force	26	85	1	0	21
FBI	16	10	0	0	14
DEA	2	31	0	0	Data not available
Secret Service	0	11	0	0	0

Confirmation of deceptive exam results was primarily though a pre- or post-test confession or admission. Very few of the not deceptive test results were confirmed. Except for the FBI, information was not available on what action, if any (e.g., administrative sanction, removal of security clearance, criminal prosecution), was taken based on the deceptive exam results. The FBI reports that in 12 closed cases, deceptive examination results contributed (at least in part) to 3 convictions, 1 dismissal, 1 disciplinary action, 3 resignations, 3 censures, and 1 voluntary retirement.

Polygraph Examiner Training and Techniques

Federal agencies reported a high degree of consistency in the training of and techniques used by Federal polygraph examiners. All agencies, except NSA, reported that examiners are required to be graduates of the 12-week U.S. Army Polygraph Training Course at Ft. McClellan, Ala. (a component of the U.S. Army Military Police School). NSA requires examiners to be graduates of either the U.S. Army School or the Maryland Institute of Criminal Justice. All examiners are required to have at least 2 years investigative experience. USPS requires **3 years investigative** experience, the Secret Service requires 4 years investigative experience, and the Navy, FBI, and BATF require 5 years. In addition, all examiners are required to have an undergraduate degree from an accredited college. The Drug Enforcement Agency (DEA), Secret Service, and BATF require examiners to participate in an advanced or refresher course every year; DOD components and the FBI require such participation every **2 years**; and USPS requires such participation every 3 years. All examiners are required to complete an internship or probationary period after graduation from polygraph school.

With respect to examiner technique, examiners at all agencies reporting except NSA make primary use of one or more control question techniques. The modified general question and zone of comparison are the most frequently used control question techniques. Examiners at most agencies also use the peak of tension technique (a concealed information technique). At NSA, the relevant/irrelevant technique is the most fre-

quently used. The Army Intelligence Command, FBI, DEA, Secret Service, and BATF also use the relevant/irrelevant technique to a limited extent. All agencies reported that examiners use a standardized numerical scoring system for interpreting results of exams conducted with a control question technique. For exams conducted with the relevant/irrelevant technique, the examiner looks for significant, consistent reactions. See chapter 2 for further discussion of question techniques.

Methods of Quality Control

All Federal agencies reported that essentially the same polygraph instruments and physiological measures are employed in conducting polygraph examinations. All Federal agencies use primarily Stoelting and Lafayette polygraph instruments (purchased from private manufacturers). The physiological measures include respiration (breathing), perspiration (galvanic skin response), and cardiovascular (blood pressure and pulse rate).

Agencies also indicated that all polygrams (charts) are reviewed independently by a supervisor and/or a polygraph coordinator at a headquarters location. This quality control review includes checking the original examiner's chart interpretation as well as reviewing question construction and other aspects of the exam. Agencies vary in the specifics of their quality control process, but any disagreement between the chart interpretations of the original examiner and quality control examiner usually requires a reexamination.

Length of Polygraph Examinations

Agencies reported that the length of polygraph examinations ranges from about 1.5 to 4 hours, as indicated in table B-3.

Results of Examinations and Subsequent Confirmation

The results of polygraph examinations vary widely among Federal agencies. The number of deceptive examination results ranges from about 10 percent of total exams (for USPS in 1981) to about 69 percent (Army Criminal Investigation Command, 1980), with most agencies in the 40 to 60 percent deceptive range. See table B-3 for agency specific statistics.

Confirmation of results also varies widely, as shown in table B-4. Independent confirmation rates for deceptive exam results range from about 25 percent for the Marines to **70 to 80 percent** for the Army Criminal In-

vestigation Command, Army Intelligence Command, and Secret Service. Confirmation of deceptive exam results is primarily by examinee admissions or confessions. Confirmation of nondeceptive exam results is generally more difficult, with nondeceptive confirmation rates of less than 50 percent indicated by all agencies reporting except DEA.

Use of Polygraph Examination Results

In general, with the exception of NSA, polygraph test results are used as an investigatory tool in specific criminal, counterintelligence, intelligence, or personnel security cases. Polygraph examinations are voluntary in the sense that agencies in general are proscribed from forcing individuals to take an examination, or from penalizing or taking adverse action against individuals who refuse to take an examination. However, at NSA, where a polygraph examination is part of the preemployment security screening process for all job applicants, refusal to take polygraph examination may result in failure to be accepted for employment. Also, the FBI noted that in cases where an FBI employee is asked to take a polygraph examination but refuses, the refusal may lead to an adverse inference being drawn.

Overall, agencies were not able to provide specific information on how the results of polygraph exams were actually used, since the agency office conducting the examination is usually different from the office conducting the investigation and taking action. Statistics on use of examination results apparently are not maintained, at least not on a centralized basis. Also, the results of a polygraph examination are usually only one of several sources of information relevant to a spe-

cific investigation. In fact, agency regulations generally require that polygraph results "be used selectively as an investigative aid" and not "to the exclusion of other evidence or knowledge obtained during the course of a complete investigation" (FBI regulation 13-22.2(2), 1981).

Federal Agency Polygraph Research

Based on information provided by Federal agencies, the major past, present, and future Federal polygraph research is summarized in table B-5. Research on the polygraph instrument itself includes a 1966-67 calibration study (U.S. Army), a 1966-67 technical evaluation study (Navy under contract to National Bureau of Standards), 1969-70 and 1975-77 cardioactivity monitor studies (Air Force), a current cardioactivity monitor study (FBI), and the current 10-year instrumentation research sponsored by the Army Criminal Investigation Command and Army Security and Intelligence Command and intended to develop a new polygraph instrument utilizing state-of-the-art technology. Research on polygraph validity and reliability, broadly defined, includes a 1962 validity study (Air Force), a 1965-67 reliability study (Army Criminal Investigation), 1979-81 counterintelligence screening test validity study (Army Intelligence), and the planned 1984-85 validity and reliability study cosponsored by the FBI and Secret Service. Also, in 1976-78, the Department of Justice sponsored validity and reliability studies by university researchers David Raskin and David Lykken. Finally, both Army Intelligence and NSA are planning research on polygraph countermeasures.

Table B.5.—Selected Federal Agency Polygraph Research

		Past polygraph research	Present/future research
Department of Defense:			
Army Criminal Investigation Command	1965-67	Validation study of polygraph examiner judgments (reliability study known as "Bersh" study)	1981-90 Instrument research and development project (to develop a state-of-the art polygraph instrument)
	1968-70	Calibration study of polygraph instrument	
		Comparison of voice analysis and polygraph (U.S. Army Land Warfare Laboratory)	
		Validation and reliability study of counterintelligence screening test	1981-90 Instrument research and development project
Navy	1966-67	Technical evaluation study of polygraph instrument (under contract to National Bureau of Standards)	Planning research on polygraph countermeasure and anti countermeasures
Air Force	1962	Polygraph validity study	None
	1965	Analysis of polygraphic data	
	1969-70	Development and validation studies of cardioactivity monitor	
	1975-78	Reliability and validity studies of cardioactivity monitor	
Marines		None	None
National Security Agency.	1983	Review of scientific literature on polygraph validity, reliability and utility	1983-84 \$65,000 pilot study of effect of drugs/hypnosis/nonverbal techniques on polygraph validity
Department of Justice:			
Federal Bureau of Investigation		None	1984-85 Polygraph validity and reliability research (criminal investigatory context)
			1984 Instrumentation research (on monitoring blood pressure)
Law Enforcement Assistance Administration			
	1976-78	Raskin and Lykken studies of polygraph validity and reliability	
Department of the Treasury:			
Secret Service		Participated in Raskin study	Cooperation with planned FBI study on polygraph validity and reliability
Bureau of Alcohol, Tobacco and Firearms		None	None
U.S. Postal Service		None	None
Department of State		None	None
Office of Personnel Management		None	None
Central Intelligence Agency.	"	Classified research	Data not available