Polygraph

VOLUME 20 1991 NUMBER 2

Contents

PUBLISHED QUARTERLY

P.O. Box 1061, Severna Park, Maryland 21146

ACCURACY OF INDIVIDUAL PARAMETERS IN FIELD POLYGRAPH STUDIES

By

Michael H. Capps

Research in the field use of polygraph testing has been limited over the past several years and has not yet given us the number of in-depth studies one would hope. Researchers have varied in their approach to ascertain the validity of polygraph tests as a whole. Since the authors of studies establish the initial premise they intend to investigate, much of the data reported was aimed at answering the questions set forth in that premise. Insight into information needed for analysis was not always available. This report, however, looked at 22 studies that addressed the validity of one or more of the components utilized in field polygraph testing. Although other studies were available, deleted from this report were those which looked at one component on one chart only, or one criterion which is not representative of techniques used in the field today.

The subjects in these field studies ranged in number from ten to 122. They included examinations analyzed by the original examiner and blind chart reviews. Evaluations were conducted by rank order, global analysis, ROC, and numerical evaluation. A myriad of control question techniques were studied in this report along with relevant/irrelevant and peak of tension testing. Most studies did not contain information on false positives or false negatives, however all did provide percentages of validity based on the component(s) evaluated in the study. The reports included inconclusive rates in many instances. While some provided percentages of correct decisions for both deceptive and non-deceptive, others did not. Although inconclusive rates were provided, the validity percentages excluded inconclusive determinations. The table on the following pages demonstrates a collection of variables previously mentioned in field polygraph studies, on the accuracy of individual parameters.

Discussion

The information reflected in the matrix is not all encompassing but is used in assessing the accuracy of the individual components and therefore the overall validity of the polygraph. All available polygraph field research studies were reviewed specifically for information relating to the accuracy of individual parameters. Although the chart does not contain all details for component accuracy, the studies contained herein addressed the contributions of the individual component(s) within the respective studies.

The author is Chairman of the Board of the American Polygraph Association and a contributor of prior articles in this journal.[ed.] For copies of this article write to the APA Reference Service, P.O. Box 1061, Severna Park, MD 21146.

ACCURACY OF INDIVIDUAL PARAMETERS IN FIELD POLYGRAPH STUDIES

	% Pneumo Correct				% GSR Correct				% Cardio Correct				Techniques			Type Evaluation	
	Total	DI	NDI	INC	Total	DI	NDI	INC	Total	DI	NDI	INC	CQT	RI	POT	Numeric	Amplitude
Barland & Raskin (1974)	75				96				74				x			x	
Ben-Ishai (1962)					100								x				x
Bowling (1978)	67				98				66						x		x
Elaad (1988)	65	44	90	10	70	49	96	13					x				x
Elaad (nd)					75	50	98	11							x		
Elaad (1985) (numeric)	80	77	83		77	83	70		70	57	83		x			x	
Elaad (1985) (global)													x				x
Elaad (1988)	70	56	95		60	47	94								x		x
Elaad (nd) (experienced examiners)	92	87	100	36	79	90	62	47	71	70	73	51	x			x	
Elaad (nd) (inexperienced examiners)	89	81	96	53	80	89	71	49	68	61	74	50	x			x	
Franz (1989)													x			x	
Franz (1989)													x				computer
Guertin & Wilhelm (1954) (B&W meter)					94									x			x
Jayne (1990)													x			x	
Jayne (1990)	87				64				83				x				x
Matte & Reuss (1989) (quadri-zone only)													x			x	
Rafky & Sussman (1985) (second chart only)	94	96	91		97	95	99		98	98	97					x	
Ryan (1989)	71			41	88			54	69			49					
Slowik & Buckley(1975)	80	71	90	0	82	86	77	2	79	69	89	2	x				
Suzuki et al.(1973)					77									x			x
Winter (1936)	96	0	96	0					100	100	100	1	x				
Yamamura et. al. (1980)															x		

ACCURACY OF INDIVIDUAL PARAMETERS IN FIELD POLYGRAPH STUDIES

Type Review Blind	Type Review Orig	Type Study	% Overall Accuracy All	Guilty	N/Guilty	Overall % INC	False Pos %	False Neg %	Number Subjects
		Val.	100			26			27
X		Val.							10
X			100						100
X		Val.	75	69	84	17	16	31	72
X			81			11			98
X		Val.	77	77	77		12	12	60
X		Val.	83	77	90		5	12	60
X		Val.	80			13	12	28	40
X		Val.	86	82	91	34	5	10	100
X		Val.	84	75	93	44	4	11	100
X		Val.	99	100	97	16	2	0	100
		Val.	89	92	86	0	14	8	100
X		Val.&Rel.	94						34
X		Val.&Rel.	92	93	91	7	9	6	100
X		Val.&Rel.	83	88	87	6	13	9	100
X	X	Val. & Rel.	100 (blind examiner) 100 (original examiner)			5 5			122
X		Val.	96	96	95	6	5	4	60
X			86				31		40
X		Val.	89	85	93	0	2	15	30
X		Val.	77						30
	X	Val.	98				0	0	25
	X		89				5	20	95

A number of facts of interest can be concluded from the information derived from this review. Overall accuracy of the respiration was 81%, skin resistance 81%, and cardiovascular 76%. Although variation in component validity was not statistically significant, variation between deceptive and non-deceptive results was significant. Respiration yielded an accuracy of 71% for deceptive subjects but 93% for non-deceptive. The difference was not as great in skin resistance with the accuracy of 74% for deceptive subjects and 82% for non-deceptive subjects. The scores for cardio differed only slightly from skin resistance with deceptive subject accuracy at 72% and nondeceptive at 82%. It is important to note that the accuracy in each component for non-deceptive subjects was greater than accuracy for deceptive subjects. Inconclusive rates among components yielded virtually no difference at 31% for respiration, 32% for skin resistance, and 34% for cardiovascular, however only six of the 21 studies reported inconclusive rates for individual parameters.

One study (Davidson 1978) on the cardio activity monitor rendered results of an overall accuracy of 88% with 90% correct for deceptive subjects and 86% correct for non-deceptive. This study was not included on the table since the cardio activity monitor measures peripheral blood flow, which is not widely used in field testing.

Two studies, one by Franz, the other by Jayne, looked at computer evaluation of polygraph charts. Although both studies utilized the computer in the evaluation process, two completely different approaches were taken.

Franz developed computer programs that analyzed and quantitated the physiological reactions produced by the electrodermal, cardiovascular, and respiratory components recorded during field polygraph examinations. The evaluations of this quantitative information were used to devise a mathematical equation, based on the discriminant functions of each component, that would correctly classify most accurately the subjects as being deceptive or non-deceptive. The contribution of each component in making the overall determination was also evaluated. The computer evaluation from the discriminant score equation resulted in an overall correct classification rate of 89%. Perhaps more meaningful was that the relative contribution of each component based on this study was determined to be thoracic pneumograph 16.3%, abdominal pneumograph 13.7%, GSR 66.5%, and cardiovascular 3.4%.

Jayne's approach involved computer analyzation of examiner measurements of subjects' autonomic arousal. Calculations were made based on the greatest measurement within each component on each test being used as the subjects' response potential for that component on that test. Each measurement of physiological chart data for the control and relevant questions were subsequently compared to the response potential and the percent of potential was calculated. After this percentage was established, the arithmetic difference between the two was determined. If the greater difference was in favor of the control question a '+' designation was assigned; if in favor of the relevant a '-' designation was assigned. When the final score for each subject was calculated the two respiration channels were averaged and added to the total GSR and cardiovascular measurements. Cut-off levels for making a determination as to truth or deception were established through analysis of a frequency distribution of scores where there appeared to be a natural

break between truthful and deceptive results. This method produced an overall correct classification rate of 83%. Jayne found that increasing or decreasing the weight given to different components within the evaluation failed to affect the accuracy of the quantitative evaluations.

Since the Franz and Jayne studies described above involved computer analysis, those portions of their research were not reported in the overall accuracy and component accuracy reported earlier in this discussion. Additionally, Elaad (1985) was counted but once since the global and numeric studies involved the same data. Guertin and Wilhelm, although included in the table, were not reported in the overall statistics since the instrumentation used for recording the electrodermal activity was a B and W meter rather than a permanent chart recording as used in other field polygraph studies.

The information obtained as a result of this study was enlightening in terms of assessing the validity of individual physiological parameters and thus the overall polygraph results. As stated earlier, little information was provided for inconclusive rates for individual parameters, although sufficient data was included on overall inconclusive rates. An overall inconclusive rate of 16% allowed a high degree of utility for the field polygraph examinations in this study.

* * * * * *

NUMERICAL EVALUATION:

SEVEN POINT SCALE +/- 6 AND POSSIBLE ALTERNATIVES

A DISCUSSION

By

Sgt. M. van Herk

Introduction

The Polygraph Training Unit of the Canadian Police College commenced training polygraph examiners in 1979. The Canadian Police College polygraph technique was modelled after the United States Department of defense polygraph training program. The Department of Defense techniques were found to be most compatible to the Canadian ways of conducting polygraph examinations. The Department of Defense school taught techniques conducive to Canadian law enforcement practices and needs.

The Canadian Police College polygraph techniques also adopted the United States Department of National Defense criteria for chart interpretation and numerical evaluation. This technique was based on a scoring system initially developed by Mr. C. Backster. Mr. Backster labelled each numerical value as follows:

0 = No reaction/Equal reaction

+/-1 = Lean towards truth or deception

+/-2 = Truth or deception

+/-3 = Upgrade to double truth/Double deception

The Canadian Police College polygraph technique applies the same principles during the interpretation and numerical evaluation process.

Previously printed in the Newsletter of the Canadian Association of Police Polygraphists, (1990) 7(3) 28-37. Reprinted with the kind permission of the author and the Canadian Association of Police Polygraphists. The author is head of the Polygraph Training Unit of the Canadian Police College, a member of the Canadian Association of Police Polygraphists and a member of the American Polygraph Association. [ed.]

The verbiage is simplified as follows:

0 = Equal reaction/No difference

+/-1 = Slight difference/Noticeable difference

+/-2 = Distinct difference/Strong difference

Distinct reaction vs. Relatively nothing

+/-3 = Dramatic difference/Reaction vs. nothing

The numerical evaluations are derived from a variety of possibilities resulting from different criteria being applied. The criteria is not at issue and thus will not be commented on.

A numerical value of 0 to +/-3 is attached to each zone. A positive score is assigned if the reaction to the control question is greater and a negative score is assigned if the reaction to the relevant question is greater. One chart consists of three zones, each polygraph examination consists of three charts, consequently, a total of nine zones are numerically evaluated. The rules of numerical evaluation are empirically based.

The Canadian Police College polygraph technique utilizes a seven point scale to determine truth or deception when evaluating each zone. The scale ranges from +3 to -3 in accordance with physiological reactions that are recorded on the charts. The numerical values of each zone are totalled to determine a final score. The final score will determine the examiner's decision. In 1978 Drs. Gordon Barland, David C. Raskin, and John A. Podlesny published a research paper entitled, "Validity and Reliability of Detection of Deception." In this paper, subsequent to a study project, it was reported that the range of 0 to +/-6 when making the final decision was ultimum for the inconclusive range. Therefore, any total score of +/-6 and above indicated truth or deception. Any score from 0 to +/-5 fell into the inconclusive area. These figures were adopted and are still applied today by the examiners trained at the Canadian Police College.

When the various interpretation rules and numerical value criteria are applied the process can become subjective. The chart interpretation and numerical evaluation process is completed as the last step of the examination prior to the post test phase. Up to this point a lengthy period of time has expired and the examiner has built a solid relationship with the examinee. The pretest will have influenced the examiner somewhat as the interpretation and numerical evaluation process takes place. When the numerical values are related to the reactions, as interpreted by the examiner, the procedure is considered a semi-objective exercise.

Objective

To discuss if numerical evaluation can be made more objective by reducing the seven point numerical evaluation scale to a three point scale and not sacrifice accuracy.

Methodology

The assistance of Canadian Police College certified field polygraph examiners was solicited. They were asked to provide numerical evaluation sheets resultant from verified polygraph examinations. A verified examination being one from which the results were verified through the court process, confessions, and/or further investigations. The numerical evaluations had to be based on the examiners' use of the seven point scoring system taught at the Canadian Police College.

As a result, one hundred and fifty three numerical evaluation sheets were received from ten different Royal Canadian Mounted Police polygraph sections.

Also solicited were two hundred numerical evaluation sheets from the Canadian Police College certified polygraph examiner Fredericton, N.B., Police Department. These numerical evaluations were representative of polygraph results/decisions spaced over a two-year period.

All numerical evaluations were checked for mathematical accuracy and the decisions, based on the seven point scale with the +/-6 cut off, were recorded in their respective categories of truthful, inconclusive, or deceptive. A breakdown of the totals is shown below in Figures 1 and 2. These totals formed the basis of subsequent calculations and comparisons.

It is interesting to note that the results, between the Royal Canadian Mounted Police and Fredericton are divided up rather differently. The total truthful and deceptive decisions are reversed. I believe the reason is that the Royal Canadian Mounted Police evaluation results were all verified.

The most common and easiest way to verify charts is through confession, consequently most charts received from the Royal Canadian Mounted Police examiners fell into the deceptive category. The Fredericton selection is a cross-section of all evaluation results, consequently the totals are expectantly different.

The numerical evaluation sheets were rescored. Numerical scores of +/-2 or +/-3 were replaced with +/-1 values. Therefore, reducing the seven point scale to a three point scale.

The adjusted totals, still using the +/-6 cut off, were recorded in the appropriate categories of truthful, inconclusive, or deceptive. The charts, Figures 3 and 4, display the adjusted totals in comparison to the previous totals of the seven point scale.

With reference to Figure 3, the following changes are noteworthy:

Number of deceptive decisions to inconclusive 11%

Number of truthful decisions to inconclusive 2%

As a result of this change no inconclusive results moved into the deceptive or truthful categories.

It is noted that the Fredericton statistics calculate differently.

Number of deceptive decisions to inconclusive 8%

Number of truthful decisions to inconclusive 10%

The movement of truthful and deceptive into the inconclusive category appears to be consistent.

In this calculation there was one inconclusive result at +5 that became a truthful decision at +6. Of the 8% deceptive that became inconclusive, over half were originally verified deceptive. Of the truthful decisions that became inconclusive, 20% were verified truthful.

The decision categories were adjusted to reflect the three point scale with cut offs at +/-4. Therefore, the categories were defined as follows:

Truthful	= +4 and higher
Deceptive	= -4 and higher (lower)
Inconclusive	= 0 to +/-3 (inconclusive)

The Royal Canadian Mounted Police results are shown on the graph, Figure 5, as they compare to the two previous calculations.

The inconclusive category dropped dramatically and is again comparable to the original results as submitted by the examiners using the seven point scale with cut offs of +/-6. The truthful decisions have increased, in comparison to the original evaluations, as much as the deceptive decisions have decreased. No original inconclusive decisions resulted in either truthful or deceptive decisions as a result of this adjustment.

The Fredericton statistics also appear to stabilize in comparison to the original evaluations. The truthful category is almost identical (1% difference). The deceptive category has increased by 5% and the inconclusive category has decreased by 4%. No original inconclusive decisions became truthful or deceptive during this process.

The decision categories were again adjusted as before, only this time to reflect the three point scale with +/-5 as the cut off.

Figure 7 displays the Royal Canadian Mounted Police figures as they relate to all previous calculations. The inconclusive rate is decreased to 4% below the original evaluations using the seven point scale with the cut off at +/-6. The truthful category again increased slightly to 8% above the original evaluations. The deceptive category also increased, however, still remains 4% below the original evaluations. No original inconclusive decisions became truthful or deceptive.

The Fredericton inconclusive rate continued to decline drastically to 13% below the original evaluations using the seven point scale with the +/-6 cut off. The truthful category increased to 4% over the original

evaluations and the deceptive category increased by 9% over the original evaluations. No original inconclusive decisions changed to truthful or deceptive.

Conclusion

Throughout this exercise no original truthful decisions changed to deceptive and no deceptive decisions changed to truthful.

In addressing the issue as to whether the three point scale is more effective/objective than the seven point scale, the following observations are offered.

1. The three point scale +/-6 cut off

Not effective. The inconclusive rate doubles and too many charts on which verified decisions were correctly rendered would have fallen into the inconclusive (no decision) category. This is supported by both, Royal Canadian Mounted Police and Fredericton statistics. This option should receive no further consideration.

2. The three point scale +/-5 cut off

The statistics overall did not drastically change in comparison to the original evaluations, however, both Royal Canadian Mounted Police and Fredericton decreased noticeably in the inconclusive area. In view of the fact that the inconclusive range is a safety mechanism for police examiners, this low inconclusive rate is edging on danger and a higher probability of error. This option compared favourably, however, would necessitate close monitoring.

3. The three point scale +/-4 cut off

This option compares most favourably with the original seven point scale evaluations. In the Fredericton case the inconclusive rate dropped, the truthful remained virtually the same and the deceptives increased by 5%. For the Royal Canadian Mounted Police the inconclusive rate remained virtually the same, the truthful increased by 7%, and the deceptive decreased by 6%. Even though there are some differences in the truthful and deceptive values when comparing the Royal Canadian Mounted Police and Fredericton statistics.

The main focus during this project was the possible fluctuating results of the inconclusive range. The inconclusive range of the three point scale with the +/-4 cut off compares favourably to the original evaluations. Overall the three point scale with the +/-4 cut off compares favourably with the original seven point scale using the +/-6 cut off.

By reducing the scale the examiners obviously are forced to be more objective. The numerical values would range only from zero for no difference to +/-1 for a difference, regardless of size. This simple reduction in examiner options makes the process more objective.

The pneumograph recordings and cardiograph can easily be evaluated as to their differences, however, the galvanograph recording is presently evaluated and scored according to ratio. Some considerations will have to be established as to exactly what will constitute a difference in reactions.

In view of the similarities when comparing the 3 point scale using the +/-4 cut off with the present 7 point scale using the +/-6 cut off, I believe the option of the three point scale with a +/-4 cut off is worthy of consideration and perhaps more detailed study.

References

Abrams, Stanley. "Validity of the Polygraph, A Bibliography." Polygraph, June 1972.

Barland, Gordon H. and Raskin, David C. Validity and Reliability of Polygraph Examinations of Criminal Suspects. Report 76-1, National Institute of Law Enforcement and Criminal Justice, Salt Lake City, Utah.

Barland, Gordon H. "Reliability of Polygraph Chart Evaluation." Polygraph, December 1972.

Lykken, David T. A Tremor in the Blood. New York: McGraw-Hill, 1980.

Raskin, David C. Reliability of Chart Interpretation and Sources of Errors in the Polygraph Examination. Report 76-3, National Institute of Law Enforcement and Criminal Justice, Salt Lake City, Utah, 1976.

Raskin, David C., Barland, Gordon H., and Podlesny, John A. "Validity and Reliability of Detection of Deception." Polygraph, March 1977.

Acknowledgements

Thank you to the administration of the Canadian Police College for allowing me the time and opportunity to work on this project. The assistance of the Royal Canadian Mounted Police examiners, through their program manager, is much appreciated. Without a data base this project would not have been possible. Thanks to the following sections who contributed: Vancouver, Victoria, Kelowna, and Prince George, B.C.; Prince Albert and Regina, Saskatchewan; Calgary, Alberta; Winnipeg, Manitoba; Fredericton, New Brunswick; and St. John's, Newfoundland. Special thanks to Eric Fiander, polygraph examiner, Fredericton Police Department, who on short notice, provided the extra data to make this project more meaningful.

* * * * * *

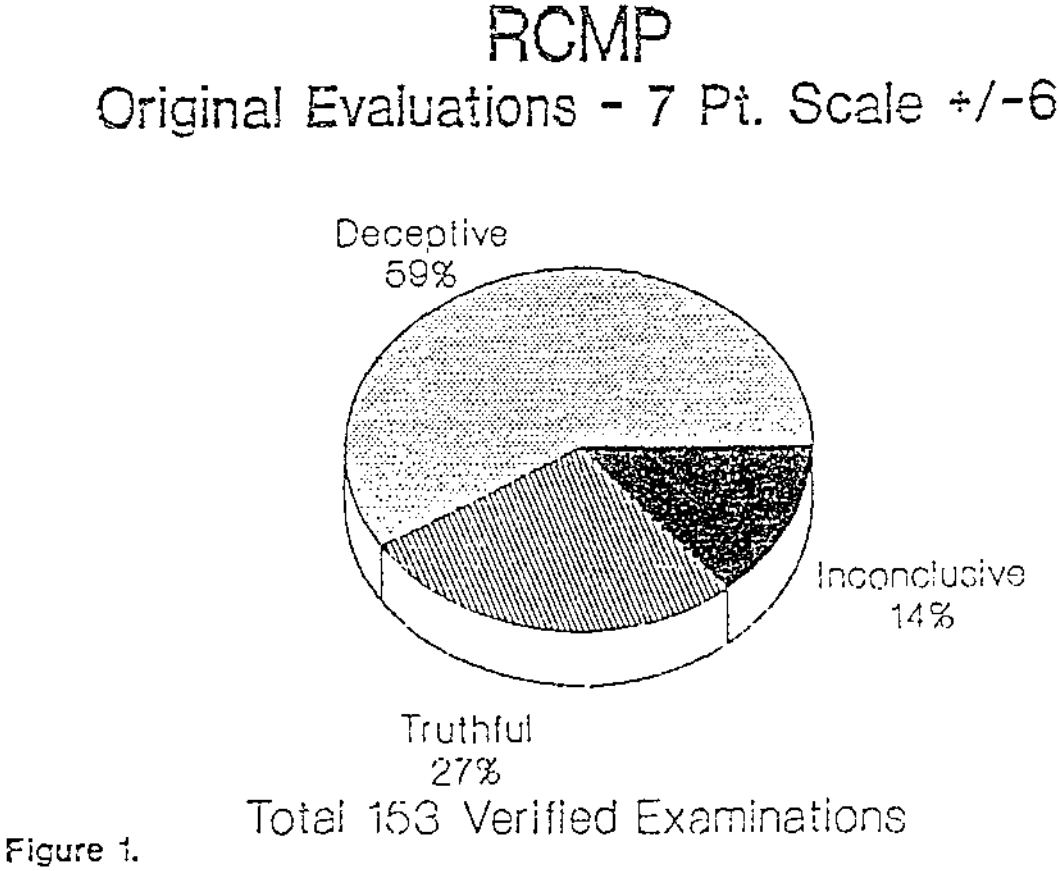

Figure 1.

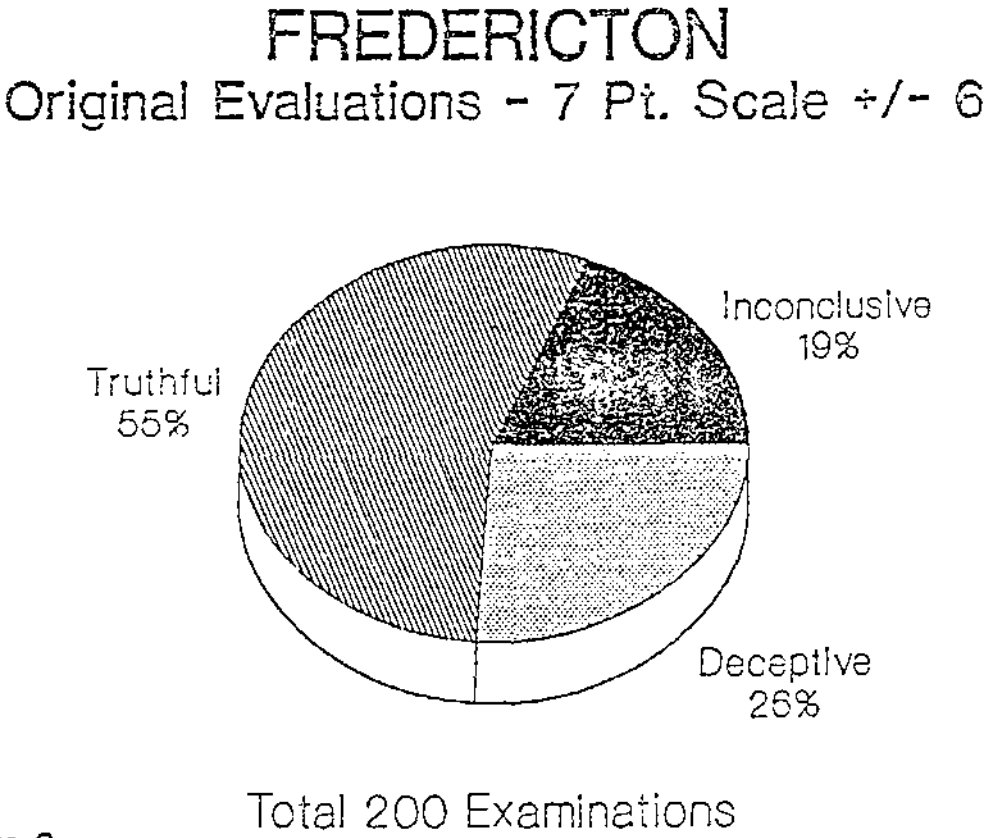

Figure 2.

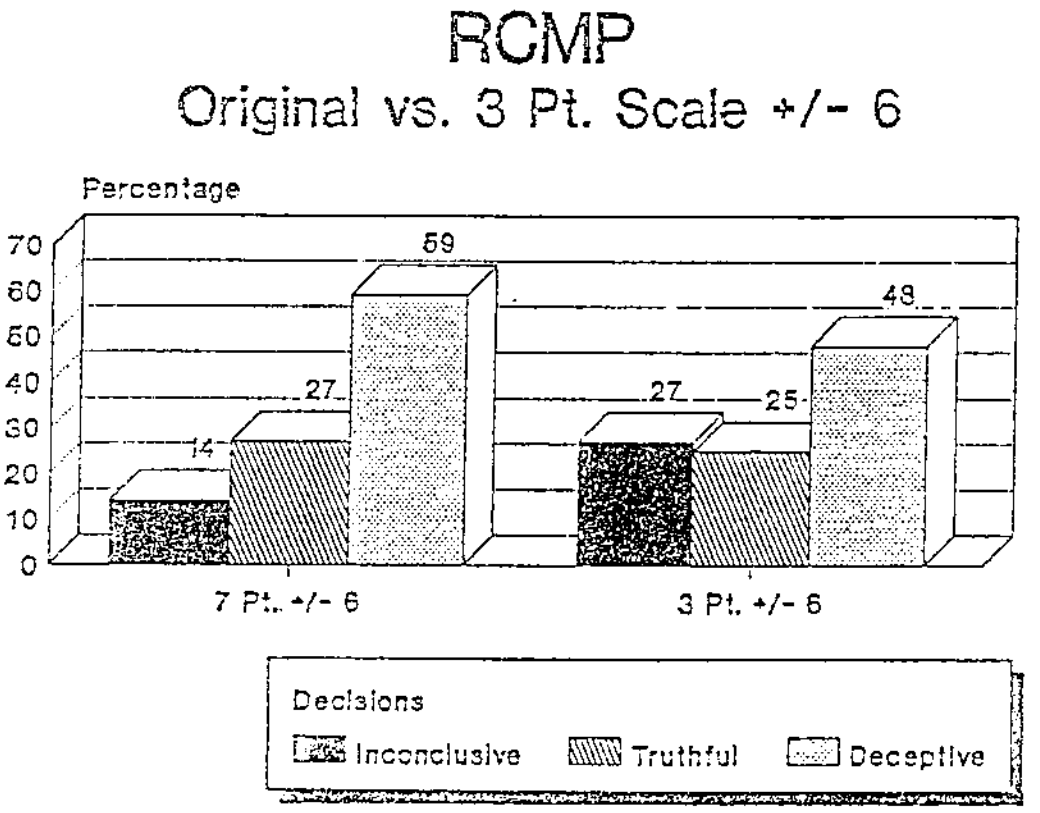

Figure 3.

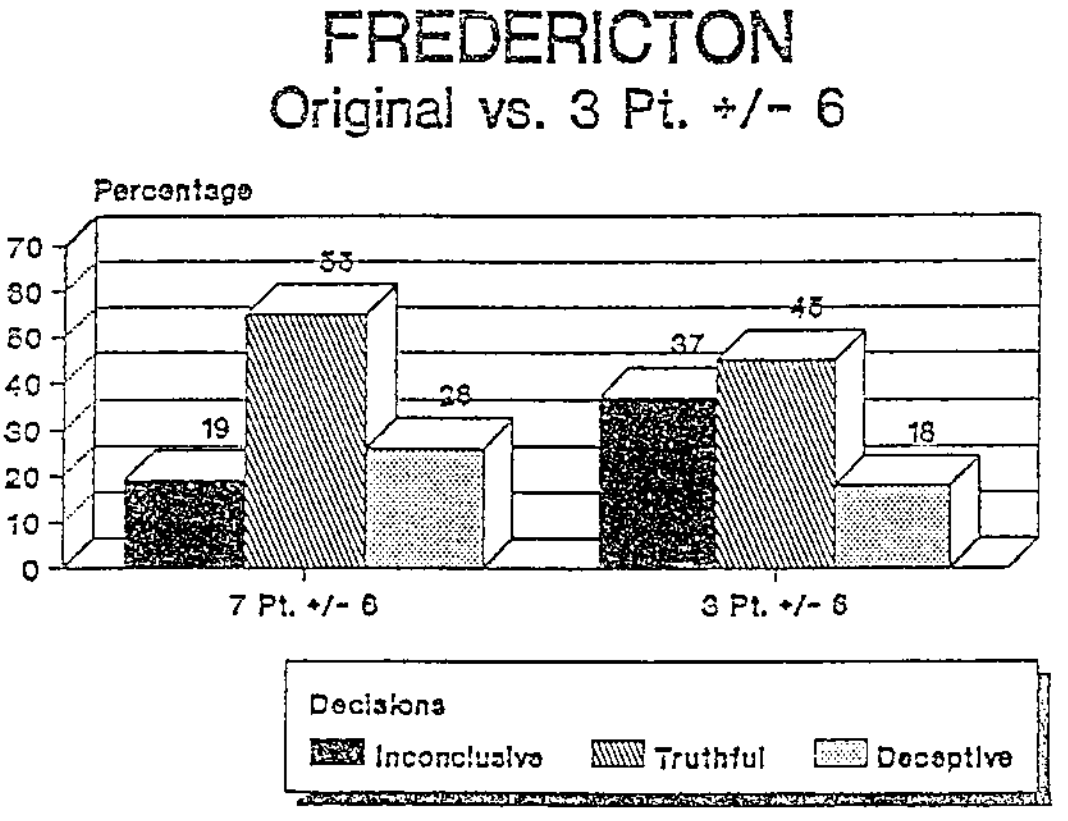

Figure 4.

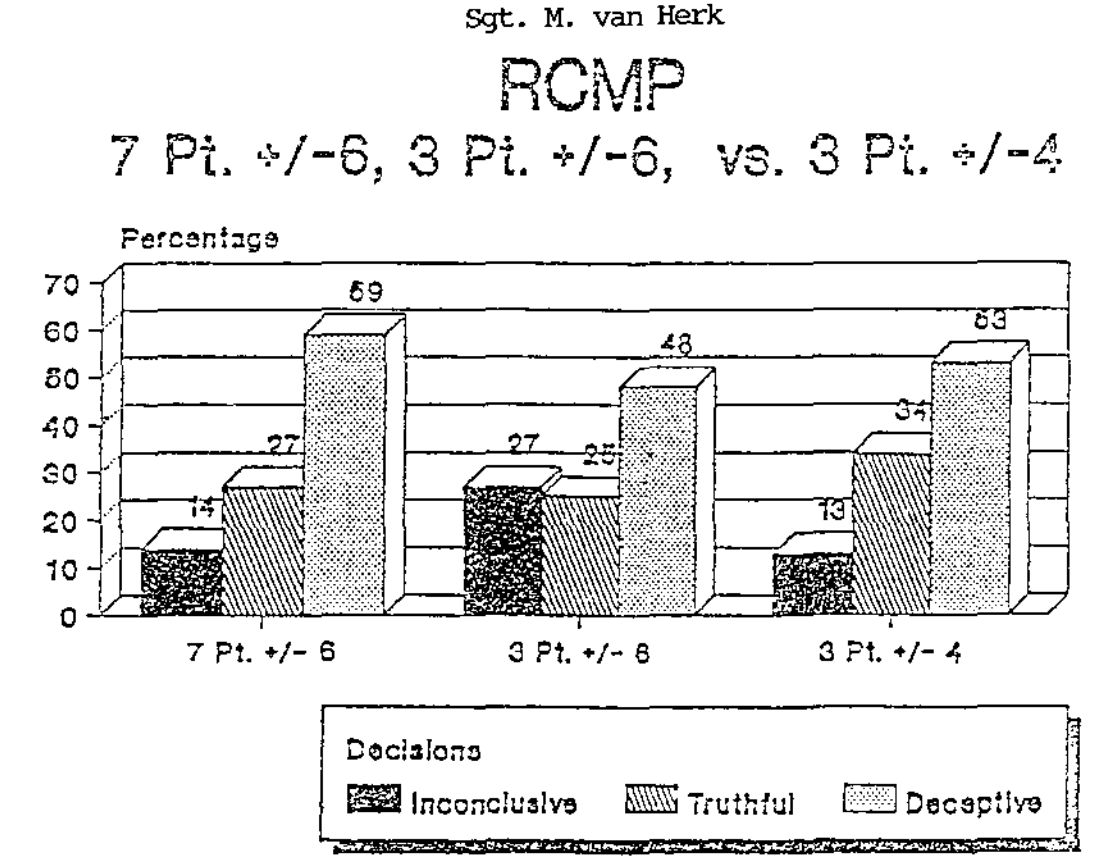

Figure 5

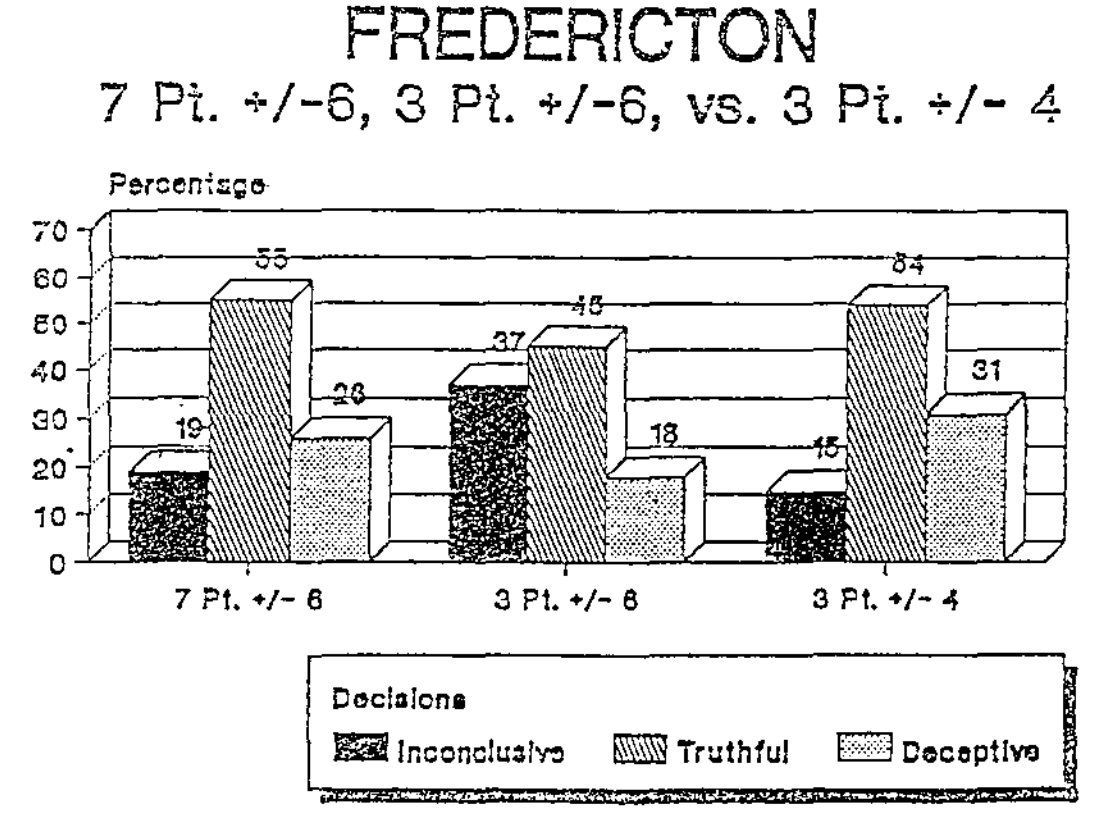

Figure 6.

Numerical Evaluation

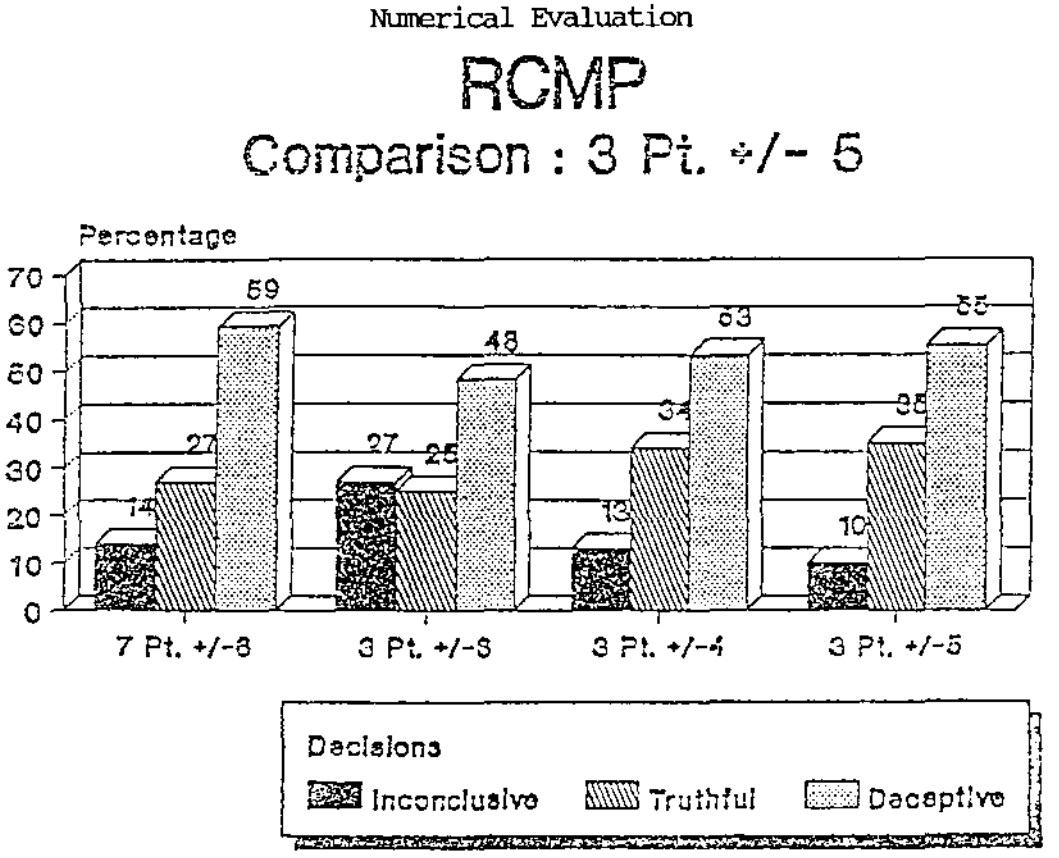

Figure 7.

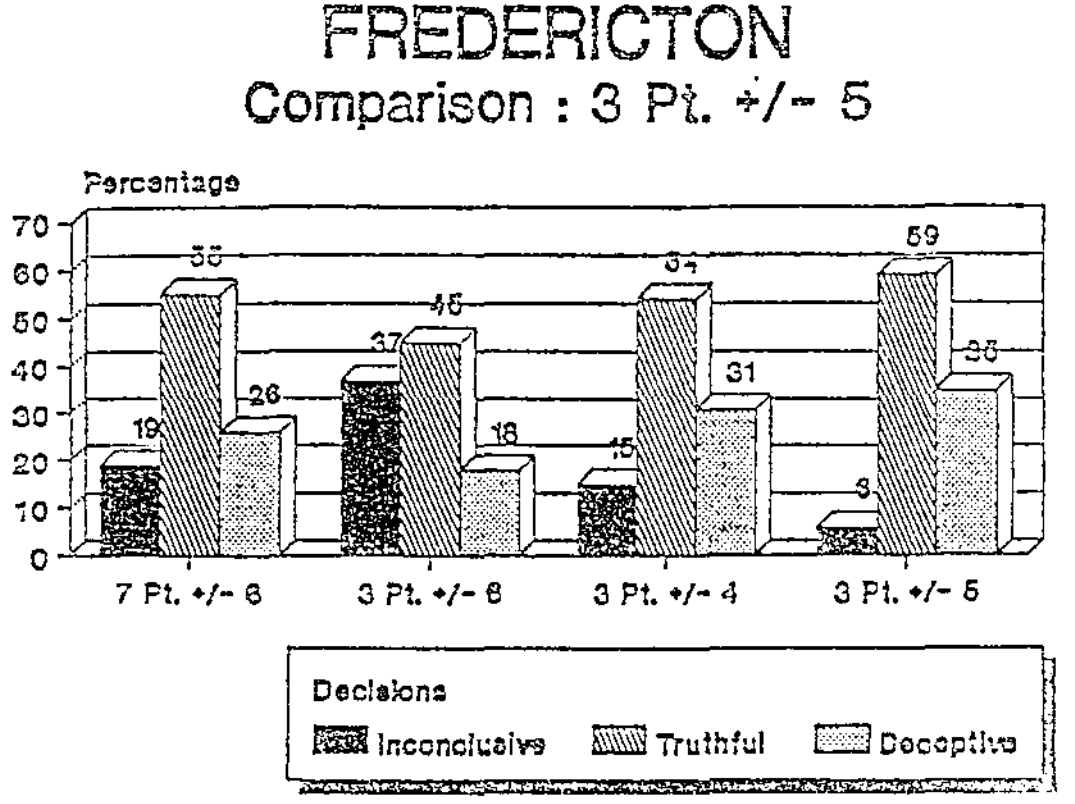

Figure 8.

SCIENTIFIC EVIDENCE IN COURTS-MARTIAL: FROM THE GENERAL ACCEPTANCE STANDARD TO THE RELEVANCY APPROACH

by

Major Michael N. Schmitt and Captain Steven A. Hatfield

I. Introduction

In courts-martial today, the use of a wide variety of scientific evidence has become routine. Counsel for either side may offer fingerprint or blood type evidence to indicate identity. Trial counsel use chemical analysis of blood or urine to prove recent drug use or intoxication.[1] Behavioral analysis of victims is presented routinely as evidence of rape trauma or battered child syndrome.[2] Truthfulness, or the lack thereof, theoretically can be demonstrated by polygraph examinations.[3]

The use of other newer types of scientific evidence someday may become just as routine.[4] Apparently, scientists can now prove identity to nearly a mathematical certainty using DNA analysis.[5] The use of radioimmunoassay analysis of hair suggests that drug usage can be detected for months, even years, after ingestion.[6] As science advances, ever more creative means of producing evidence undoubtedly will be developed.

In recent years the standard for the admissibility of scientific evidence in courts-martial has undergone significant change. This change can be described as the replacement of the general acceptance standard with the relevancy approach. The purpose of this article is to examine the development and acceptance of the relevancy approach in the federal and military courts, analyze its meaning, and attempt to provide a working model for its application in courts-martial. However, before turning to that approach, an understanding of its predecessor, the general acceptance standard, is necessary. The underlying rationale for the general acceptance theory remains a consideration under the relevancy approach.

Major Michael N. Schmitt is in the U.S. Air Force Judge Advocate General's Corp. Currently a Graduate Fellow at Yale Law School. Formerly assigned as an Assistant Professor of Law, U.S. Air Force Academy, 1988-1990. B.A., Southwest Texas State University, 1978; M.A., Southwest Texas State University, 1983; J.D., University of Texas, 1984.

Captain Steven A. Hatfield is in the U.S. Air Force Judge Advocate General's Corps. Currently assigned to the U.S. Air Force Academy as an Assistant Professor of Law. Formerly assigned as Area Defense Counsel, Sembach Air Base, Federal Republic of Germany, 1987-1989. B.S., Miami University, 1981; J.D., University of Idaho, 1983.

Article reprinted with permission from 130 Military Legal Review (1990), 135-169.

II. The General Acceptance Test

Since 1923, the admissibility of novel scientific evidence in federal, state, and military courts has been governed almost exclusively by the rule articulated in Frye v. United States.[7] In that case, the Federal District Court for the District of Columbia considered the admissibility of evidence derived from a crude forerunner of the polygraph. Whereas the modern polygraph measures several different physiological responses of the subject being tested, the device under scrutiny in Frye was a "monograph," which measured only blood pressure. Finding the test to be a novel scientific technique, the court enunciated a standard of admissibility in a brief, two-page opinion that would provide a basic framework for the analysis of scientific evidence in the courts of the United States for the next sixty years. That standard was announced as follows:

> Just when a scientific principle or discovery crosses the line between the experimental and demonstrable stages is difficult to define. Somewhere in the twilight zone, the evidential force of the principle must be recognized and while the courts will go a long way in admitting expert testimony deduced from a well recognized scientific principle or discovery, the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field to which it belongs.[8]

The court then held that the evidence in question was inadmissible because the "lie detector" that was employed had "not yet gained such standing and scientific recognition among physiological and psychological authorities."[9] The Frye court did not cite authority for the general acceptance standard, nor did the court set forth a rationale for it. Despite that fact, it was accepted initially without question. Only years later, when the standard was questioned, did courts begin to defend its application in any comprehensive manner.[10] Several arguments in support of general acceptance were offered repeatedly. the most common basis for the test was the need to ensure the reliability of evidence upon which a jury based its decision. The issue of reliability was, and still is, seen as especially important in the area of scientific evidence. Although the judge or jury may have some innate ability to evaluate the testimony of lay witnesses, they probably do not have commensurate ability with regard to the complexities of science. This relative inability to assess critically scientific evidence is compounded by a concern that science in the twentieth century, albeit ever more incomprehensible to the layman, has taken on an aura of "mystic infallibility."[11]

Thus, the primary reason for requiring general acceptance by experts in the particular field to which the evidence belongs is to address the potential for confusion in the fact of seemingly infallible scientific evidence and to provide a method for determining its reliability. What the general acceptance standard does is supplant judges and lay juries with a "scientific jury" when issues of scientific reliability arise.[12] This approach is premised on the view that scientists are best able to assess science. Assuming the particular evidence passes muster in the scientific community, the fact finder need only determine the appropriate weight to give the

evidence.[13] Weight issues fall within the natural purview of the fact finder because they center on concepts as credibility, and they depend--as do most factual matters--on the effectiveness of litigators. Thus, asking jurors to handle such issues is consistent with all the other tasks the judicial system demands of them. Additional justifications for the Frye test include ensuring the existence of a "reserve determination in a particular case"[14] and promoting "uniformity of decision."[15]

The Frye standard received almost universal acceptance, although application of the standard is not without problems. For instance, some scientific evidence cannot be ascribed conveniently to a particular field of study to determine acceptance because the evidence may be the product of an interdisclipinary approach. Must such evidence be accepted generally by all scientific fields that contributed to its existence?[16]

Perhaps an even more troubling issue raised by the general acceptance approach is whether it is the principle or the technique employed in the creation of the scientific evidence that must be accepted generally.[17] A review of the Frye decision reveals that the court was concerned almost exclusively with the principle involved. Specifically, it found no generally accepted nexus between variations in blood pressure and deception.[18] In subsequent years, however, many courts deviated from the precise holding in Frye and required general acceptance of the technique employing the principle.[19] Other controversies arising as a result of the failure of the Frye court to provide a comprehensive analytical framework include the definition of the term "acceptance,"[20] how narrowly or broadly the relevant field from which general acceptance is sought is to be defined,[21] what is necessary to qualify as an expert,[22] and how general acceptance is to be proven.[23]

III. Frye Reconsidered

As previously noted, Frye was accepted initially without question. As time passed, however, the general acceptance standard came under greater scrutiny. In part, this was attributable to the increasingly important role that scientific evidence assumed in recent years.[24] As the raw number of cases involving such evidence grew, it was inevitable that pitfalls in the standard would become more apparent. Nevertheless, despite a trend towards rejecting the seeming "mystic infallibility" of Frye itself, the general acceptance standard remains the standard of admissibility in a majority of jurisdictions.[25]

An opportunity to reassess the standard presented itself in the guise of the Federal Rules of Evidence,[26] signed by President Ford on January 2, 1975. Specifically, Federal Rule of Evidence 702 (Testimony by Experts)[27] was to open the door to a new approach. Though the general acceptance standard had been dogma for fifty-two years, inclusion of the standard or any clearly analogous counterpart was conspicuous by its absence. Indeed, despite the established position of Frye as the lead case in the area of novel scientific evidence, it was not mentioned at all in the analysis of the rule.[28] To compound this lack of guidance, the Advisory Committee's Notes did not address the issue of whether the general acceptance standard survived promulgation of the rules.[29] The significance of these omissions would soon become apparent to scholars and practitioners alike. Was the

standard so accepted as to be assumed part and parcel of Federal Rule of Evidence 702,[30] or did the omission indicate that the judicial standard set forth had been overruled legislatively?[31] The foundation was laid for a schism in evidentiary law that continues today.

In light of the theoretical and practical problems that had plagued the general acceptance standard, a number of jurisdictions chose to reject it in favor of a less demanding approach.[32] That approach has come to be known as the "relevancy test." In essence, the test does away with the treatment of novel scientific evidence as a separate evidential category by treating it in much the same fashion as other expert testimony.[33] Therefore, the emergence of the relevancy standard marked a retreat to the pre-Frye era of admissibility. Relevancy was a return to basics--arguable, a return to fact-finding to the fact finder.[34] Core evidentiary concepts such as probative value, prejudicial effect, and reliability[35] would now serve to shape the admissibility inquiry.[36] This is not to suggest that these concepts played no role in the general acceptance analysis. However, they were now to emerge from the background to supplant the nonlegalistic inquiries of the "scientific jury."[37]

United States v. Downing[38] would quickly become the lead case cited by relevancy advocates. The fact pattern of Downing is fascinating. At issue in this fraud case was whether the defendant was a con man who had called himself "Reverend Claymore." Twelve eyewitnesses testified that the defendant and Reverend Claymore were one and the same. The defense called an expert witness on the unreliability of eyewitness testimony. Relying on the "helpfulness" standard of Federal Rule of Evidence 702,[39] the Third Circuit refused to permit the defense expert to take the stand.

A review of Downing indicates that the court was primed to reject Frye by relying on the text of the Federal Rules. As the Downing court recognized, the eight years since the promulgation of those rules had witnessed a plethora of suggestions on how novel scientific evidence should be treated. Among the possible approaches circulating at the time were the following: reasonable scientific acceptance;[40] a preponderance standard for criminal defendants with a beyond a reasonable doubt standard for prosecutors;[41] established and recognized accuracy and reliability;[42] and a relevancy/prejudice approach that shifts the inquiry to weight once relevancy is established.[43] Rather than adopting one of the new approaches that had become the focus of attention, however, the court chose to fashion its own analysis of the rules.[44] This is not to suggest that the court rejected the various alternatives out of hand. Instead, it noted the underlying considerations of those approaches and then looked to the Federal Rules of Evidence for resolution of the dispute. Indeed, even the Frye standard played some role in the court's new approach.

For the Third Circuit, the derivation of an appropriate standard necessarily was rooted in the broadness of the relevancy rules--Federal Rules of Evidence 401-403. Under the rules, essentially all evidence is admissible unless it is irrelevant, unduly prejudicial, or otherwise specifically excluded.[45] By contrast, evidence evaluated using the Frye standard could be excluded even if it was both relevant and not prejudicial. This would occur in situations in which the scientific community had not yet passed

collective judgement on the process involved. Reduced to basics, the two approaches represent an inherent conflict between the search for truth and the goal of fairness in our legal system. If the goal is truth, then evidence having any bearing on the fact in issue should be admissible, so long as it is not so unreliable as to grossly mislead the fact finders. The broadness of the relevancy rules clearly fosters this goal. Justice is safeguarded through litigation as to the appropriate weight to be given the evidence. On the other hand, the Frye approach searches for fairness. Using the Frye approach, courts are willing to sacrifice evidence that might be dispositive so as to preclude any possibility that unfair--i.e., scientifically unreliable--evidence might come before the fact finders. The safeguard is to be found in science, not law. As a result, the scientific jury takes center stage, and litigation focuses on admissibility. Thus, a natural conflict exists between the central premise of the relevancy rules and that of Frye.[46]

Interestingly, the court could have avoided the apparent conflict between relevancy and Frye simply by holding that, given the failure of the Federal Rule of Evidence drafters to "overrule" specifically the general acceptance standard, Federal Rule of Evidence 702 incorporated Frye. Again, this would have been inconsistent with the broad nature of Federal Rules of Evidence 401-403. However, the drafters arguably contemplated this inconsistency by noting that evidence admissible under the relevancy rules nevertheless may be excluded by the terms of other rules of evidence.[47] In light of the asserted dangers of "mystic infallibility" posed by novel scientific evidence, a detour from the principle favoring admissibility might have been justified. After all, truth is most often the victim of unfairness. Thus, the broadness of relevancy logically did not demand the death of Frye.

Rather than arguing that Frye had been rejected outright, the Downing court took a unique approach by concluding that, although the codification of evidence rules "may counsel in favor of a reexamination of the general acceptance standard,"[48] Federal Rule of Evidence 702 neither incorporated nor repudiated Frye. This very unusual analysis was based on the theory that because the drafters must have been aware that Frye was a judicial creation, the failure to condemn "such interstitial judicial rule-making"[49] in the rules was to be read as a mere invitation to reconsider the standard.[50] In other words, the Third Circuit was suggesting that drafters intended the courts to address the issue in a case-by-case fashion. The flaw in this analysis lies in the nature of the drafters' task. If they had been in the process of drafting nonbinding rules, deferring decision on particular issues to the courts of differing jurisdictions might have made more sense. However, the drafters were developing binding rules for an integrated system of courts. Nevertheless, the Downing court seemed to be suggesting that the drafters of the Federal Rules of Evidence were willing to countenance splits among federal courts in their approaches to novel scientific evidence. If the development of rules of evidence was to be left to the judiciary, one must wonder why the drafters bothered to take on their task in the first place. Was piecemeal uniformity satisfactory to them? Surely, this would represent an unusual method of codification. Arguably, the Downing court was inviting reconsideration--not the drafters.

Nevertheless, given the court's interpretation of the omissions, the issue of Frye's survival entered the realm of judicial policymaking.

With policy concerns now the focus of attention, the court began its inquiry into the relative merits of maintaining the Frye standard. On the positive side, Frye provides a methodology by which novel scientific evidence may be assessed; that is, "the scientific jury." Theoretically, this method would result in like decisions in like cases and therefore serve the goal of uniformity of judgment. At the same time, general acceptance also protects criminal defendants from unreliable evidence presented by the prosecution to a jury potentially in awe of science.[51]

Counterbalancing these advantages are two significant potential dangers. The first is "vagueness." As the court pointed out, the general acceptance standard is vague because the terms "scientific community" and "general acceptance" are ill-defined.[52] Even if the courts could reach a consensus as to the composition of the "relevant community" regarding a particular form of scientific evidence, the lengthy and divisive process of reaching consensus would be revisited each time a new scientific process was developed. At the same time, the subjectivity inherent in the term "general acceptance" precludes any quantification of the standard.

The second danger cited by the court is "conservatism." As the court perceptively pointed out, the standard is conservative in the sense that it might preclude the admission of probative and reliable evidence.[53] Because of the lag time between the development of a new type of scientific evidence and its general acceptance by the scientific community, Frye clearly has the potential of excluding evidence that subsequently is determined to be completely reliable. Arguably, this is a neutral flaw; that is, one that might assist the guilty defendant to keep inculpatory evidence out and assist the government to exclude evidence of an exculpatory nature.[54] Neutral or not, however, if trials are forums in which truth is sought, that purpose will be hindered.[55] These two concerns--vagueness and conservatism--led the court to reject Frye as "an independent controlling standard of admissibility,"[56] Instead, general acceptance was viewed as but one of potentially many indicators of reliability.[57]

In what has become the accepted approach by courts rejecting Frye, including the military courts, the Third Circuit set forth its method of determining whether evidence is admissible under Federal Rule of Evidence 702. The key was the term "helpfulness" in the rule. For the court, an assessment of whether novel scientific evidence is helpful depends on three factors: 1) the soundness and reliability of the process or technique used in generating the evidence; 2) the possibility that admitting the evidence would overwhelm, confuse, or mislead the jury; and 3) the proffered connection between the scientific research or test result to be presented, and the particular disputed factual issues in the case.[56]

The similarity between this three-tiered query and the relevancy rules leaves one with the impression that the court has done more than reject Frye. Arguably, the court has defined Federal Rule of Evidence 702 as a restatement of the relevancy rules. For example, with regard to the first component of the test, would evidence resulting from an unreliable or

unsound technique or process make a fact in issue more or less probable under Federal Rule of Evidence 401? Clearly, it would not. One possible resolution of this quandary is an argument that the question in Federal Rule of Evidence 401 is not whether the process or technique is unreliable, but simply whether the result that is generated makes the fact in issue more or less probable. In other words, accurate, albeit unreliable, evidence that makes a fact in issue more or less likely is admissible under Federal Rule of Evidence 401--period (unless outweighed by Federal Rule of Evidence 403 concerns). Absent Federal Rule of Evidence 702, reliability of the process or technique then would become only an issue of weight, not admissibility. If this were the approach taken, Federal Rule of Evidence 702 would have meaning independent of Federal Rule of Evidence 401. The Downing court itself, however, defeats this argument by noting that the "logical relevance" of Federal Rules of Evidence 401-403 does, in fact, involve reliability.[59]

Any number of additional examples could be cited in the characterization of Federal Rules of Evidence 702 as a relevancy restatement. For example, would not unreliability under Federal Rule of Evidence 702 also necessarily serve to confuse or to mislead the jury under Federal Rule of Evidence 403? Similarly, the second component of the Downing helpfulness test is, arguably, nothing more than Federal Rule of Evidence 403 revisited. Indeed, the textual similarities would suggest Federal Rule of Evidence 403 served as the model in drafting the decision. Finally, the third component essentially poses the question of whether the evidence in issue is relevant, i.e., it is a Federal Rule of Evidence 401 inquiry.

The Third Circuit clearly was sensitive to the possibility that its interpretation of Federal Rules of Evidence 702 was illogical in light of the Federal Rules of Evidence 401-403 relevancy standards. It therefore went to some effort to distinguish the Federal Rule of Evidence 702 requirements. The court started by construing the term "helpfulness" (Federal Rule of Evidence 702 standard) as necessarily implying a quantum of reliability "beyond that required to meet a standard of bare logical relevance (Federal Rule of Evidence 401)."[60] Unfortunately, in the absence of quantification or examples, this clarification does little other than muddy the water. Indeed, it smacks of meaningless judicial draftsmanship.[61] In a like manner, the court acknowledged that the Federal Rule of Evidence 702 concern about confusing, misleading, or overwhelming evidence might mirror Federal Rule of Evidence 403 to some extent. The court posits evidence, however, that could meet the Federal Rule of Evidence 702 requirements, but fail under a balancing test pursuant to Federal Rule of Evidence 403. As an example, the court suggests that a Federal Rule of Evidence 403 prohibition on waste of time or confusion of the issues might operate to exclude evidence admissible under Federal Rule of Evidence 702 if additional evidence of guilt existed.[62] The problem with this analysis is that the real question is whether evidence that passed a Federal Rule of Evidence 403 review ever would fail a Federal Rule of Evidence 702 confusing, misleading, or overwhelming test--not vice versa. If so, that component of the Federal Rule of Evidence 702 test would have independent meaning. If not, it is nothing more than a Federal Rule of Evidence 403 retest. Most likely, the latter is the case, at least for practical purposes.

Whether the Downing court did anything beyond simply rejecting Frye and requiring that novel scientific evidence meet the basic standards set forth in Federal Rules of Evidence 401 through 403 remains unclear; as a result the case is intellectually troubling. Nevertheless, the Downing case has come to represent an approach that increasingly is being adopted by jurisdictions throughout the United States. On the tenth anniversary of the Military Rules of Evidence, we turn to one of those jurisdictions--the military justice system.

IV. Evolution of the Military Approach to Novel Scientific Evidence

Despite adoption of the Military Rules of Evidence on 12 March 1980,[63] the military courts continue to employ the Frye test in generally the same manner as their civilian counterparts.[64] As the Federal Rules of Evidence did in federal courts, however, the Military Rules of Evidence eventually would provide the impetus for a complete revision in the admissibility standards applicable to novel scientific evidence. This should not be surprising, given the clear goal of the drafters of the military rules to mirror the federal rules to the extent possible.[65] As a result of that intent, the rules relevant to this inquiry, Military Rules of Evidence 401-403 and 702, are nearly identical to their federal rules counterparts.[66]

The possibility that Frye had not survived the promulgation of the rules was not considered in earnest until the Army Court of Military Review's decision on United States v. Bothwell.[67] Bothwell involved the attempted admission of a psychological stress evaluation (PSE). The examination, designed to assess veracity, is based on the theory that deception causes psychological effects, which in turn result in variations in voice modulation.[68] The court began, in much the same fashion as the Downing court would two years later, by taking note of the dispute over the continued viability of the Frye standard, specifically in the federal circuits. It accurately attributed this dispute to the failure of the draftsmen to include any mention of the general acceptance standard in the Federal Rules.[69] Because the military had adopted the Federal Rules almost verbatim, the debate was particularly relevant to military practice. Nevertheless, the court stated that "in the absence of any definitive authority to the contrary, [it was] unwilling to abandon a rule that has been applied in the military for almost thirty years."[70] Presumably, the appropriate authority would be a decision by the Court of Military Appeals.

The Bothwell court was obviously uncomfortable with the "it's always been done that way" justification it had enunciated. In an effort to bolster its holding, the court turned to the "mystic infallibility" rationale set forth nine years earlier by the D.C. Circuit Court in United States v. Addison.[71] In other words, the Bothwell court was expressing concern that lay members very well might be overwhelmed by the scientific nature of the evidence and that unfairness would result. At the same time, the court very perceptively realized that critics might allege that the danger of misleading or overwhelming the jury already was taken care of by the Military Rule of Evidence 403 balancing test. Therefore, its interpretation of Military Rule of Evidence 702 as incorporating Frye to avoid such dangers would clearly be subject to attack. To preempt that criticism, the court declared the Frye protection to be greater than that of Military Rule of Evidence 403

and based its argument on the words "substantially outweighed" in the rule.[72] Clearly, in retrospect the apparent hidden agenda of the Bothwell court was to invite others to join the affray.[73] Until that occurred, however, the Bothwell court was unwilling to explore new ground. Thus, Frye would remain the accepted standard.

That was soon to change as military courts began to question the survival of Frye and rule in favor of an expansive view of Military Rule of Evidence 702. In United States v. Snipes the Court of Military Appeals held that the intent of Military Rule of Evidence 702 was to "broaden the admissibility of expert testimony."[74] Upholding the admission of rebuttal evidence by a child psychiatrist concerning sexual abuse, the court noted the existence of "a sufficient body of 'specialized knowledge' as to the typical behavior of sexually abused children and their families to permit certain conclusions to be drawn by an expert."[75] Though such verbiage resembles general acceptance, that standard was not discussed by the court. This fact, combined with the earlier comment on admissibility, indicated the court was moving slowly in the direction of the relevancy approach.

Not long after Snipes, the Court of Military Appeals moved even closer to adoption of the relevancy approach in United States v. Mustafa.[76] Mustafa was a rape-murder case in which the government called an Army Criminal Investigation Command (CID) agent to testify concerning blood flight analysis. The defense objected on the grounds that blood flight analysis was not generally accepted.[77] Without addressing the issue directly, the court found the existence of "a body of specialized knowledge which would permit a properly trained person to draw conclusions as to the source of the blood."[78] The court, discussing the effect on Frye and the general acceptance standard only peripherally, found that the existence of this body of specialized knowledge meant the evidence was "helpful, i.e., relevant."[79] Thus, it was admissible.[80] Though certiorari was denied on appeal to the Supreme Court, Justices White and Brennan would have granted it to resolve the issue of whether the rules incorporated the Frye standard.[81]

Though Mustafa was clearly a rejection of the stringent standards of the general acceptance test, it failed to replace that test with any definitive analytical framework for use in evaluating the admissibility of novel scientific evidence. Nevertheless, the Court of Military Appeals clearly was moving in the direction of relevancy. Emphasis on terms like "helpful and relevant," in light of the debate then occurring in the federal circuits, could mean nothing else. The chronology of the cases cited makes clear where the court was going: Bothwell,[82] December 1983; Snipes,[83] July 1984; Mustafa,[84] June 1986; Mustafa, certiorari denied, November 1986.[85] After Justice White argued that resolution of the conflict was required, the military's adoption of relevancy seemed inevitable. It also should have been apparent that the military would adopt the Downing approach, given Justice White's selection of a single case to cite as representative of the "flexible standard of admissibility" -- Downing.[86] Just over eight months later, the court would do exactly that in United States v. Gipson.[87]

In Gipson the appellant had made a motion in limine to admit evidence of an exculpatory polygraph.[88] Refusing to allow a defense attempt to lay a foundation for admissibility, the trial judge ruled that polygraphy was not

"accepted that well in the scientific community or the judicial community ..."[89] At the appellate level, therefore, the granted issue was the appropriateness of that refusal. To assess whether the defense should have been granted the opportunity to lay a foundation, the requisite foundation had to be ascertained. This question opened the door to relevancy in the military courts.

The court relied heavily on the reasoning of the Third Circuit in Downing.[90] Indeed, the published opinion is very much the Downing decision reissued in the military context. As a prelude to its adoption of relevancy, the court first discussed the pros and cons of the Frye standard,[91] as well as the dispute then occurring in the federal system over continued adherence to the standard in light of the Federal Rules.[92] The chief concern expressed by the court was "that too much good evidence when by the boards during the 'lag time' inherent in the scientific 'nose-counting' process."[93]

The groundwork laid, the court went on the analyze the Military Rules of Evidence. Given the near verbatim adoption of the Federal Rules by the military, that the court's analysis tracked Downing precisely is not surprising. Additionally, the court completely adopted the Downing understanding of Federal Rules of Evidence 702 in its own analysis of Military Rule of Evidence 702.[94] Henceforth, Military Rule of Evidence 702 would require an inquiry into the three Downing criteria: 1) soundness and reliability of the process or technique; 2) the possibility of overwhelming, confusing, or misleading the jury; and 3) the proffered connection with the disputed factual issue.[95]

In its adoption of the Downing approach to relevancy, the court considered two additional factors unique to military consideration of Rule 702. First, the drafters of the military rules had noted in their analysis that Military Rule of Evidence 702 might "be broader and [might] supersede Frye."[96] Thus, their rejection of Frye was technically on firmer ground than that of the Third Circuit. In addition, the 1969 Manual for Courts-Martial had stated that polygraph results were inadmissible.[97] In the Military Rules of Evidence, however, this evidentiary exclusion had been omitted.[98] Arguably, both of these were factors indicating the drafters intended to expand the standards for admissibility beyond the narrow confines of Frye. Indeed, how could the specific mention of Frye be read as anything other than an invitation for the courts to reject this judicially created norm?[99] Similarly, to the extent that polygraphs no longer were singled out for exclusion, in the absence of new information on their reliability, the standard must have changed.[100] Therefore, the court, relying on the Downing rationale combined with a focus on the text of the new rules and their analysis, found Frye to have been superseded by the relevancy approach. [101]

V. The Relevancy Approach Under Gipson

Based upon the holding in Gipson, military courts currently consider four evidentiary rules prior to admission of novel scientific evidence--Military Rules of Evidence 401, 402, 403, and 702.[102] Basically, three broad requirements exist: 1) the evidence is relevant and admissible under 401

and 402; 2) the evidence is helpful to the fact finders under 702; and 3) the probative value outweighs any dangers posed by the evidence under 403.[103]

Though the Court of Military Appeals did not label their new approach to novel scientific evidence, the requirements listed above are nearly identical to those set forth by commentators and courts advocating what has become known as the "relevancy" test.[104] In its pure form, the relevancy approach treats novel scientific evidence as any other type of evidence by asking whether the evidence is probative and, if so, whether its probative value outweighs the dangers posed by admission.[105] Arguably, both Downing and Gipson require further evaluation of the evidence using the expert testimony rule, Federal Rule of Evidence 702, or Military Rule of Evidence 702. As discussed earlier,[106] some question exists as to whether those rules are simply restatements of the relevancy rules or whether they are qualitatively different. Regardless of the academic exercise of differentiating between the relevancy and expert testimony rules, however, both the Downing and Gipson courts treated them as different. Therefore, any proposal of practical use will do likewise.[107]

With the adoption of the relevancy approach by the military courts, practitioners now are faced with a significantly different mode of analysis when determining the potential admissibility of scientific evidence. This article will propose an analytical framework to use with regard to that evidence. First, however, one must clearly understand the rules used in the analysis: Military Rules of Evidence 401, 402, 403, and 702.

VI. Military Rules of Evidence 401 and 402

Federal Rule of Evidence 402 provides that all relevant evidence is admissible unless otherwise provided by the Constitution, the Manual for Courts-Martial, or Acts of Congress.[108] Therefore, one must turn to the definition of relevant evidence under Military Rule of Evidence 401 to ascertain admissibility. Basically, relevant evidence is that which has any tendency to make a fact in issue more or less probably.[108] Evidence that does so is deemed logically relevant. Determining whether or not the evidence is logically relevant is essentially a tiered inquiry consisting of materiality and probativeness. To be material, the evidence must bear on an issue in the case. If it does not, it is immaterial and, thus, cannot be relevant. Assuming the evidence in question is material, an inquiry into whether it actually makes the issue more or less probably is required. If the evidence makes the issue more probably, it is probative and the evidence is now relevant.[110] Ascertaining materiality with regard to novel scientific evidence presents no apparent problems beyond those of other forms of evidence. Decisions involving the admission of scientific evidence, however, do tend to pay more attention to the second part of the inquiry--the issue of probativeness.

This issue of probativeness generally is framed in terms of reliability.[111] Logic dictates that if evidence is unreliable, or more precisely if it lacks reliability, then it does not make any fact in issue more or less probable. This approach has become part and parcel of the military courts' Military Rule of Evidence 401 analysis, and, as a result, a

prerequisite to the admission of novel scientific evidence.[112] The problem with the military's use of a "reliability" standard as part of a Military Rule of Evidence 401 analysis is that the term is ill-defined in military case law. Gipson, which expressly makes reliability under Military Rule of Evidence 401 applicable, said little to quantify reliability beyond stating that Military Rule of Evidence 702 would require a "greater quantum" of reliability than that required by the dictate of logical relevancy.[113] How much greater is not clear. At the same time, Gipson failed to set forth which is supposed to be reliable.[114] As a result, weight/admissibility distinctions remain blurred.

In fairness, the Gipson court did provide some assistance to those who would apply its new standard, although ironically in the form of Frye. Despite Frye's rejection as the "be-all-end-all standard," the Court of Military Appeals held that general acceptance remained a factor for consideration by courts, both as to the issue of probativeness (Rule 401) and that of helpfulness (Rule 702).[115] Therefore, if evidence passes muster under the old Frye standard, it should generally survive a Gipson review.[116]

Ironically, additional assistance in defining the relevancy approach as adopted by the military was provided by the Army Court of Military Review in Bothwell.[117] Though that court retained Frye, it set forth the areas of reliability it felt Military Rule of Evidence 401 affected. In determining reliability of scientific evidence, the court suggested an inquiry into three factors: 1) the validity of the principle underlying the technique used; 2) the validity of the technique itself; and 3) the proper application of the technique on the particular occasion that resulted in generation of the evidence.[118] AS in Gipson, the lack of quantification is one problem posed by the suggested methodology. Additionally, remember that Bothwell is technically nothing more than persuasive authority. Nevertheless, the case does provide some semblance of methodological order for courts struggling through the imprecision of Gipson.

The case also can serve as a framework for developing an argument on the issue of admissibility versus weight. In that Bothwell calls for a review of the entire scientific process, from principle to application, one can argue that the admissibility/weight distinction is one of degree, not of subject matter, when considering novel scientific evidence. For example, the question is not whether concerns about a principle will fall within the purview of the judge as the finder of the law or the members as the finder of the fact. Instead, the issue is whether the concerns have reached a level at which the judge, as a matter of law, will refuse to allow the jury to consider the evidence.

The process of defining reliability in a usable way is difficult. In the effect to determine the limits of inquiry, even reliance on the well-reasoned Bothwell decision leaves one foundering, for subjectivity pervades the entire process. Though law is certainly no stranger to subjectivity, that which exists in making reliability determinations poses particular difficulty. The standards does exist, however, and the three Bothwell inquiries will assist litigators and the judiciary to address the issue with a semblance of coherence.

VII. Military Rule of Evidence 702

Assuming scientific evidence meets the requirements of Military Rules of Evidence 401 and 402, it then must be analyzed against Military Rule of Evidence 702. Reliability, as with Military Rule of Evidence 401, is the key to Military Rule of Evidence 702.[119] With regard to Rule 702 reliability, however, the Gipson court provided a much greater indication of what it meant by the term than it had when discussing Military Rule of Evidence 401. Basically, the test is "helpfulness" to the fact finder;[120] that is, an indication that the court logically concluded that unreliable evidence is unhelpful.[121] This assumption led to the court's articulation of three factors that must be balanced when determining helpfulness.

As noted earlier, in Gipson the Court of Military Appeals adopted the Downing court's analysis of helpfulness.[122] Military courts now will be required to evaluate the soundness and reliability of the process or technique; the possibility of misleading, overwhelming, or confusing the jury; and the extent of the connection between the evidence and the disputed factual issue.[123] Obviously, these aspects again present the problem of quantification. In other words, the imprecision in distinguishing between admissibility and weight issues remains. Unfortunately, the court did little to resolve the issue beyond noting that a greater degree of reliability will be required than in a Military Rule of Evidence 401 inquiry.[124] The weight versus admissibility issue is, therefore, both a Military Rule of Evidence 702 and a Rule 401 issue. Presumably, the trial judge will be able to decide when the controversy over reliability is severe enough to merit taking the issue from the jury entirely by ruling the evidence inadmissible.[125]

In setting forth the first tier of a Military Rule of Evidence 702 inquiry, the Gipson court neglected to discuss what is meant by soundness and reliability of the technique or process. Though such an omission normally would be fatal in the attempt to develop an analytical methodology, the near total reliance of the court on the Downing decision can be used to flesh out the definition. Perceiving the problems courts might encounter in assessing reliability, the Third Circuit set forth a number of factors that might be considered. First and foremost is the degree of acceptance of the technique or process.[126] In essence, this is a quasi-Frye analysis. Certainly, if a technique or process has gained general acceptance in the scientific community, it is probably reliable. On the other hand, the Downing court notes that "a known technique which has been able to attract only minimal support within the community is likely to be found unreliable."[127] The grey area between "general acceptance" and "minimal support" requires further elucidation.

To flesh out the grey area, Downing suggests a number of tactics. Beyond acceptance, a court may consider the uniqueness or novelty of a technique or process. On other words, given a novel scientific technique, to what extent is it based on established and well-accepted principles? Similarly, the technique or process may have been critiqued in literature from the relevant field of study. In both these cases, the key is the extent to which the "scientific basis of the new technique has been subjected to critical scientific scrutiny."[128] Other factors that might be

addressed include the "qualifications and professional stature of the witnesses," the "non-judicial uses to which the scientific technique are put," "the frequency with which a technique leads to an erroneous results,"[129] and the "type of error"[130] generated. Of course, a court always could choose to take judicial notice of testimony supporting or attacking the technique in prior cases.[131]

The Gipson decision also provided little guidance on how to ascertain whether the evidence would overwhelm, confuse, or mislead the members, particularly in light of the Military Rule of Evidence 403 limitations. Again by focusing on the Downing decision, however, one at least can sense the type of issues the courts would address. Obviously, one danger is the Addison "mystic infallibility"[132] concern.[133] In noting this problem the Downing court clearly felt the need to address the concerns of those who opposed rejection of Frye. Frye was meant in great part to avoid the "mystic infallibility" of scientific evidence in the eyes of the layman. The Downing court's alternation of the standard of admissibility was no reason to assume this problem would vanish.[134] Therefore, the relevancy test does tackle the problem through a tier of the newly articulated 702 inquiry. To the extent a piece of scientific evidence will generate undue credibility and be afforded undue weight by the fact finder simply because of its scientific nature, the evidence is more likely to be deemed inadmissible when the probative versus prejudicial balancing occurs.

The irony is that this approach simply restructures the Frye response to the problem. Under Frye, those best able to assess the evidence would pass judgement on its admissibility. If less than generally accepted evidence meets the first tier of the Rule 702 analysis under Downing/Gipson (soundness and reliability), however, the propensity to mislead or confuse is compounded by the "mystic infallibility" phenomena because the evidence is less reliable than it would have been under Frye. Logically, less reliable evidence poses greater dangers of misleading, confusing, or overwhelming the fact finder. the unanswered question is, of course, how the balance plays itself out. Would more evidence be inadmissible based on lack of general acceptance under Frye than would be if based on confusion under the relevancy test, given the lesser degree of acceptance that test requires? That remains to be seen.

Two additional potential scenarios are singled out in Downing as posing particular dangers. The greater danger involves the offer of conclusions by the expert witness without a critical assessment of the underlying data.[135] In these cases, the expert serves as his own "scientific jury" and propounds his own evaluation of the accuracy of the evidence. This is problematic because, under the relevancy standard, the task of demonstrating reliability is less onerous. The proponent no longer needs to present the "ruling" of the "scientific jury" prior to admission.[136] Instead, he need only convince the judge, a layman in the field of science.

The second problem cited in Downing is that of subjectivity. As the court noted, scientific evidence often is generated in raw form by mechanical devices. Then the duty of the expert is to evaluate the evidence subjectively.[137] The classic example, of course, is found in polygraphy. Again, subjectivity is a greater danger under the relevancy test than under

Frye because the process by which the expert subjectively evaluates the data undergoes less scrutiny. Therefore, in the absence of strict scrutiny of the process, there exists a significant potential for subjectivity flaws in a relevancy approach to 702.

Once the court has considered the degree of reliability and the potential to confuse, mislead, or overwhelm, it must balance the two.[138] In Downing, the Third Circuit purposefully declined to enunciate the foundation for doing so. It reasoned that because a balancing test that had police implications was being employed, imposing a standard as if the process involved only fact-finding would be inappropriate. Instead, it simply would use an abuse of discretion standard to review the decisions of lower courts.[139] In other words, the trial judge will have to ascertain when the balance, given the particular type of evidence involved and in light of other evidence adduced at trial, will tip in favor of admissibility or in favor of exclusion. Presumably, military courts will take the same approach.

If the reliability of the evidence outweighs the potential dangers, the court must consider the final factors implicit in Military Rule of Evidence 702--the proffered connection between the offered evidence and the fact in issue.[140] This issue is reminiscent of the Military Rule of Evidence 401 requirement that the evidence render a fact of "consequence ... more or less probable."[141] Generally, articulating the connection will not be an overly demanding task for the practitioner.[142] Further, because reliability already is described as a Rule 702 requirement, the issue actually will be one of materiality.[143] Therefore, assuming the reliability of evidence outweighs its dangers, the proponent need show only that it will help the fact finder resolve a disputed issue.[144]

VIII. Military Rule of Evidence 403

The last requirement under a Gipson relevancy analysis is that the probative value not be "substantially outweighed by the danger of unfair prejudice, confusion of the issues, or misleading the members, or by undue delay, waste of time, or needless presentation of cumulative evidence."[145] In assessing the balance, the presumption is in favor of admissibility. Furthermore, the judge will be granted a great deal of discretion in making this determination.[146] Many of the issues discussed above with regard to the Military Rule of Evidence 702 focus on these dangers are also relevant here. As pointed out above, however, Federal Rule of Evidence 403 is considered, at least in the Third Circuit, to be a stricter standard than the Rule 702 standard,[147] a precedent military courts probably will follow given the overall Gipson reliance on Downing. How and why the standard is different is not explained.[148] This imprecision is illustrated in United States v. Howard.[149] In that case the Coast Guard Court of Military Review considered the exclusion of polygraph results by the trial judge because the questions posed were ambiguous. It based its decision on Military Rules of Evidence 403 and 702.[150] Given the subjective nature of the standards, future military courts are likely to follow suit.[151]

IX. An Analytical Framework

A Gipson analysis of novel scientific evidence clearly is fraught with pitfalls. The primary problem is the lack of quantification and definition of the standards. Beyond adoption of a different standard,[152] little can be done to address this particular problem because the criteria chosen by the court inherently call for subjectivity. Therefore, practitioners must rely primarily on their advocacy skills during admissibility hearings and must trust that judges will exercise their broad discretion wisely.[153]

A more approachable problem is that the standard fails to offer a point-by-point catalogue of the issues the court will address. In other words, issues tend to repeat themselves in the guise of criteria for varying rules of evidence. For example, reliability is the subject of inquiry in both a Military Rule of Evidence 401 and a Military Rule of Evidence 702 analysis. The same is true of the Military Rules of Evidence 403 and 702 confusing, misleading, or overwhelming dangers. Even accepting the court's articulated distinctions, the substantive elements of these two examples remain constant from rule to rule. Those distinctions that do exist are merely ones of degree. Nevertheless, the similarities permit proposal of a cohesive methodology for the practitioner that combines components of the various rules. Of course, combining common elements of different rules of evidence will not be responsive to the differences of degree asserted by both Downing and Gipson. However, in the absence of clear guidance concerning what those differences are, this point is, in practical terms, irrelevant. Judges will base their decisions on their own estimation of whether the standards have been met, citing the more restrictive rule in close cases. Although this analysis may sound overly cynical, actually it is simply a recognition of the existence of judicial discretion.

In the aftermath of Downing and Gipson, certain areas of inquiry emerge that cut across the somewhat hazy process that would exist in a rule by rule analysis. The analytical framework set forth below is offered to help the practitioner organize an approach to novel scientific evidence. No relevancy analysis would be complete without considering each of the following points:

1) To what extent does the witness qualify as an expert by virtue of his or her knowledge, skill, experience, training, or education (Military Rule of Evidence 702)?

2) To what extent is the offered evidence connected or material to the fact in issue (Military Rules of Evidence 401 and 702)?

3) How valid are the principles underlying the technique used to generate the evidence (Military Rules of Evidence 401 and 702)?

4) How valid is the technique or process used to generate the evidence (Military Rules of Evidence 401 and 702)?

5) To what extent was the application of the process or technique as to this particular evidence and in this particular instance proper (Military rules of Evidence 401 and 702)?

6) To what extent will admission of the evidence overwhelm, confuse, or mislead the jury, and what is the balance between these factors and the probative[154] value of the evidence (Military Rules of Evidence 401, 403, and 702)?

7) To what extent do concerns of judicial economy affect the balance in question 6) (Military Rule of Evidence 403)?

8) Can the evidence be excluded on constitutional grounds, due to the evidentiary rules, or because of other reasons?

With the exception of the final question, each inquiry requires an answer that must be placed along a continuum. This was done purposefully to emphasize the discretionary powers of the judiciary in this area. The practitioner also must realize that the answers to these questions probably will have a synergistic effect on the ultimate exercise of that discretion.[155] Regardless of the way discretion plays itself out, however, a complete analysis of proffered novel scientific evidence must respond to each of these questions. Finally, the relevancy approach provides fertile ground for argument that any problems with scientific evidence identified by the above analytical framework should go to the weight of the evidence, not to its admissibility. As mentioned previously,[156] the assumption that jurors cannot deal critically with scientific evidence may be unwarranted, especially in courts-martial. In fact, jurors in a court-martial actually may be better able than the judge to assess some types of scientific evidence. With this in mind, an advocate might argue that the relevancy approach, with its less restrictive posture towards scientific evidence, demands that the members be permitted to assign the appropriate weight to a piece of evidence, and that the judge should refuse to admit scientific evidence only under very rare circumstances.

X. Conclusion

From 1923 to the mid 1980's, the admissibility of scientific evidence in most courts of the United States, including courts-martial, was governed by the general acceptance standard. This standard required that the scientific principle and technique involved in the creation of a certain piece of evidence be accepted generally by the field to which the principle belonged. Recently, the relevancy approach, which appears to be far less restrictive, has been adopted by some federal courts and the military courts. Whether or not the relevancy approach actually will create a less restrictive atmosphere for the reception of scientific evidence in courts-martial remains to be seen. In adopting the relevancy approach, the Court of Military Appeals did not articulate clear, quantifiable standards for its application. Although a degree of uncertainty exists with regard to the application of the relevancy approach, as forensic science becomes increasingly more sophisticated, the standard certainly will receive further critical attention, and clearer standards necessarily will result.

NOTES:

[1] United States v. Ford, 16 C.M.R. 185 (C.M.A. 1954). Analysis of blood and urine only detects recent drug abuse because chemical evidence of drugs and alcohol in bodily fluids dissipates rather rapidly depending on the drug, the amount used, and the metabolism of the individual.

[2] E.g., United States v. Carter, 26 M.J. 428 (C.M.A. 1988); United States v. White, 23 M.J. 84 (C.M.A. 1986).

[3] See, e.g., United States v. Gipson, 24 M.J. 246 (C.M.A. 1987); United States v. Abeyta, 25 M.J. 97 (1987). Assuming the polygraph examination was administered by a Department of Defense or similarly-certified polygrapher, the questions asked at the examination were relevant, and the subject of the test testifies at trial, theoretically no barrier should exist to the admissibility of the polygrapher's testimony.

[4] Evidence derived from scientific techniques that are neither judicially noticed as a matter of course nor rejected out of hand as unreliable, are deemed "novel."

[5] For a discussion of DNA evidence in the military context, see Schmitt and Crocker, DNA Typing: Novel Scientific Evidence in the Military Courts, 32 A.F.L. Rev. 227 (1990). Much of the substance of the instant piece results from research and writing accomplished while producing that article. For an interesting article arguing that DNA profiling is currently scientifically unreliable, see Hoeffel, the Dark Side of DNA Profiling: Unreliable Scientific Evidence Meets the Criminal Defendant, 42 Stan. L. Rev. 465 (1990).

[6] Drug analysis of hair has been used in the following cases: People v. Robert Korner, No. 154558, Santa Barbara Superior Court, 1985, and People v. Mart Miel, No. 804003, Los Angeles Superior Court, 1985. The authors are unaware of any appellate case that has reviewed this type of evidence. The technique used in the analysis of hair--radioimmunoassay--is nearly identical to the technique used in urinalysis. The underlying theory is that as the blood circulates through the body the metabolites, or by-products created when the body breaks down a particular drug, are stored in the hairs of the body. As the hair grows, the chemical evidence remains within. Thus, depending on the length of the hair being analyzed, a record of drug ingestion may be determined that covers several months or even longer.

[7] 293 F. 1013 (D.C. Cir. 1923).

[8] Id. at 1014 (emphasis added).

[9] Id.

[10] See, e.g., United States v. Addison, 498 F.2d 741 (D.C. Cir. 1971).

[11] In the words of the D.C. Circuit, "scientific proof may in some instances assume a posture of mystic infallibility in the eyes of a jury of layman ...: Id. at 744. This paternalistic attitude toward the jury is an aspect of the Frye test that has been attacked by opponents. See infra note 51.

[12] See Black, A Unified Theory of Scientific Evidence, 56 Fordham L. Rev. 595, 636-637 (1988).

[13] Despite concerns about the "mystic infallibility" of scientific evidence, the jury is free to assign whatever weight it feels is appropriate to any piece of evidence. Indeed, the jury is even free to disregard it completely. That scientific evidence often is disregarded, or at least not completely relied upon, should be clear to any counsel who has participated in a urinalysis case that resulted in acquittal. Arguably, "mystic infallibility" could pose a greater danger in the military because of the educational background of the court members. In that virtually all officers have college degrees, court members are likely to have been exposed to the "potential of science." Thus, though science will not seem as mystic, it may seem more infallible. The contrary might be true of individuals who lack the education of the average military court member.

[14] Addison, 498 F.2d at 744.

[15] People v. Kelly, 17 Cal.3d 24, 31, 549 P.2d 1240, 1245 (1976).

[16] One court using the Frye standard to analyze voiceprint evidence noted that "[c]ommunication by speech does not fall within any one established category of science. Its understanding requires a knowledge of anatomy, physiology, physics, psychology, and linguistics." People v. King, 266 Cal. App. 437, 456, 72 Cal. Rptr. 478, 490 (1968).

[17] The term "principle" applies to the scientific rules or theories relied upon by scientists in developing the evidence. The term "technique" refers to the means by which the principle is applied. For instance, polygraphy is based on the principle that conscious deception causes physiological stress that can be

measured. The actual measurement of the physiological changes by the polygraph itself, and the formulation of an opinion by the examiner, is the technique by which the principle is applied.

18 See generally Frye, 293 F. 1013. Of course, this point begs the question of whether the court would have inquired subsequently into the reliability of the technique if the principle involved had been deemed generally accepted.

19 Seattle v. Peterson, 39 Wash. App. 524, 693 P.2d 757 (1985). In this case the court specifically noted that the principle underlying the Doppler radar speed detector was not at issue. Instead, the issue was whether the machine itself and the results it produced were reliable.

20 Compare United States v. Gould, 741 F.2d 45, 49 (4th Cir. 1984)(court required "substantial acceptance") with People v. Guerra, 37 Cal.3d 385, 690 P.2d 635, 656 (1984)("clear majority" was needed). One thing is certain: general acceptance requires more than a single individual. "You cannot accept a technique simply because the Nobel Prize winner takes the stand and testifies, 'I have verified this theory to my satisfaction, and I stake my professional credentials on the theory.'" Imwinkelried, The Standard for Admitting Scientific Evidence: A Critique from the Perspective of Juror Psychology, 100 Mil. L. Rev. 99, 104 (1983).

21 In considering scientific evidence using the Frye test, this issue is critical. Defining the field too narrowly could result in an insufficient number of experts to convince a court that general acceptance existed. For example, in assessing DNA evidence, should the field be defined as genetics, population genetics, or forensic DNA analysis?

22 A major issue is whether technicians should be able to testify as well as scientists. Some courts recognize that technicians may be in the best position to determine the reliability of the technique involved in the creation of scientific evidence while other courts have taken a more restrictive view. Compare People v. Young, 391 N.W.2d 270 (Mich. 1986) with People v. Reilly, 196 Cal. App.3d 1127 (1987).

23 The three generally accepted methods of proof are expert testimony, scientific and legal writings, and judicial opinions. Giannelli, The Admissibility of Novel Scientific Evidence: Frye v. United States, A Half Century Later, 80 Colum. L. Rev. 1197, 1215 (1980).

24 The emergence of scientific evidence in criminal trials has been, according to some, the indirect result of cases like United States v. Wade, 388 U.S. 218 (1967), and Miranda v. Arizona, 384 U.S. 436 (1966). Those cases restricted the methods that police traditionally used to obtain evidence, such as interrogations and line-ups. Giannelli, supra note 23, at 1199. These judicially-created restrictions on police activity forced law enforcement officials to seek out new means of establishing guilt. Scientific evidence became popular because it generally can be obtained with far less intrusion on personal privacy than those methods found unconstitutional by the Supreme Court.

25 There are numerous federal cases adhering to the Frye standard. See, e.g., Barrel of Fun, Inc. v. State Farm and Fire Casualty Co., 739 F.2d 1028 (5th Cir. 1984); United States v. Distler, 671 F.2d 954 (6th Cir.), cert. denied, 454 U.S. 827 (1981); United States v. Tranowski, 659 F.2d 750 (7th Cir. 1981); United States v. McDaniel, 538 F.2d 408 (D.C. Cir. 1976). In United States v. McBride, 786 F.2d 45 (2d Cir. 1986), the Frye standard was used to overturn a lower court's ruling that had excluded scientific evidence. In that case, the trial judge did not allow psychiatric testimony that, due to a brain injury, the defendant could not have formed the requisite specific intent to commit the crime. Apparently, the trial judge determined that the type of evidence proffered had not gained general acceptance, he noted that "psychiatry was still in its infancy." McBride, 786 F.2d at 50. The appellate court disagreed and overturned the decision. This case raises the issue of whether an appellate court should overturn a trial court's decision on general acceptance when, as a result of further testing and experience, scientific evidence actually does become generally accepted in the interval between the decisions of the trial court and the appellate court. Because a district court judge has broad discretion with regard to the admissibility of expert testimony, an appellate court presumably would base its decision only on the degree of acceptance that existed at the time of the trial judge's decision, even if the scientific evidence had gained more acceptance by the time it made its decision. If law is a search for truth, this is probably an unacceptable result.

26 Pub. L. No. 93-595, 88 Stat. 1926-49 (1975).

27 Fed. R. Evid. 702: "If scientific, technical or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill experience, training or education, may testify thereto in the form of an opinion or otherwise."

[28] Drafters' Analysis, Fed. R. Evid.

[29] Advisory Committee Notes, Fed. R. Evid.

[30] Though Professors Saltzburg and Redden note that "[i]t would be odd if the Advisory Committee and the Congress intended to overrule the vast majority of cases excluding such evidence as lie detectors without explicitly stating so," S. Saltburg & K. Redden, Federal Rules of Evidence Manual 633 (4th ed. 1986), it would be equally odd if the Committee and Congress intended to retain such a well-established standard without mentioning it or the case upon which it was based. By 1975, the general acceptance standard had been articulated well and frequently. An assertion that the standard set forth in Federal Rule of Evidence 702 was an attempt on the part of the drafters to codify existing case law may be a bit hard to swallow. An early case that struggled with the competing concerns about Frye is United States v. Brown, 557 F.2d 541 (6th Cir. 1977). Ultimately, the Sixth Circuit would elect to retain the general acceptance standard. At issue in Brown was the attempted admission of evidence based on ion microphobic analysis--a process that measures the element content of hair samples. Specifically, testimony relating tot he source of three hairs found on a bottleneck at the site of a firebombing was challenged. the court began its analysis by noting the trend towards relaxed admission since the promulgation of federal Rule of Evidence 702. It further noted that general acceptance in the relevant scientific community is not a prerequisite to admissibility. The court, however, then went on to address the countervailing right of the defendant to a fair trial: "[t]he fate of a defendant in a criminal prosecution should not hang on his ability to successfully rebut scientific evidence which bears an 'aura of special reliability and trustworthiness,' although, in reality the witness is testifying on the basis of an unproved hypothesis in an isolated experiment which has to yet gain general acceptance in its field." Id. at 556. Given this analysis, would the court have reached the same decision if the evidence had been offered to exonerate the accused? If the goal is protection of the accused, maybe the best approach is to tie the threshold degree of acceptance or reliability to the side that is offering the evidence; that is, granting the defense in a criminal trial a more relaxed standard. See infra note 152.

[31] Professor Imwinkelried makes an interesting point in this regard by focusing on the language of Federal Rule of Evidence 402: "All relevant evidence is admissible, except as otherwise provided by the Constitution of the United States, by Act of Congress, by these rules, or by other rules prescribed by the Supreme Court pursuant to statutory authority. Evidence which is not relevant is not admissible." Pointing out that "case law" is not one of the exceptions listed, he notes that the failure to mention the Frye standard in the text of 702 indicates the standard no longer exists. This result derives from application of basic rules of statutory construction and interpretation. Imwinkelried, supra note 20, at 105. Such an approach, however, very well might trivialize the role of precedent in our judicial system, as well as assume omniscience on the part of the drafters of the Federal Rules of Evidence.

[32] Though the relevancy standard is less demanding in terms of admissibility, it is certainly more demanding in terms of litigation. General acceptance requires little more than determining the make-up of your scientific jury and then polling it. Relevancy, as we shall see, involves the complex task of litigating the synergistic effect of multiple rules.

[33] For example, consider the Fourth Circuit's approval of admission of spectrographic voice analysis evidence in United States v. Baller, 519 F.2d 463 (4th Cir.), cert. denied, 423 U.S. 1019 (1975). Addressing the standard of admissibility, the Fourth Circuit held that "[u]nless an exaggerated popular opinion of the accuracy of a particular technique makes its use prejudicial or likely to mislead the jury, it is better to admit relevant scientific evidence in the same manner as other expert testimony and allow its weight to be attacked by cross-examination and refutation." Id. at 466.

[34] General acceptance allows the scientific community to determine reliability and thereby keep unreliable evidence from the jury. In contrast, the relevancy approach, with its lower standard of admissibility, permits the jury to hear evidence that the general acceptance standard would preclude and to make its own determination concerning reliability. This broadening of jury responsibility arguably results in a corresponding return of law to the "law finder"; that is, the judge. The judge now is deemed responsible for making the sort of relevancy decisions familiar to him beyond the realm of novel scientific evidence. the sophisticated nose counting called for under the general acceptance standard becomes only a peripheral activity for the judiciary.

[35] These and other questions are the basis of the relevancy rules of evidence, Federal and Military Rules of Evidence 401-403. Such questions are also the basis of the "helpfulness standard" found in the

expert testimony rule. Fed. R. Evid. 702 and Mil. R. Evid. 702. For a decision focusing on the degree of "help" evidence offers the fact finder, see United States v. Gwaltney, 790 F.2d 1378 (9th Cir. 1986). The court held that the seminal issue was whether the jury could receive "appreciable help" from the evidence. Id. at 1381.

[36] In United States v. Williams, 583 F.2d 1194 (2d Cir. 1978), cert. denied, 439 U.S. 1117 (1979), the court noted that "probativeness, materiality, and reliability of the evidence on one side, and any tendency to mislead, prejudice, or confuse the jury on the other, must be the focal points of inquiry." Id. at 1198. Spectrographic evidence was held to have been admitted properly.

[37] The Second Circuit succinctly noted the shift in approach: "In testing for admissibility of a particular type of scientific evidence, whatever the scientific 'voting' pattern may be, the courts cannot ... surrender to the scientists the responsibility for determining the reliability of that evidence." Id.

[38] 753 F.2d 1224 (3d Cir. 1985).

[39] Id. at 1226.

[40] S. Saltzburg and K. Redden, Federal Rules of Evidence Manual 452 (3d ed. 1982).

[41] Gianneli, supra note 23, at 1249-50.

[42] State v. Temple, 302 N.C. 1, 273 S.E.2d 273 (1981).

[43] United States v. Williams, 583 F.2d 1194 (2d Cir. 1978), cert. denied, 439 U.S. 1117 (1979); State v. Hall, 297 N.W.2d 80 (Iowa 1980).

[44] Downing, 753 F.2d at 1232-35.

[45] Fed. R. Evid. 401: "Relevant evidence means any evidence having any tendency to make the existence of any fact that is of consequence to the termination of the action more probable or less probable than it would be without the evidence."

Fed. R. Evid. 402: "All relevant evidence is admissible, except as otherwise provided by the Constitution of the United States, by Act of Congress, by these rules, or by other rules prescribed by the Supreme Court pursuant to statutory authority."

Fed. R. Evid. 403: "Although relevant, evidence may be excluded if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues or misleading the jury, or by considerations of undue delay, waste of time, or needless presentation of cumulative evidence."

[46] The fairness/truth distinction is characterized best by differences between the common law (e.g., United States, Great Britain and Australia) and the civil law (e.g., continental Europe) systems. The common law system, often deemed accusatorial in nature, places a great deal of emphasis on procedural and evidentiary law. By contrast, in civil law countries the judge, rather than the attorney, guides the inquiry and does so unhindered by complex rules of evidence or procedure. Thus, the system often is labeled inquisitorial. The distinction might best be illustrated by the comment, "He got a fair trial." Such a comment, commonplace in the United States, would seem out of place in France or Germany. For the French or Germans, a fair trial is simply one in which guilty defendants are convicted and innocent ones are acquitted. This attitude also is reflected in the nature of appeals. In common law countries, appeals generally are limited to issues of law. Civil law jurisdictions generally permit at least one appeal on factual findings.

[47] Fed. R. Evid. 402, see supra note 45.

[48] 753 F.2d at 1235.

[49] Id.

[50] Id. For a discussion of the background underlying the effort to produce a uniform set of evidentiary guidelines, see S. Saltzburg and K. Redden, supra note 30, sections 106.

[51] Downing, 753 F.2d at 1235. One of Professor Imwinkelried's arguments against the Frye standard concerned this paternalistic attitude toward the jury. Imwinkelried, supra note 20, at 113. He concludes that the assumption that jurors are unable to assign appropriate weight to scientific evidence, one of the primary rationales for the existence of the Frye standard, simply is unwarranted. He cites studies conducted in civilian forums that establish just the opposite--that lay jurors are able to evaluate critically scientific evidence. Finally, he mentions that his conclusion has special significance for courts-martial because jurors there are generally more sophisticated and better educated than their civilian counterparts. If civilian jurors can handle scientific evidence, surely military jurors can. Id. at 117. But see supra note 13.

[52] 753 F.2d at 1236, see supra text accompanying notes 20-22.

[53] 753 F.2d at 1236.

[54] This argument is unsatisfactory because it fails to recognize that the goal of a judicial system is not a balance between the government and the defense in the system generally, but rather fairness in a particular trial. The exclusion of reliable but not generally accepted exculpatory evidence in a particular trial is hardly a neutral flaw for the now-convicted defendant.

[55] See Downing, 753 F.2d at 1236-37. The court cites United States v. Sample, 378 F.Supp. 44 (E.D. Pa. 1974), as an example of a case in which a court expresses concern over the exclusion of relevant evidence. United States v. Addison, 498 F.2d 741 (D.C. Cir. 1974), is cited as representing the opposite view.

[56] 753 F.2d at 1237.

[57] "[G]general acceptance in the particular field ... should be rejected as an independent controlling standard of admissibility. Accordingly, we hold that a particular degree of acceptance of a scientific technique within the scientific community is neither a necessary nor a sufficient condition for admissibility; it is, however, one factor that a district court normally should consider in deciding whether to admit evidence based on the technique." Id.

[58] Id.

[59] Id. at 1235.

[60] Id.

[61] There is a notable absence of effort to make the distinction in subsequent cases. Because the Rule 702 standard is theoretically higher, courts can be expected generally to base their opinions on that rule, using language that will sound identical to a Rule 401 ruling. See, e.g., United States v. Howard, 24 M.J. 897 (C.G.C.M.R. 1987).

[62] 753 F.2d at 1242-43.

[63] Exec. Order No. 12198 (1980).

[64] See, e.g., United States v. Hulen, 3 M.J. 275 (C.M.A. 1977); United States v. Ford, 16 C.M.R. 185 (C.M.A. 1954). The Ford case, which involved urinalysis, was the first military case to endorse the general acceptance standard. In 1967, in United States v. Wright, 37 C.M.R. 447 (C.M.A. 1967), the Court of Military Appeals became the first appellate tribunal to uphold the admissibility of voiceprint evidence despite the fact that research had not established general acceptance of the technique. According to Judge Ferguson, who dissented, this signified an abandonment of the general acceptance standard and adoption of much more lenient standard against which even polygraph evidence would be admissible. Id. at 454 (Ferguson, J., dissenting). This was not to be because ten years later the Hulen case firmly reconfirmed the general acceptance standard first announced in Ford, 3 M.J. at 275-77.

[65] S. Saltzburg, L. Schinasi & D. Schlueter, Military Rules of Evidence Manual 1 (2d ed. 1986).

[66] Military Rules of Evidence 401, 403, and 702 are identical to their federal counterparts. See supra notes 27, 45. Military rule of Evidence 402 is identical to Federal Rule of Evidence 402 in intent and effect, but includes as limitations sources of law unique to the military. "All relevant evidence is admissible, except as otherwise provided by the Constitution of the United States as applied to members of the armed forces, the code, these rules, this Manual or any Act of Congress applicable to members of the armed forces. Evidence which is not relevant is not admissible." Mil. R. Evid. 402.

[67] 17 M.J. 684 (A.C.M.R. 1983). Prior to Bothwell, there existed some inkling of the debate that would emerge in the military courts. In United States v. Martin, 13 M.J. 66, 68 n.4 (C.M.A. 1982), the Court of Military Appeals noted that Military Rule of Evidence 702 might broaden Frye. It did not have to address the issue, however, because Military Rule of Evidence 702 was not in effect at the time of trial. Additionally, the evidence was found to be generally accepted and, thus, would have passed muster even under the forthcoming relevancy test. Id. at 67-68. Later, Judge Everett, in dicta, found in his dissenting opinion in United States v. Moore, 15 M.J. 354, 372 (C.M.A. 1983)(Everett, J., dissenting), that "the Frye test still has vitality." This was not an issue, however, because, as with Martin, the trial predated the rules.

[68] Though not directly relevant to this discussion, the ultimate decision of the court is interesting. The trial judge refused to permit the defense to lay a foundation for the PSE. In other words, he did not permit testimony on the reliability or general acceptance of the test. On appeal, this was found to be error. Rather than remanding, however, the court looked at state and federal cases, as well as several articles, and concluded that it was "unable to imagine anything which [the expert] could have said that might have led the military judge to conclude that PSE enjoys general acceptance in the scientific community."

Thus, the error was harmless. 17 M.J. at 688. Two problems with this result exist. If it was so clear that the proffered evidence was unreliable that the appellate court could reject it out of hand, then why was the trial court wrong to do likewise? Certainly, not all evidence merits an admissibility hearing. Evidence based on astrology or voodoo probably could be rejected without a hearing. Additionally, the court claimed PSE was in the "experimental rather then the demonstrable stage." Id. at 688. To support this claim, it cited cases, House Committee hearings, and articles as aged as nine years old. Id. Though it very well may be the case that PSE was still in the experimental stage in 1983, to cite nine-year-old scientific support is questionable.

69 Id. at 686-87.

70 Id.

71 Id. at 687 (citing Addison, 498 F.2d 741-744 (D.C. Cir. 1971)).

72 Id. Does this suggest that the court defines Military Rule of Evidence 702 as meaning that anytime the judge finds the probative value outweighed by the prejudicial effect, no matter how slightly so, the evidence should be deemed inadmissible? Such an interpretation would vest enormous discretion in trial judges handling this inherently subjective issue.

73 In other cases, the question was avoided when possible. For example, in United States v. Lusk, 21 M.J. 695 (A.C.M.R. 1985), the issue was the admissibility of a Becton-Dickinson Duquenois test for the presence of marijuana. Although the court noted that the new Military Rules of Evidence cast doubt on Frye, this particular test was accepted generally. Id. at 699. As a result, the court did not have to address the problem of a test that was not generally accepted, but might, nevertheless, meet a lower standard (if one existed).

74 18 M.J. 172, 178 (C.M.A. 1984). The court went on to note that "the essential limiting parameter is whether the testimony 'will assist the trier of fact to understand the evidence or to determine a fact in issue.'" Id.

75 Id. at 179.

76 22 M.J. 165 (C.M.A.), cert. denied, 479 U.S. 953 (1986).

77 Id. at 167. A second objection was that the CID agent was not a qualified expert. This issue is related to the general acceptance issue because it likewise turns on a determination of how broad Military Rule of Evidence 702 was meant to be. The CID agent had attended a five-day course by one of the preeminent practitioners in the field and received other unspecified training, but was not a chemist, nor had he written on the subject. Additionally this was only his second case involving the technique. The court found that he was an expert. Id. at 168. In a beautiful piece of judicial draftsmanship, it noted that "[g]iven the broad language of Military Rule of Evidence 702, we have no doubt that Sherlock Holmes could be eminently qualified as an expert in this field." Id. at 168 n.6. This decision is indicative of the court's new approach to admissibility and previewed how the broader approach would affect the Frye standard.

78 Id. at 168. The court did not address the term "general acceptance." Instead, its finding that a body of "specialized knowledge" existed was based on three factors; 1) state courts had accepted similar evidence; 2) the technique was based on established laws of physics and common sense; and 3) the process was capable of quantification. Id. Clearly, the court was looking to the issue of reliability, but not depending on a "scientific vote" in doing so.

79 Id.

80 By labeling the expert testimony "helpful, i.e., relevant", it is unclear whether the court is using Military Rule of Evidence 702 or Military Rules of Evidence 401 and 402 as the standard. Rule 702 deals with helpfulness, whereas Rules 401 and 402 involve relevancy. The wording of the decision would suggest the terms are synonymous. Further, the decision mentions all three rules without ever clearly distinguishing among them. This type of imprecision reappears in subsequent decision such as United States v. Gipson, 24 M.J. 246 (C.M.A. 1987). The result is that it becomes extremely difficult for trial practitioners to deal with novel scientific evidence in a systematic way.

81 93 L.Ed.2d at 393 (White, J., and Brennan, J., dissenting). Such a ruling, whether finding incorporation or not, obviously would have had enormous impact in the federal courts, as well as the military courts.

82 17 M.J. 684.

83 18 M.J. 165.

[84] 22 M.J. 165.

[85] 93 L.Ed.2d at 392.

[86] Id. at 393.

[87] 24 M.J. 246 (C.M.A. 1987). Interestingly, Gipson generally is characterized as an important case because of the issue of polygraph admissibility. Actually, that is not the reason Gipson is a seminal case for the military practitioner. Instead, its importance lies in the fact that it overruled prior military case law that employed the Frye standard in assessing novel scientific evidence. The case could have involved any novel scientific technique or process and would have had precisely the same effect on the admissibility of polygraphs.

[88] A motion in limine would be an appropriate way to raise the issue of admissibility of novel scientific evidence. In making the tactical choice of when and whether to make the motion, litigators should remember that the burden of persuasion is generally on the party making the motion or raising the objection. See MCM, 1984, Rules for Courts-Martial 801(e)(4),(5) and 801(g)[hereinafter R.C.M.]. Additionally, if the motion has resulted in the preclusion of novel scientific evidence, the proponent should insure the trial judge's essential findings (R.C.M. 905(d)) are as complete as possible. At minimum, the proponent should address all components of both the relevancy rules and Military Rules of Evidence 702. To the extent the findings on the record are incomplete, the judge should be asked to fill in the gaps. Similarly, if the proponent senses that the trial judge misunderstands the legal standard, he or she should ensure the misunderstanding is placed on the record. Doing so not only will preserve the issue for appeal, but also will give appellate litigators the material they need to work with. This is particularly important with regard to novel scientific evidence because, as advances in forensic science are made, the ability of appellate level courts to declare "harmless error" will diminish. For a brief, but extremely helpful, guide to motion practice in the military, see American Bar Association, Military Motions: A Handbook for Lawyers (1986).

[89] 24 M.J. at 247. An interesting question is why the defense was not permitted to attempt to lay a foundation even if the general acceptance standard was being used by the judge. Essentially, the judge was holding that the evidence was not generally accepted without taking evidence on that issue. This is similar to what happened in Bothwell. 17 M.J. at 684. If this practice was followed regularly, one must query how a technique or process that at one time might have been unreliable, but which subsequently was improved, ever would get into court. The trial judge in Gipson did note that the government was offering a potentially inculpatory polygraph. 24 M.J. at 247. Presumably, two different results was an indication of the general unreliability of polygraphs. Without taking evidence, however, how could the judge possibly have known whether the difference was the result of factors that would relate to admissibility or only of factors concerned with the appropriate weight to be afforded the seemingly divergent results?

[90] 753 F.2d 1224 (3d Cir. 1985).

[91] 24 M.J. at 250.

[92] Id.

[93] Id.

[94] Id. at 250-251.

[95] Id. at 251, see supra text accompanying note 58.

[96] M.J. at 251.

[97] Manual for Courts-Martial, United States, 1969, para. 142e (Rev. ed.).

[98] Gipson, 24 M.J. at 250.

[99] It could be read as an indication that the drafters, who were writing the new rules as the Federal Rule of Evidence 702 debate was occurring, were unsure of what standard to adopt and, therefore, were leaving it up to the courts. Arguably, the use of the word "may" was an indication that the military drafters felt it appropriate to retain Frye, but, given the current debate, were unwilling to do so until the issue was resolved as to Federal Rule of Evidence 702.

[100] See Gipson, 24 M.J. at 250-51. With regard to the failure to mention polygraphs, the drafters may have felt that it was poor draftsmanship to single out any one form of novel scientific evidence. Additionally, the omission may have been an indication of their belief that it would be inappropriate to exclude a category of evidence that might, over time and with advances in science, become generally accepted. This is of course speculation, but probably no more so than the court's own analysis of the deletion. The Drafters' Analysis sheds no light on this specific issue.

[101] Though concurring, Judge Everett seemed to have mixed emotions. He noted that "at the very least, the expert witness should be able to relate his theories to scientific principles having a substantial body of adherents." Id. at 255 (Everett, J., concurring).

[102] Id. at 251-52.

[103] See Gipson, 24 M.J. 246; see also United States v. Abeyta, 25 M.J. 97 (C.M.A. 1987); United States v. Dozier, 28 M.J. 550, 551 (A.C.M.R. 1989). Abeyta excluded polygraph evidence on the grounds that the accused did not testify, and therefore, it was not relevant. 25 M.J. at 98. Dozier held the trial court's exclusion of a speech pathologist's testimony to be error. 28 M.J. at 552. The pathologist would have testified that the accused did not make certain phone calls based on a phonetic transcription of his voice. Dozier is an important case because the court noted that the technique offered would have met the Frye test. Id. This illustrates that the test still may be used to meet the requirements of Gipson. As the Gipson court noted, in evaluating probativeness and helpfulness, "one of the most useful tools is that very degree of acceptance in the scientific community we just rejected as the be-all-end-all standard." 24 M.J. at 252.

[104] For an excellent discussion of the "relevancy test," see P. Giannelli & E. Imwinkelried, Scientific Evidence (1986). They note that the relevancy test has three steps: 1) identify the probative value of the evidence; 2) identify any countervailing dangers or considerations inherent in admission; and 3) balance the probative value against the dangers posed. In terms of probative value, when dealing with scientific evidence the focus should be on the reliability factor. P. Giannelli & E. Imwinkelried, Scientific Evidence sections 1-6(A)-(C). Cases discussing the probative value issue include United States v. DeBetham, 348 F.Supp. 1377 (S.D. Cal. 1972), aff'd, 470 F.2d 1397 (9th Cir. 1972), cert. denied, 412 U.S. 707 (1973), and United States v. Ridling, 350 F.Supp. 90 (E.D. Mich. 1972). On the other hand, one of the major countervailing dangers is that of "mystic infallibility." See supra note 11 and accompanying text.

[105] See supra notes 35-36 and accompanying text.

[106] See supra notes 59-61 and accompanying text.

[107] Remember that the standard for appellate review of admissibility in the area of novel scientific evidence is "abuse of discretion." See P. Giannelli and E. Imwinkelried, supra note 104, section 16(c); United States v. Williams, 583 F.2d at 1194, 1200 (2d Cir. 1978); United States v Baller, 519 F.2d 468, 467 (4th Cir. 1975). For error to be found, the ruling must have materially prejudiced a substantial right of a party. Mil. R. Evid. 103(a). In order for the error to be preserved, an objection must be made in a timely fashion, "stating the specific ground of objection, if the specific ground was not apparent from the context." Mil. R. Evid. 103(a)(1). Additionally, in cases excluding evidence, an offer of proof as to the excluded evidence must have been made unless contextually clear. Mil. R. Evid. 103(a)(2). Defense counsel should not rely on the plain error doctrine. Mil. R. Evid. 103(d). Particularly in the area of novel scientific evidence, plain error will be difficult to demonstrate if for no other reason than the novelty of the process. A full-blown hearing on a motion in limine should meet most of these requirements and is the recommended method for litigating the admissibility of scientific evidence. Obviously, in most cases the defense will want to address this issue prior to entering pleas, particularly if the evidence is inculpatory.

[108] Mil. R. Evid. 402; see supra notes 45 and 66.

[109] Mil. R. Evid. 401; see supra notes 45 and 66.

[110] See generally McCormick on Evidence 605-09 (3d ed. 1984).

[111] See, e.g., United States v. Gipson, 24 M.J. 246, 251-52 (C.M.A. 1987).

[112] Id. at 251.

[113] Id.

[114] See id.

[115] Id. at 252.

[116] The one problem may be the Military Rule of Evidence 702 focus on overwhelming, misleading, or confusing. As discussed earlier, if Federal Rule of Evidence and Military Rule of Evidence 702 are to have meaning beyond their 403 counterparts, they must be more restrictive. See supra note 62 and accompanying text. If this is so, then evidence that survive a Frye and a Rule 403 analysis might not survive a Gipson/Downing 702 analysis.

[117] 17 M.J. 684 (A.C.M.R. 1983).

[118] Id. at 686.

[119] Gipson, 24 M.J. at 251.

120 Id.

121 This is not a necessary conclusion, however. Arguably, unreliable evidence may, in fact, be valid evidence. As an extreme example, consider the ancient proposition that the earth was flat. An assertion that the earth was round, prior to the 15th century, would have been rejected out of hand not only as unreliable, but also as contrary to the scientific principles then generally accepted. Albeit extreme, this example highlights the problem implicit in a new technique, particularly when that technique is based on truly novel scientific principles. To resolve this theoretical problem would require courts to forego admissibility analysis in favor of an almost exclusively weight evaluation by the fact finder. Obviously, for policy reasons, this will not be done.

122 See supra text accompanying notes 94-95.

123 Gipson, 24 M.J. at 251.

124 See id.

125 Of course, this is also what the trial judge did under the Frye standard. The judge now has much greater leeway because, under Frye, he or she was constrained by expert testimony on whether the procedure was generally accepted. Therefore, the relevancy approach enhances the role of the judge. The judge not only supplants Frye's "scientific jury," but also does so in the absence of clear guidelines on where to draw the line distinguishing admissibility versus weight.

126 Downing, 753 F.2d at 1238. The Gipson court similarly retains Frye in this manner. 24 M.J. at 252.

127 753 F.2d at 1238.

128 Id.

129 As a measure of reliability, the court suggested comparing the number of times a valid result occurs to the number of times the results is erroneous. Any time the technique is more likely to produce the erroneous result, it should be deemed unreliable. Id. at 1239.

130 Id.

131 Id. at 1238-39. The court based its discussion on the work of Judge Weinstein and Professor Berger. 3 J. Weinstein and M. Berger, Weinstein's Evidence section 702 (1985). With regard to judicially noting testimony of experts in previous cases, care must be taken to ensure the state of the scientific technique has not changed. Advances in technology are inherent in novel scientific techniques because, at least until they become generally accepted, they continually are being tested and evaluated. Therefore, the procedure may have been improved or discredited because the testimony in a prior case was taken.

132 498 F.2d at 744; see supra note 11 and accompanying text.

133 Downing, 753 F.2d at 1239.

134 Indeed, the absence of experts testifying that the technique is not generally accepted may exacerbate the perceived problem of "mystic infallibility."

135 753 F.2d at 1239.

136 This is a particular problem with regard to novel forensic scientific techniques. To the extent that a technique is unique to forensic science, the experts who have developed it and who will testify concerning its reliability very well may have a vested interest in its acceptance by the courts. Further, because it is a forensic technique, it may be some time before an unbiased scientific community, not involved with forensics, evaluates it.

137 753 F.2d at 1239. The problem of bias discussed earlier is present here as well. See supra note 136. To the extent a private laboratory is involved in forensics, it has a vested interest in being able to generate definitive results. The problem is not so much one of producing results that a client would want, as it is of reporting a result at all when the data may not be clear enough to support one. concerns in this area are not limited to private firms. For example, although this writer found Air Force Office of Special Investigations (AFOSI) polygraphers to be extremely fair minded and objective, a common perception exists among military defense counsel that AFOSI polygraphs are unreliable and have an undue tendency to inculpate. As part of a team designed to "catch" criminals, the belief is that OSI polgyraphers will want to prove guilt via the polygraph examination.

138 An example of the balancing is found in United States v. Mance, 26 M.J. 244 (C.M.A. 1988). The court refused to permit expert scientific testimony to the effect that melanin--a substance responsible for skin pigmentation and found in urine--could result in a positive urinalysis for cannabis. The court noted that the expert involved was self-taught, had no formal forensic education, and had no lab. Additionally, no

tests had been done to verify the theory, and the expert was unaware of any scientist other than himself who supported the theory. Therefore, the testimony would only serve to confuse and mislead the fact finders. Id. at 247.

[139] 753 F.2d at 1240. There have been a number of military appellate cases upholding the judge's discretionary powers. In United States v. Jensen, 25 M.J. 284, 289 (C.M.A. 1987), the Court of Military Appeals, citing Gipson, upheld the trial judge's exclusion of an exculpatory polygraph. The great degree of discretion granted was indicated by the lack of discussion of the basis for exclusion and by the court's statement that "this is not to say that (the trial judge) would have erred by admitting (the) evidence." Id. An example of a case finding the trial judge to have abused his discretion is United States v. Rivera, 26 M.J. 638 (A.C.M.R. 1988). In Rivera the prosecution called an expert in psychology to testify about the "therapist-patient sex syndrome." Citing Gipson and Snipes, the Rivera court acknowledged that the rules relating to novel scientific evidence had been relaxed. However, the court went on to point out that the expert in question and his associates were about the only people doing research in this area and that the syndrome was not recognized in the Diagnostic and Scientific Manual (DSM III). Rivera, 26 M.J. at 641. The court then ruled that the trial judge had abused his discretion by admitting the testimony because both the technique employed and its underlying principle were very much open to question. Additionally, there was concern about the aura of "scientific legitimacy." Id. at 642. Rivera is a fascinating case because it reads very much like a case, particularly when the discussion turns to issues such as inclusion in DSM III and the number of researchers looking at the issue. Inclusion in DSM III is, in particular, a general acceptance issue. Of course, it retains value in light of Gipson, but only when it serves as a standard resulting in the admission of evidence. The absence of general acceptance under Gipson, however, should serve only to continue the inquiry.

[140] United States v. Gipson, 24 M.J. 246, 251 (C.M.A. 1987).

[141] Mil. R. Evid. 401; see supra notes 45 and 66.

[142] The proponent of the evidence should make an on-the-record proffer of the relationship asserted. See United States v. Downing, 753 F.2d 1224, 1242 (3d Cir. 1985).

[143] An example of a case rejecting evidence on this basis is United States v. Dibb, 26 M.J. 840 (A.C.M.R. 1988). In Dibb the defendant alleged that he was suffering from a transient mental disturbance caused by urea formaldehyde gas and, therefore, did not have the mens rea to establish the dishonorable nature of his acts; that is, issuing worthless checks. Id. at 831. The court rejected the evidence because the defendant made "no proffer that (he) presently suffered from such a mental disturbance, that the physiological condition caused a psychological reaction, or that the military environment in which the appellant lived and worked contained substances that would trigger the onset of the mental disturbance." Id. at 832.

[144] One final consideration in a Military Rule of Evidence 702 analysis is whether the individual providing the testimony can be qualified as an expert. To be so qualified, the individual must have special knowledge, skill, experience, training, or education sufficient to make it reasonable to rely on his testimony assuming it passes muster as to the other facets of the rule. This is a very low threshold and the expert does not have to be an "outstanding practitioner" in the field. United States v. Barker, 553 F.2d 1013, 1024 (6th Cir. 1977). An oft-cited military case is United States v. Garries, 19 M.J. 845 (A.F.C.M.R. 1985). In Garries a detective was called as a blood stain expert. He had attended a course at the University of Colorado taught by a nationally-recognized blood splatter expert and had been involved in 20-30 actual cases. The detective was held to have been qualified properly as an expert in the field. An example of a case rejecting an individual as an expert is United States v. Carter, 26 M.J. 428 (C.M.A. 1988). In Carter admission of a CID agent's testimony that the victim exhibited responses similar to other rape victims was held to be error because he was not properly qualified in the field of rape trauma syndrome. In other words, mere familiarity is insufficient.

[145] Mil. R. Evid. 403, see supra notes 45, 66. "Probative value involves a logical process of reasoning favored by the law. Prejudicial effect means some unwelcome influence on the logical process ..." S. Saltzburg, L. Schinasi and D. Schlueter, supra note 65, at 343.

[146] United States v. Teeter, 12 M.J. 716, 725 (A.C.M.R. 1981)(citing United States v. Dennis, 625 F.2d 782 (8th Cir. 1980)).

[147] United States v. Downing, 753 F.2d 1224, 1243 (3d Cir. 1985); see supra text accompanying note 62.

[148] This is one excellent reason to seek special findings in all Military Rule of Evidence 403 rulings.

149 24 M.J. 897 (C.G.C.M.R. 1987).

150 Id. at 906.

151 Military Rule of Evidence 403 does include mention of delay, waste of time, and needless presentation of cumulative evidence. These issues of judicial economy are not unique to novel scientific evidence, however, and their handling will mirror that involved with nonscientific evidence. Indeed, these provisions seldom are invoked in situations involving scientific evidence.

152 In the fact of an assertion that whatever standards might be chosen would, nevertheless, be incapable of quantification, the authors would suggest consideration of admissibility standards that differ based upon whether the evidence is inculpatory or exculpatory. One such approach, which would employ a beyond a reasonable doubt standard for prosecution evidence and a preponderance standard for defense evidence, has been outlined by Professor Giannelli. Giannelli, supra note 23, at 1249-50. Another technique might be to apply the more stringent general acceptance test for inculpatory evidence and the relevance test for exculpatory evidence. Though such approaches would not solve the problem of lack of quantification, they would, to a much greater degree, place the risk where it should lie--with the prosecution. Acceptance of differing standards would, of course, tend to result in a greater number of acquittals than would be the case if both sides were subject to the same lower standard. As a policy matter, however, we should strive for a system in which the innocent defendant could present any evidence that might demonstrate his or her innocence. Similarly, we should create stringent safeguards against admission of evidence that might wrongly convict that same defendant. To argue that both sides have an inherent right to present evidence of the same quality is to reject the adage that we would rather ten guilty defendants go free than convict one innocent one.

153 It is certainly open to question whether "abuse of discretion" is an appropriate standard to use when dealing with exculpatory evidence, particularly when the evidence is of a scientific nature, but has not yet been generally accepted.

154 The term "probative" is purposefully used here in contrast to the term "material" in question two. This is to indicate that the probativeness of evidence is the combination of the response to all the inquiries set forth in the previous questions.

155 For example, a judge might admit evidence when the application is somewhat questionable, but not do so in the case of other evidence in which similar questions arise as to application, because of additional questions concerning technique and principle.

156 See supra note 51.

* * * * * *

There are six subparts to the law. The first covers employers, the second sets forth rules on exemptions, the third provides restrictions on use under the exemptions, the fourth sets forth the recordkeeping requirements, the fifth describes the enforcement, and the sixth sets forth the rules for the administrative enforcement of the Act. Those observations are limited to the first four parts.

The Department of Labor will distribute to employers a notice describing employee rights and employer responsibilities, and the poster must be conspicuously displayed on the premises. Despite the glut of posters, and the fact that an employer may have not intended to use polygraph tests, the poster must be displayed.

Regarding the scope of coverage, the rules state Congress intended EPPA to have the broadest possible coverage under the commerce clause, and that means virtually every private employer.

Law enforcement agencies asked if the cooperation of an employer by making an employee available for testing during the investigation of a crime would violate the law. The rules now have an added clause which makes it clear that employers are not responsible under EPPA for any test police authorities might decide to administer during the course of their investigation of any theft or other incident involving economic loss which the employer reported to such authorities without incurring any liability under the Act. For example, allowing a test on the employer's premises during working time and similar types of cooperation would not be construed as being within the Act's prohibited conduct. However, the rules prohibit tests by police in which the employer reimburses police authorities for costs of tests they administer, or where the employer administers the test at the request or direction of police authorities.

A new subsection makes clear that a fairly common practice of police authorities to disclose test results to employers, particularly when the test indicates deception on the part of an employee, violates section 3(2) of the Act, which prohibits employers from "using, accepting, or inquiring" about the results of a lie detector test. The police are not liable, but the employer is if he takes notice.

A polygraph instrument may not be used as a threat to induce admissions even though there is no intention on the part of the employer to actually conduct a test, as this amounts to a threat or suggestion of a test.

Paper and pencil tests, honesty tests, graphoanalysis, and similar tests are not precluded by the Act.

The Final Rules were published in the Federal Register, 56(42), March 4, 1991, and the observations are based on that information. [Ed.]

Voice Stress Analyzers and similar devices are precluded from use under the Act because it is generally understood that measurement of stress associated with an answer implies deception. These devices are specifically mentioned within the term "lie detector" as defined by the Act.

Transfer of an employee outside the United states for the purpose of giving the test, is considered to be covered by the Act, and so is testing aboard a cruise ship outside territorial waters of the United States, if the ship is considered to be within the jurisdiction of the United States. While the wording of the rule on tests aboard ship is difficult, the meaning is clear, they intend to prohibit any evasion of EPPA by testing at sea or abroad. Aliens in the United States are protected by the Act.

Neither the Act nor the rules amplify on the definition of the term "employee." EPPA defines "employer" as any person acting directly or indirectly in the interest of an employer in relation to an employee or prospective employee," but this does not include the polygraph examiner employed for the sole purpose of conducting a polygraph test.

Polygraph testing by persons other than an employer is not precluded by the Act. Thus, the restrictions do not apply to public agencies in the performance of law enforcement activities, to lawyers who administer lie detector tests to clients, and potential witnesses, or to fishing tournament officials who administer tests to winning contestants. The rule states, "Similarly, although the abuses Congress intended to correct may be present with bona fide independent contractors, such as truck owner-operators, the Department does not believe EPPA applies to such bona fide independent contractor relationships. Thus, EPPA restrictions do not apply to the testing of an individual person who is a bona fide independent contractor." But the rules do apply to employees of such a contractor. The term independent contractor, as meant here, is defined in Rutherford Food Corp. v. McComb, 331 U.S. 722 (1947) and labor standards case law.

Tests by employment placement agencies and job recruiting firms given at the request of candidates or potential employers is prohibited as the tests are conducted on behalf of a prospective employer, whether or not the employer seeks the information. State employment services are included in the ban.

The rules interpret the law to include former employers under the Act with respect to the statutory prohibitions on discrimination.

The final rule excludes from the Act public employees of federal, state or local governments, but does not extend to tests by or on behalf of government entities, or contractors, or nongovernmental agents of a government entity, with respect to any employees in the private sector. The federal government may administer tests to employees of private contractors engaged in intelligence and counterintelligence work, and the law mentions employees of DoD, DoE, NSA, CIA, and FBI contractors with access to classified information and subject to counterintelligence investigations.

While the sudden escalation of shortages in a given accounting period, by itself, would not provide a sufficient basis for testing, the testing of

an employee would be permissible if a subsequent investigation into such shortages pinpointed actual missing items as a result of wrongdoing, and provided information to support the other prerequisites of "access" and "reasonable suspicion."

Trade secrets are now included within the definition of property.

The DoL denied a request of the Service Employees International Union that DoL monitor the extent to which tests under the ongoing investigation exemption are administered, noting that the Department does not have authority to require its notification whenever one might be administered.

Reasonable suspicion cannot be established from the results of a polygraph examination or the results of a paper and pencil test. However, reasonable suspicion may be formulated on the basis of sole access by one employee.

Although the final rules do not modify the definition of direct access required for polygraphing applicants and employees under the controlled exemption, the new rules do allow testing an employee if an investigation reveals access, regardless of their described job duties. It is the access, not the job description that matters.

The issue was raised about a cross-reference which appears to incorporate the conditions of section 7(d) exemption for ongoing investigations in the section 7(f) exemption for controlled substances. The Act does not impose the "reasonable suspicion" condition on employers registered under the Controlled Substances Act, and also excluded the requirement for a statement to be given to the examinee which details the specific incident that is the subject of investigation, the examinee's access, and the employer's basis for reasonable suspicion. The new rule removes the confusing cross-reference and clarifies the scope of the term "potentially involving."

In regard to the "primary business purpose" of the security services exemption which is defined in the draft regulation to mean that 50% or more of the employer's business receipts must be derived from providing the types of security services enumerated in the Act, the new rules clarify it so that where a parent corporation includes a subsidiary corporation engaged in provided security services, the business receipts test is applied to the subsidiary corporation, not the parent corporation.

The question was asked of DoL as to whether the definition of the term "security alarm systems" includes additional types of security devices, such as mechanical or electronic locking systems, to qualify for the exemption. They said no, that nothing in the Act provides for a broader interpretation.

The statement pertaining to commercial and industrial assets and operations which are "designated in writing by an appropriate Federal agency to be vital to national security interests" was of concern, because the DoD Key Assets Protection Program list is classified and therefore not available to the public. The new definition will allow testing of prospective employees who are engaged in guarding government facilities or who guard private

facilities pursuant to a requirement by a government agency that such facilities be guarded.

The interim rules which did not allow an exemption to include security services to private homes or businesses not primarily engaged in handling, trading, transferring, or storing currency, negotiable securities, precious commodities or instruments, or proprietary information, was the topic of considerable discussion because the legislative history was ambiguous, and at times, contradictory. The final rule will take a narrow view and will not allow the exemption to apply to every business or ship, or homes. However, the Department has added to the final rule coverage of protective services for casinos, racetracks, lotteries, or other business activities where large amounts of cash are acquired from or dispensed to customers, i.e., the cash in effect constitutes the inventory or stock in trade. Businesses engaged in the sale or exchange of precious commodities such as gold, silver, or diamonds, including jewelry stores or other stores that stock such precious commodities, prior to transformation into pieces of jewelry, silverware, or other items, have also been included.

The earlier interpretation of "prospective employee" under the exemption which allows testing of persons for security services or work with controlled substances has been broadened to include those current employees who are being considered for transfer to such duties providing that the current employee is considered a job applicant or prospective employee with respect to the new position being applied for. Read that section with care before using it as it seems to have some contradictory statements. DoL does not allow the employer to conduct the tests of those prospective employees after they are hired.

The word "occasional" has been deleted from the rule stating any employee whose access to secured areas is "occasional" would not qualify. They note that the APA argued [correctly] that it is the knowledge and ability to compromise the security of protected operations that is the determinative factor in the exemption, and not the frequency of opportunities which may be available.

The rule on not testing those employees who will not be employed to protect ... was broadened to permit testing of a prospective employee who would be likely at some time to protect covered facilities, operations, materials, or assets," such as through rotation of work assignments or through selection from a pool of available employees, even if selection for such work is unpredictable or infrequent.

The rule requiring 48 hours notice was considered by many as too restrictive, and as reasonable by others [including the APA]. The Act only requires "reasonable written notice." As a compromise the new rules will allow a 24 hour time period, if freely agreed to by the prospective employee and does not become a condition of employment. If the shorter period is not accepted, the 48 hour rule applies. The rules will now require some documentation of the time and date of receipt of the notice.

Drug companies objected to the interim rule that would permit a person who has direct access to controlled substances to present a certificate from

a physician that they are being treated for drug addiction and, for that reason, may refuse to take a polygraph test. Absurd as the rule is, it will stay as written.*

The provision for excluding counsel from the room where the examination is administered during actual testing was the topic of much discussion. The Department took the position that the issues were theoretical and it understands that the only parties present during an examination are, as a matter of established polygraph practice, the examiner and the examinee. However, inherent in the right to counsel is the provision of a convenient place on the premises of the employer or examiner where the examinee may consult privately with their attorney.

The rules require that the examinee be allowed to review all of the questions before the actual test. At issue was whether the questions had to be presented 48 hours before the test or during the immediate pretest phase. On inquiry the Department found that the questions are in usual practice reviewed with the examinee immediately before the test, and finalized at that point. Therefore, a longer prior notice would be impractical. The final rules has been modified to make clear that the questions to be asked during a test can be presented in writing and reviewed with the examinee any time prior to the actual testing phase.

If, in the pretest phase, the employee makes admissions, the examiner may rephrase the relevant questions, so long as the questions cover only the crime under investigation. Even a post-test admission relating to the crime may permit rephrasing of relevant questions to continue the test, by reverting to the pretest phase and rewriting the new relevant questions. It is important to note that this revision of the relevant questions must be limited to the ongoing investigation. Admission of unrelated wrongdoing may not be the topic of further or revised testing, as that would be contrary to the statute.

No change was made in the interim final rule that requires an employer to interview an examinee before taking an adverse employment action, even though that might be inconvenient in the case of a job applicant.

The law requires that an employer furnish a copy of the "corresponding charted responses" to an examinee before any adverse action can be taken. This was the topic of considerable comment by the APA and others. The legislative history was not clear. The Department finally decided that Congress intended that an employee be provided with a copy of their responses, as recorded on the polygraph chart, corresponding to all of the questions asked during the examination -- even if fifteen or more feet in length, and prior to any adverse employment action. The rule now requires that the entire polygraph chart be reproduced and furnished.

There may be difficulty in terminating an employee who has access to controlled substances who is under treatment, under the Americans With Disabilities Act. See Polygraph (1991), 20(1), 32-34.

In regard to the required $50,000 bond or the equivalent amount of professional liability coverage, the Department has decided not to establish a uniform bond format with related administrative procedures and instructions in the text of the final rule. In doing so they noted that the lack of interest in bonds in the polygraph examiner community strongly suggests that the statutory alternative of professional liability insurance is preferred. However, the Department will provide guidance for those individual examiners who wish to obtain a $50,000 bond in lieu of liability insurance.

The Committee of National Security Companies, Independent Armored Car Operators Association, National Armored Car Association, National Burglar and Fire Alarm Association and several polygraph examiners [but not the APA] raised concerns about the limit of five polygraph tests on any given day and the 90-minute length of tests. Confusing was whether the Act meant only tests covered by the Act or included tests conducted outside the scope of the Act. Some commentators considered the 90-minute rule unrealistic in those cases where the objective of the test can be achieved in less time. The Department recognized that some tests may be completed in less than 90 minutes, and that the regulations permit an examinee to depart from the test in such cases without placing the examiner and the employer in technical violation. But if that happens you cannot render an opinion. the rule has been clarified so that on any given calendar day on which a test within the scope of the Act is administered, the examiner may not conduct more than a total of 5 tests, regardless of whether any of the other tests are administered under the Act. The law does not apply to days in which all of the tests are conducted outside of the Act. The requirement that no testing period shall be less than 90 minutes in length is also construed as applying only to tests subject to the Act's provisions. In regard to those tests under the Act which are terminated in less than 90 minutes, an opinion on the examinee's truthfulness may not be made. The statute provides no authority for a more reasonable or less stringent requirement.

Daily records of the number of tests given that day apply only to those days in which a test is given under the Act. Regardless of state laws that are less stringent, the Department requires you to retain tests records for three years, as the law is specific on that point.

Some clarification was needed as to who was included when disclosing information to an employer who requested the test. The rule has been clarified to allow the test results to be disclosed to any management personnel of the employer where the disclosure of such information is relevant to the carrying out of their job responsibilities.

The Department considered it in the interest of the examinee to allow the practice of having other examiners verify conclusions and/or observations providing the identifying information is not provided to the other examiner. So quality control is permitted if the name of the examinee is protected.

The State of Texas was concerned about the restrictions on disclosure and their effect on the state inspections of licensed polygraph examiners' records. The other 31 states with licensing laws did not comment. The Department of Labor said the plain meaning of the statute prevents the Texas

Polygraph Examiners Board or any other State and local government from inspecting the polygraph tests conducted by an examiner. They did not say whether this applied only to records of tests conducted under the Act, or to all test. They noted that only a change in the law, as introduced by Congressman Bartlett in H.R. 3451 would allow such disclosures.

The review above is based on information in the Federal Register, and is the interpretation of the author. The reader is advised to consult the final rules of the Department of Labor, and legal counsel before taking any action under the EPPA. The reader should not take action based on the comments in this article, as the article is only for general information.

* * * * * *

POLYGRAPH PROTECTION ACT OF 1988

(EPPA)

FINAL RULES

Federal Register

56(42), March 4, 1991

POLYGRAPH PROTECTION ACT OF 1988
Final Rule

EMPLOYMENT, INVESTIGATIONS, LABOR, LAW ENFORCEMENT

Accordingly, title 29, chapter V, subchapter C, part 801 of the Code of Federal Regulations is revised as set forth below.

Signed at Washington, DC, on this 25th day of February 1991.

Lynn Martin,
Secretary of Labor

Samuel D. Walker,
Acting Assistant Secretary for Employment Standards.

John R. Fraser,
Acting Administrator, Wage and Hour Division.

Subchapter C--Other Laws

Part 801--Application of the Employee Polygraph Protection Act of 1988

Subpart A--General

Authority: Pub. L. 100-347, 102 Stat. 646, 29 U.S.C. 2001-2009.

Subpart A--General

Section 801.1 Purpose and scope.

(a) Effective December 27, 1988, the Employee Polygraph Protection Act of 1988 (EPPA or the Act) prohibits most private employers (Federal, State, and local government employers are exempted from the Act) from using any lie detector tests either for pre-employment screening or during the course of employment. Polygraph tests, but no other types of lie detector tests, are permitted under limited circumstances subject to certain restrictions. The purpose of this part is to set forth the regulations to carry out the provisions of EPPA.

(b) The regulations in this part are divided into six subparts. Subpart A contains the provisions generally applicable to covered employers, including the requirements relating to the prohibitions on lie detector use and the posting of notices. Subpart A also sets forth interpretations regarding the effect of section 10 of the Act on other laws or collective bargaining agreements. Subpart B sets forth rules regarding the statutory exemptions from application of the Act. Subpart C sets forth the restrictions on polygraph usage

under such exemptions. Subpart D sets forth the recordkeeping requirements and the rules on the disclosure of polygraph test information. Subpart E deals with the authority of the Secretary of Labor and the enforcement provisions under the Act. Subpart F contains the procedures and rules of practice necessary for the administrative enforcement of the Act.

Section 801.2 Definitions.

For purposes of this part:

(a) Act or EPPA means the Employee Polygraph Protection Act of 1988 (Pub. L. 100-347, 102 Stat. 646, 29 U.S.C. 2001-2009).

(b) (1) The term commerce has the meaning provided in section 3(b) of the Fair Labor Standards Act of 1938 (29 U.S.C. 203(b)). As so defined, commerce means trade, commerce, transportation, transmission, or communication among the several States or between any State and any place outside thereof.

(2) The term State means any of the fifty States and the District of Columbia and any Territory or possession of the United States.

(c) The term employer means any person acting directly or indirectly in the interest of an employer in relation to an employee or prospective employee. A polygraph examiner either employed for or whose services are retained for the sole purpose of administering polygraph tests ordinarily would not be deemed an employer with respect to the examinees.

(d) (1) The term lie detector means a polygraph, deceptograph, voice stress analyzer, psychological stress evaluator, or any other similar device (whether mechanical or electrical) that is used, or the results of which are used, for the purpose of rendering a diagnostic opinion regarding the honesty or dishonesty of an individual. Voice stress analyzers, or psychological stress evaluators, include any systems that utilize voice stress analysis, whether or not an opinion on honesty or dishonesty is specifically rendered.

(2) The term lie detector does not include medical tests used to determine the presence or absence of controlled substances or alcohol in bodily fluids. Also not included in the definition of lie detector are written or oral tests commonly referred to as "honesty" or "paper and pencil" tests, machine-scored or otherwise; and graphology tests commonly referred to as handwriting tests.

(e) The term polygraph means an instrument that--

(1) Records continuously, visually, permanently, and simultaneously changes in cardiovascular, respiratory, and electrodermal patterns as minimum instrumentation standards; and

(2) Is used, or the results of which are used, for the purpose of rendering a diagnostic opinion regarding the honesty or dishonesty of an individual.

(f) The terms manufacture, dispense, distribute, and deliver have the meanings set forth in the Controlled Substances Act, 21 U.S.C. 812.

(g) The term Secretary means the Secretary of Labor or authorized representatives.

(h) Employment Standards Administration means the agency within the Department of Labor, which includes the Wage and Hours Division.

(i) Wage and Hour Division means the organizational unit in the Employment Standards Administration of the Department of Labor to which is assigned primary responsibility for enforcement and administration of the Act.

(j) Administrator means the Administrator of the Wage and Hour Division, or authorized representative.

Section 801.3 Coverage

(a) The coverage of the Act extends to "any employer engaged in or affecting commerce or in the production of goods for commerce." (Section 3 of EPPA; 29 U.S.C. 2002.) In interpreting the phrase "affecting commerce" in other statutes, courts have found coverage to be coextensive with the full scope of the Congressional power to regulate commerce. See, for example, Godwin v. Occupational Safety and Health Review Commission, 540 F.2d 1013, 1015 (9th Cir. 1976). Since most employers engage in one or more types of activities

that would be regarded as "affecting commerce" under the principles established by a large body of court cases, virtually all employers are deemed subject to the provisions of the Act, unless otherwise exempt pursuant to section 7 (a), (b), or (c) of the Act and Sections 801.10 or 801.11 of this part.

(b) The Act also extends to all employees of covered employers regardless of their citizenship status, and to foreign corporations operating in the United States. Moreover, the provisions of the Act extend to any actions relating to the administration of lie detector, including polygraph, tests which occur within the territorial jurisdiction of the United States, e.g., the preparation of paperwork by a foreign corporation in a Miami office relating to a polygraph test that is to be administered on the high seas or in some foreign location.

Section 801.4 Prohibitions on lie detector use.

(a) Section 3 of EPPA provides that, unless otherwise exempt pursuant to section 7 of the Act and Sections 801.10 through 801.14 of this part; covered employers are prohibited from:

(1) Requiring, requesting, suggesting or causing, directly or indirectly, any employee or prospective employee to take or submit to a lie detector test;

(2) Using, accepting, or inquiring about the results of a lie detector test of any employee or prospective employee; and

(3) Discharging, disciplining, discriminating against, denying employment or promotion, or threatening any employee or prospective employee to take such action for refusal or failure to take or submit to such test, on the basis of the results of a test, for filing a complaint, for testifying in any proceeding, or for exercising any rights afforded by the Act.

(b) An employer who reports a theft or other incident involving economic loss to police or other law enforcement authorities is not engaged in conduct subject to the prohibition under paragraph (a) of this section if, during the normal course of a subsequent investigation, such authorities deem it necessary to administer a polygraph test to an employee(s) suspected of involvement in the reported incident. Employers who cooperate with police authorities during the course of their investigations into criminal misconduct are likewise not deemed engaged in prohibitive conduct provided that such cooperation is passive in nature. For example, it is not uncommon for police authorities to request employees suspected of theft or criminal activity to submit to a polygraph test during the employee's tour of duty since, as a general rule, suspect employees are often difficult to locate away from their place of employment. Allowing a test on the employer's premises, releasing an employee during working hours to take a test at police headquarters, and other similar types of cooperation at the request of the police authorities would not be construed as "requiring, requesting, suggesting, or causing, directly or indirectly, any employee *** to take or submit to a lie detector test." Cooperation of this type must be distinguished from actual participation in the testing of employees suspected of wrongdoing, either through the administration of a test by the employer at the request or direction of police authorities, or through employer reimbursement of tests administered by police authorities to employees. In some communities, it may be a practice of police authorities to request employer testing of employees before a police investigation is initiated on a reported incident. In other communities, police examiners are available to employers, on a cost reimbursement basis, to conduct tests on employees suspected by an employer of wrongdoing. All such conduct on the part of employers is deemed within the Act's prohibitions.

(c) The receipt by an employer of information from a polygraph test administered by police authorities pursuant to an investigation is prohibited by section 3(2) of the Act. (See paragraph (a)(2) of this section.)

(d) The simulated use of a polygraph instrument so as to lead an individual to believe that an actual test is being or may be performed (e.g., to elicit confessions or admissions of guilt) constitutes conduct prohibited by paragraph (a) of this section. Such use includes the connection of an employee or prospective employee to the instrument without any intention of a diagnostic purpose, the placement of the instrument in a room used for interrogation unconnected to the employee or prospective employee, or the mere suggestion that the instrument may be used during the course of the interview.

Section 801.5 Effect on other laws or agreements.

(a) Section 10 of EPPA provides that the Act, except for subsections (a), (b), and (c) of section 7, does not preempt any provision of a State or local law, or any provision of a collective bargaining agreement, that prohibits lie detector tests or is more restrictive with respect to the use of lie detector tests.

(b) (1) This provision applies to all aspects of the use of lie detector tests, including procedural safeguards, the use of test results, the rights and remedies provided examinees, and the rights, remedies, and responsibilities of examiners and employers.

(2) For example, if the State prohibits the use of polygraphs in all private employment, polygraph examinations could not be conducted pursuant to the limited exemptions provided in section 7 (d), (e), or (f) of the Act; a collective bargaining agreement that provides greater protection to an examinee would apply in addition to the protection provided in the Act; or more stringent licensing or bonding requirements in a State law would apply in addition to the Federal bonding requirement.

(3) On the other hand, industry exemptions and applicable restrictions thereon, provided in EPPA, would preempt less restrictive exemptions established by State law for the same industry, e.g., random testing of current employees in the drug industry not prohibited by State law but limited by this Act to tests administered in connection with ongoing investigations.

(c) EPPA does not impede the ability of State and local governments to enforce existing statutes or to enact subsequent legislation restricting the use of lie detectors with respect to public employees.

(d) Nothing in section 10 of the Act restricts or prohibits the Federal Government from administering polygraph tests to its own employees or to experts, consultants, or employees of contractors, as provided in subsections 7(b) and 7(c) of the Act, and Section 801.11 of this part.

Section 801.6 Notice of protection.

Every employer subject to EPPA shall post and keep posted on its premises a notice explaining the Act, as prescribed by the Secretary. Such notice must be posted in a prominent and conspicuous place in every establishment of the employer where it can readily be observed by employees and applicants for employment. Copies of such notice may be obtained from local offices of the Wage and Hour Division.

Section 801.7 Authority of the Secretary.

(a) Pursuant to section 5 of the Act, the Secretary is authorized to:

(1) Issue such rules and regulations as may be necessary or appropriate to carry out the Act;

(2) Cooperate with regional, State, local, and other agencies, and cooperate with and furnish technical assistance to employers, labor organizations, and employment agencies to aid in effectuating the purposes of the Act; and

(3) Make investigations and inspections as necessary or appropriate, through complaint or otherwise, including inspection of such records (and copying or transcription thereof), questioning of such persons, and gathering such information as deemed necessary to determine compliance with the Act or these regulations; and

(4) Require the keeping of records necessary or appropriate for the administration of the Act.

(b) Section 5 of the Act also grants the Secretary authority to issue subpoenas requiring the attendance and testimony of witnesses or the production of any evidence in connection with any investigation or hearing under the Act. The Secretary may administer oaths, examine witnesses, and receive evidence. For the purpose of any investigation or hearing provided for in the Act, the authority contained in sections 9 and 10 of the Federal Trade Commission Act (15 U.S.C. 49, 50), relating to the attendance of witnesses and the production of books, papers, and documents, shall be available to the Secretary.

(c) In case of disobedience to a subpoena, the Secretary may invoke the aid of a United States District Court which is authorized to issue an order requiring the person to obey such subpoena.

(d) Any person may report a violation of the Act or these regulations to the Secretary by advising any local office of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, or any authorized representative of the Administrator. The office or person receiving such a report shall refer it to the appropriate office of the Wage and Hour Division, Employment Standards Administration, for the region or area in which the reported violation is alleged to have occurred.

(e) The Secretary shall conduct investigations in a manner which, to the extent practicable, protects the confidentiality of any complainant or other party who provides information to the Secretary in good faith.

(f) It is a violation of these regulations for any person to resist, oppose, impede, intimidate, or interfere with any official of the Department of Labor assigned to perform an investigation, inspection, or law enforcement function pursuant to the Act during the performance of such duties.

Section 801.8 Employment relationship.

(a) EPPA broadly defines "employer" to include "any person acting directly or indirectly in the interest of an employer in relationship to an employee or prospective employee" (EPPA section 2(2)).

(b) EPPA restrictions apply to State Employment Services, private employment placement agencies, job recruiting firms, and vocational trade schools with respect to persons who may be referred to potential employers. Such entities are not liable for EPPA violations, however, where the referrals are made to employers for whom no reason exists to know that the latter will perform polygraph testing of job applicants or otherwise violate the provisions of EPPA.

(c) EPPA prohibitions against discrimination apply to former employees of an employer. For example, an employee may quit rather than take a lie detector test. The employer cannot discriminate or threaten to discriminate in any manner against that person (such as by providing bad references in the future) because of that person's refusal to be tested, or because that person files a complaint, institutes a proceeding, testifies in a proceedings, or exercises any right under EPPA.

Subpart B--Exemptions

Section 801.10 Exclusions for public sector employers.

(a) Section 7(a) provides an exclusion from the Act's coverage for the United States Government, any State or local government, or any political subdivision of a state or local government, acting in the capacity of an employer. This exclusion from the Act also extends to any interstate governmental agency.

(b) The term "United States Government" means any agency or instrumentality, civilian or military, of the executive, legislative, or judicial branches of the Federal Government, and includes independent agencies, wholly-owned government corporations, and nonappropriated fund instrumentalities.

(c) The term "any political subdivision of a State or local government" means any entity which is either:

(1) Created directly by a state or local government, or

(2) Administered by individuals who are responsible to public officials (i.e., appointed by an elected public official(s) and/or subject to removal procedures for public officials, or to the general electorate.

(d) This exclusion from the Act applies only to the Federal, State, and local government entity with respect to its own public employees. Except as provided in sections 7 (b) and (c) of the Act, and Section 801.11 of the regulations, this exclusion does not extend to contractors or nongovernmental agents of a government entity, nor does it extend to government entities with respect to employees of a private employer with which the government entity has a contractual or other business relationship.

Section 801.11 Exemption for national defense and security.

(a) The exemptions allowing for the administration of lie detector tests in the following paragraphs (b) through (e) of this section apply only to the Federal Government; they do not allow private employers/contractors to administer such tests.

(b) Section 7(b)(1) of the Act provides that nothing in the Act shall be construed to prohibit the administration of any lie detector test by the Federal Government, in the performance of any counterintelligence function, to any expert, consultant or employee of any contractor under contract with the Department of Defense; or with the Department of Energy, in connection with the atomic energy defense activities of such Department.

(c) Section 7(b)(2)(A) provides that nothing in the Act shall be construed to prohibit the administration of any lie detector test by the Federal Government, in the performance of any intelligence or counterintelligence function of the National Security Agency, the Defense Intelligence Agency, or the Central Intelligence Agency, to any individual employed by, assigned to, or detailed to any such agency; or any expert

or consultant under contract to any such agency; or any employee of a contractor to such agency; or any individual applying for a position in any such agency; or any individual assigned to a space where sensitive cryptologic information is produced, processed, or stored for any such agency.

(d) Section 7(b)(2)(B) provides that nothing in the Act shall be construed to prohibit the administration of any lie detector test by the Federal Government, in the performance of any intelligence or counterintelligence function, to any expert, or consultant (or employee of such expert or consultant) under contract with any Federal Government department, agency, or program whose duties involve access to information that has been classified at the level of top secret or designated as being within a special access program under section 4.2(a) of Executive Order 12356 (or a successor Executive Order).

(e) Section 7(c) provides that nothing in the Act shall be construed to prohibit the administration of any lie detector test by the Federal Government, in the performance of any counterintelligence function, to any employee of a contractor of the Federal Bureau of Investigation of the Department of Justice who is engaged in the performance of any work under a contract with the Bureau.

(f) "Counterintelligence" for purposes of the above paragraphs means information gathered and activities conducted to protect against espionage and other clandestine intelligence activities, sabotage, terrorist activities, or assassinations conducted for or on behalf of foreign governments, or foreign or domestic organizations or persons.

(g) Lie detector tests of persons described in the above paragraphs will be administered in accordance with applicable Department of Defense directives and regulations, or other regulations and directives governing the use of such tests by the United States Government, as applicable.

Section 801.12 Exemption for employers conducting investigations of economic loss or injury.

(a) Section 7(d) of the Act provides a limited exemption from the general prohibition on lie detector use in private employment settings for employers conducting ongoing investigations of economic loss or injury to the employer's business. An employer may request an employee, subject to the conditions set forth in sections 8 and 10 of the Act and sections 801.20, 801.22, 801.23, 801.24, 801.25, 801.26, and 801.35 of this part, to submit to a polygraph test, but no other type of lie detector test, only if--

(1) The test is administered in connection with an ongoing investigation involving economic loss or injury to the employer's business, such as theft, embezzlement, misappropriation or an act of unlawful industrial espionage or sabotage;

(2) The employee had access to the property that is the subject of the investigation;

(3) The employer has a reasonable suspicion that the employee was involved in the incident or activity under investigation;

(4) The employer provides the examinee with a statement, in a language understood by the examinee, prior to the test which fully explains with particularity the specific incident or activity being investigated and the basis for testing particular employees and which contains, at a minimum:

(i) An identification with particularity of the specific economic loss or injury to the business of the employer;

(ii) A description of the employee's access to the property that is the subject of the investigation;

(iii) A description in detail of the basis of the employer's reasonable suspicion that the employee was involved in the incident or activity under investigation; and

(iv) Signature of a person (other than a polygraph examiner) authorized to legally bind the employer; and

(5) The employer retains a copy of the statement and proof of service described in paragraph (a)(4) of this section for at least 3 years and makes it available for inspection by the Wage and Hour Division on request. (See Section 801.30(a).)

(Approved by the Office of Management and Budget under control number 1225-0170)

(b) For the exemption to apply, the condition of an "ongoing investigation" must be met. As used in section 7(d) of the Act, the ongoing investigation must be of a specific incident or activity. Thus, for example, an employer may not request that an employee or employees submit to a polygraph test in an effort to determine whether or not any thefts have occurred. Such random testing by an employer is precluded by the Act. Further, because the exemption is limited to a specific incident or activity, an employer is precluded from using the exemption in situations where the so-called "ongoing investigation" is continuous. For example, the fact that items in inventory are frequently missing from a warehouse would not be a sufficient basis, standing alone, for administering a polygraph test. Even if the employer can establish that unusually high amounts of inventory are missing from the warehouse in a given month, this, in and of itself, would not be a sufficient basis to meet the specific incident requirement. On the other hand, polygraph testing in response to inventory shortages would be permitted where additional evidence is obtained through subsequent investigation of specific items missing through intentional wrongdoing, and a reasonable suspicion that the employee to be polygraphed was involved in the incident under investigation. Administering a polygraph test in circumstances where the missing inventory is merely unspecified, statistical shortages, without identification of a specific incident or activity that produced the inventory shortages and a "reasonable suspicion that the employee was involved," would amount to little more than a fishing expedition and is prohibited by the Act.

(c)(1)(i) The terms "economic loss or injury to the employer's business" include both direct and indirect economic loss or injury.

(ii) Direct loss or injury includes losses or injuries resulting from theft, embezzlement, misappropriation, industrial espionage or sabotage. These examples, cited in the Act, are intended to be illustrative and not exhaustive. Another specific incident which would constitute direct economic loss or injury is the misappropriation of confidential or trade secret information.

(iii) Indirect loss or injury includes the use of an employer's business to commit a crime, such as check-kiting or money laundering. In such cases, the ongoing investigation must be limited to criminal activity that has already occurred, and to use of the employer's business operations (and not simply the use of the premises) for such activity. For example, the use of an employer's vehicles, warehouses, computers or equipment to smuggle or facilitate the importing of illegal substances constitutes an indirect loss or injury to the employer's business operations. Conversely, the mere fact that an illegal act occurs on the employer's premises (such as a drug transaction that takes place in the employer's parking lot or rest room) does not constitute an indirect economic loss or injury to the employer.

(iv) Indirect loss or injury also includes theft or injury to property of another for which the employer exercises fiduciary, managerial or security responsibility, or where the firm has custody of the property (but not property of other firms to which the employees have access by virtue of the business relationship). For example, if a maintenance employee of the manager of an apartment building steals jewelry from a tenant's apartment, the theft results in an indirect economic loss or injury to the employer because of the manager's management responsibility with respect to the tenant's apartment. A messenger on a delivery of confidential business reports for a client firm who steals the reports causes an indirect economic loss or injury to the messenger service because the messenger service is custodian of the client firm's reports, and therefore is responsible for their security. Similarly, the theft of property protected by a security service employer is considered an economic loss or injury to that employer.

(v) A theft or injury to a client firm does not constitute an indirect loss or injury to an employer unless that employer has custody of, or management, or security responsibility for, the property of the client that was lost or stolen or injured. For example, a cleaning contractor has no responsibility for the money at a client bank. If money is stolen from the bank by one of the cleaning contractor's employees, the cleaning contractor does not suffer an indirect loss or injury.

(vi) Indirect loss or injury does not include loss or injury which is merely threatened or potential, e.g., a threatened or potential loss of an advantageous business relationship.

(2) Economic losses or injuries which are the result of unintentional or lawful conduct would not serve as a basis for the administration of a polygraph test. Thus, apparently unintentional losses or injuries stemming from truck, car, workplace, or other similar type accidents or routine inventory or cash register shortages would not meet the economic loss or injury requirement. Any economic loss incident to lawful union or employee activity also would not satisfy this requirement. It makes no difference that an employer may be obligated to directly or indirectly incur the cost of the incident, as through payment of a "deductible" portion under an insurance policy or higher insurance premiums.

(3) It is the business of the employer which must suffer the economic loss or injury. Thus, a theft committed by one employee against another employee of the same employer would not satisfy the requirement.

(d) While nothing in the Act prohibits the use of medical tests to determine the presence of controlled substances or alcohol in bodily fluids, the section 7(d) exemption does not permit the use of a polygraph test to learn whether an employee has used drugs or alcohol, even where such possible use may have contributed to an economic loss to the employer (e.g., an accident involving a company vehicle).

(e) Section 7(d)(2) provides that, as a condition for the use of the exemption that, the employee must have had access to the property that is the subject of the investigation.

(1) The word "access", as used in section 7(d)(2), refers to the opportunity which an employee had to cause or to aid or abet in causing, the specific economic loss or injury under investigation. The term "access", thus, includes more than direct or physical contact during the course of employment. For example, as a general matter, all employees working in or with authority to enter a warehouse storage area have "access" to unsecured property in the warehouse. All employees with the combination to a safe have "access" to the property in a locked safe. Employees also have "access" who have the ability to divert possession or otherwise affect the disposition of the property that is the subject of investigation. For example, a bookkeeper in a jewelry store with access to inventory records may aid or abet a clerk who steals an expensive watch by removing the watch from the employer's inventory records. In such a situation, it is clear that the bookkeeper effectively has "access" to the property that is the subject of the investigation.

(2) As used in section 7(d)(2), "property" refers to specifically identifiable property, but also includes such things of value as security codes and computer data, and proprietary, financial or technical information, such as trade secrets, which by its availability to competitors or others would cause economic harm to the employer.

(f)(1) As used in section 7(d)(3), the term "reasonable suspicion" refers to an observable, articulable basis in fact which indicates that a particular employee was involved in, or responsible for, an economic loss. Access in the sense of possible or potential opportunity, standing alone, does not constitute a basis for "reasonable suspicion". Information from a co-worker, or an employee's behavior, demeanor, or conduct may be factors in the basis for reasonable suspicion. Likewise, inconsistencies between facts, claims, or statements that surface during an investigation can serve as a sufficient basis for reasonable suspicion. While access or opportunity, standing alone, does not constitute a basis for reasonable suspicion, the totality of circumstances surrounding the access or opportunity (such as its unauthorized or unusual nature or the fact that access was limited to a single individual) may constitute a factor in determining whether there is a reasonable suspicion.

(2) For example, in an investigation of a theft of an expensive piece of jewelry, an employee authorized to open the establishment's safe no earlier than 9 a.m., in order to place the jewelry in a window display case, is observed opening the safe at 7:30 a.m. In such a situation, the opening of the safe by the employee one and one-half hours prior to the specified time may serve as the basis for reasonable suspicion. On the other hand, in the example given, if the employer asked the employee to bring the piece of jewelry to his or her office at 7:30 a.m., and the employee then opened the safe and reported the jewelry missing, such access, standing alone, would not constitute a basis for reasonable suspicion that the employee was involved in the incident unless access to the safe was limited solely to the employee. If no one other than the employee possessed the combination to the safe, and all other possible explanations for the loss are ruled out, such as a break-in, the employer may formulate a basis for reasonable suspicion based on sole access by one employee.

(3) The employer has the burden of establishing that the specific individual or individuals to be tested are "reasonably suspected" of involvement in the specific economic loss or injury for the requirement in section 7(d)(3) to be met.

(g)(1) As discussed in paragraph (a)(4) of this section, section 7(d)(4) of the Act sets forth what information at a minimum, must be provided to an employee if the employer wishes to claim the exemption.

(2) The statement required under paragraph (a)(4) of this section must be received by the employee at least 48 hours, excluding weekend days and holidays, prior to the time of the examination. The statement must set forth the time and date of receipt by the employee and be verified by the employee's signature. This will provide the employee with adequate pre-test notice of the specific incident or activity being investigated and afford the employee sufficient time prior to the test to obtain and consult with legal counsel or an employee representative.

(3) The statement to be provided to the employee must set forth with particularity the specific incident or activity being investigated and the basis for testing particular employees. Section 7(d)(4)(A) requires specificity beyond the mere assertion of general statements regarding economic loss, employee access, and reasonable suspicion. For example, an employer's assertion that an expensive watch was stolen, and that the employee had access to the watch and is therefore a suspect, would not meet the "with particularity" criterion. If the basis for an employer's requesting an employee (or employees) to take a

polygraph test is not articulated with particularity, and reduced to writing, then the standard is not met. The identity of a co-worker or other individual providing information used to establish reasonable suspicion need not be revealed in the statement.

(4) It is further required that the statement provided to the examinee be signed by the employer, or an employee or other representative of the employer with authority to legally bind the employer. The person signing the statement must not be a polygraph examiner unless the examiner is acting solely in the capacity of an employer with respect to his or her own employees and does not conduct the examination. The standard would not be met, and the exemption would not apply if the person signing the statement is not authorized to legally bind the employer.

(h) Polygraph tests administered pursuant to this exemption are subject to the limitations set forth in sections 8 and 10 of the Act, as discussed in sections 801.20, 801.22, 801.23, 801.24, 801.25, 801.26, and 801.35 of this part. As provided in these sections, the exemption will apply only if certain requirements are met. Failure to satisfy any of the specified requirements nullifies the statutory authority for polygraph test administration and may subject the employer to the assessment of civil money penalties and other remedial actions, as provided for in section 6 of the Act (see subpart E, section 801.42 of this part). The administration of such tests is also subject to State or local laws, or collective bargaining agreements, which may either prohibit lie detector tests, or contain more restrictive provisions with respect to polygraph testing.

Section 801.13. Exemption of employers authorized to manufacture, distribute, or dispense controlled substances.

(a) Section 7(f) provides an exemption from the Act's general prohibition regarding the use of polygraph tests for employers authorized to manufacture, distribute, or dispense a controlled substance listed in schedule I, II, III, or IV of section 202 of the Controlled Substances Act (21 U.S.C. 812). This exemption permits the administration of polygraph tests, subject to the conditions set forth in sections 8 and 10 of the Act and sections 801.21, 801.22, 801.23, 801.24, 801.25, 801.26, and 801.35 of this part, to:

(1) A prospective employee who would have direct access to the manufacture, storage, distribution, or sale of any such controlled substance; or

(2) A current employee if the following conditions are met:

(i) The test is administered in connection with an ongoing investigation of criminal or other misconduct involving, or potentially involving, loss or injury to the manufacture, distribution, or dispensing of any such controlled substance by such employer; and

(ii) The employee had access to the person or property that is the subject of the investigation.

(b)(1) The terms "manufacture", "distribute", "distribution", "dispense", "storage", and "sale", for the purposes of this exemption, are construed within the meaning of the Controlled Substances Act (21 U.S.C. 812 et seq.), as administered by the Drug Enforcement Administration (DEA), U.S. Department of Justice.

(2) The exemption in section 7(f) of the Act applies only to employers who are authorized by DEA to manufacture, distribute, or dispense a controlled substance. Section 202 of the Controlled Substances Act (21 U.S.C. 812) requires every person who manufactures, distributes, or dispenses any controlled substance to register with the Attorney General (i.e., with DEA). Common or contract carriers and warehouses whose possession of the controlled substances is in the usual course of their business or employment are not required to register. Since this exemption is intended to apply only to employees and prospective employees of persons or entities registered with DEA, and is not intended to apply to truck drivers employed by persons or entities who are not so registered, it has no application to employees of common or contract carriers or public warehouses. Truck drivers and warehouse employees of the persons or entities registered with DEA and authorized to manufacture, distribute, or dispense controlled substances, are within the scope of the exemption where they have direct access or access to the controlled substances, as discussed below.

(c) In order for a polygraph examination to be performed, section 7(f) of the Act requires that a prospective employee have "direct access" to the controlled substance(s) manufactured, dispensed, or distributed by the employer. Where a current employee is to be tested as a part of an ongoing investigation, section 7(f) requires that the employee have "access" to the person or property that is the subject of the investigation.

(1) A prospective employee would have "direct access" if the position being applied for has responsibilities which include contact with or which affect the disposition of a controlled substance, including

participation in the process of obtaining, dispensing, or otherwise distributing a controlled substance. This includes contact or direct involvement in the manufacture, storage, testing, distribution, sale or dispensing of a controlled substance and may include, for example, packaging, repackaging, ordering, licensing, shipping, receiving, taking inventory, providing security, prescribing, and handling of a controlled substance. A prospective employee would have "direct access" if the described job duties would give such person access to the products in question, whether such employee would be in physical proximity to controlled substances or engaged in activity which would permit the employee to divert such substances to his or her possession.

(2) A current employee would have "access" within the meaning of section 7(f) if the employee had access to the specific person or property which is the subject of the on-going investigation, as discussed in section 801.12(e) of this part. Thus, to test a current employee, the employee need not have had "direct" access to the controlled substance, but may have had only infrequent, random, or opportunistic access. Such access would be sufficient to test the employee if the employee could have caused, or could have aided or abetted in causing, the loss of the specific property which is the subject of the investigation. For example, a maintenance worker in a drug warehouse, whose job duties include the cleaning of areas where the controlled substances which are the subject of the investigation were present, but whose job duties do not include the handling of controlled substances, would be deemed to have "access", but normally not "direct access", to the controlled substances. On the other hand, a drug warehouse truck loader, whose job duties include the handling of outgoing shipment orders which contain controlled substances, would have "direct access" to such controlled substances. A pharmacy department in a supermarket is another common situation which is useful in illustrating the distinction between "direct access" and "access". Store personnel receiving pharmaceutical orders, i.e., the pharmacist, pharmacy intern, and other such employees working in the pharmacy department, would ordinarily have "direct access" to controlled substances. Other store personnel whose job duties and responsibilities do not include the handling of controlled substances but who had occasion to enter the pharmacy department where the controlled substances which are the subject of the investigation were stored, such as maintenance personnel or pharmacy cashiers, would have "access". Certain other store personnel whose job duties do not permit or require entrance into the pharmacy department for any reason, such as produce or meat clerks, checkout cashiers, or baggers, would not ordinarily have "access." However, any current employee, regardless of described job duties, may be polygraphed if the employer's investigation of criminal or other misconduct discloses that such employee in fact took action to obtain "access" to the person or property that is the subject of the investigation--e.g., by actually entering the drug storage area in violation of company rules. In the case of "direct access", the prospective employee's access to controlled substances would be as a part of the manufacturing, dispensing or distribution process, while a current employee's "access" to the controlled substances which are the subject of the investigation need only be opportunistic.

(d) The term "prospective employee", for the purposes of this section, includes a current employee who presently holds a position which does not entail direct access to controlled substances, and therefore is outside the scope of the exemption's provisions for preemployment polygraph testing, provided the employee has applied for and is being considered for transfer or promotion to another position which entails such direct access. For example, an office secretary may apply for promotion to a position in the vault or cage areas of a drug warehouse, where controlled substances are kept. In such a situation, the current employee would be deemed a "prospective employee" for the purposes of this exemption, and thus could be subject to preemployment polygraph screening, prior to such a change in position. However, any adverse action which is based in part on a polygraph test against a current employee who is considered a "prospective employee" for purposes of this section may be taken only with respect to the prospective position and may not affect the employee's employment in the current position.

(e) Section 7(f) of the Act makes no specific reference to a requirement that employers provide current employees with a written statement prior to polygraph testing. Thus, employers to whom this exemption is available are not required to furnish a written statement such as that specified in section 7(d) of the Act and Section 801.12(a)(4) of this part.

(f) For the section 7(F) exemption to apply, the polygraph testing of current employees must be administered in connection with an ongoing investigation of criminal or other misconduct involving, or potentially involving, loss or injury to the manufacture, distribution, or dispensing of any such controlled substance by such employer.

(1) Current employees may only be administered polygraph tests in connection with an ongoing investigation of criminal or other misconduct, relating to a specific incident or activity, or potential incident or activity. Thus, an employer is precluded from using the exemption in connection with continuing investigations or on a random basis to determine if thefts are occurring. However, unlike the exemption in section 7(d) of the Act for employers conducting ongoing investigations of economic loss or injury, the section 7(f) exemption includes ongoing investigations of misconduct involving potential drug losses. Nor does the latter exemption include the requirement for "reasonable suspicion" contained in the section 7(d) exemption. Thus, a drug store employer is permitted to polygraph all current employees who have access to a controlled substance stolen from the inventory, or where there is evidence that such a theft is planned. Polygraph testing

based on an inventory shortage of the drug during a particular accounting period would not be permitted unless there is extrinsic evidence of misconduct.

(2) In addition, the test must be administered in connection with loss or injury, or potential loss or injury, to the manufacture, distribution, or dispensing of a controlled substance.

(i) Retail drugstores and wholesale drug warehouses typically carry inventory of so-called health and beauty aids, cosmetics, over-the-counter drugs, and a variety of other similar products, in addition to their product lines of controlled drugs. The noncontrolled products usually constitute the majority of such firms' sales volumes. An economic loss or injury related to such noncontrolled substances would not constitute a basis of applicability of the section 7(f) exemption. For example, an investigation into the theft of a gross of cosmetic products could not be a basis for polygraph testing under section 7(f), but the theft of a container of valium could be.

(ii) Polygraph testing, with respect to an ongoing investigation concerning products other than controlled substances might be initiated under section 7(e) of the Act and section 801.12 of this part. However, the exemption in section 7(f) of the Act and this section is limited solely to losses or injury associated with controlled substances.

(g) Polygraph tests administered pursuant to this exemption are subject to the limitations set forth in sections 8 and 10 of the Act, as discussed in sections 801.21, 801.22, 801.23, 801.24, 801.25, 801.26, and 801.35 of this part. As provided in these sections, the exemption will apply only if certain requirements are met. Failure to satisfy any of the specified requirements nullifies the statutory authority for polygraph test administration and may subject the employer to the assessment of civil money penalties and other remedial actions, as provided for in section 6 of the Act (see subpart E, section 801.40 of this part). The administration of such tests is also subject to State or local laws, or collective bargaining agreements, which may either prohibit lie detector tests, or contain more restrictive provisions with respect to polygraph testing.

Section 801.14. Exemption for employers providing security services.

(a) Section 7(e) of the Act provides an exemption from the general prohibition against polygraph tests for certain armored car, security alarm, and security guard employers. Subject to the conditions set forth in sections 8 and 10 of the Act and sections 801.21, 801.22, 801.23, 801.24, 801.25, 801.26, and 801.35 of this part, section 7(e) permits the use of polygraph tests on certain prospective employees provided that such employers have as their primary business purpose the providing of armored car personnel, personnel engaged in the design, installation, and maintenance of security alarm systems, or other uniformed or plainclothes security personnel; and provided the employer's function includes protection of

(1) Facilities, materials, or operations having a significant impact on the health or safety of any State or political subdivision thereof, or the national security of the United States, such as--

(i) Facilities engaged in the production, transmission, or distribution of electric or nuclear power,
(ii) Public water supply facilities,
(iii) Shipments or storage of radioactive or other toxic waste materials, and
(iv) Public transportation; or

(2) Currency, negotiable securities, precious commodities or instruments, or proprietary information.

(b)(1) Section 7(e) permits the administration of polygraph tests only to prospective employees. However, security service employers may administer polygraph tests to current employees in connection with an ongoing investigation, subject to the conditions of section 7(d) of the Act and section 801.12 of this part.

(2) The term "prospective employee" generally refers to an individual who is not currently employed by and who is being considered for employment by an employer. However, the term "prospective employee" also includes current employees under circumstances similar to those discussed in paragraph (d) of section 801.13 of this part, i.e., if the employee was initially hired for a position which was not within the exemption provided by section 7(e) of the Act, and subsequently applies for, and is under consideration for, transfer to a position for which pre-employment testing is permitted. Thus, for example, a security guard may be hired for a job outside the scope of the exemption's provisions for pre-employment polygraph testing, such as a position at a supermarket. If subsequently this guard is under consideration for transfer or promotion to a job at a nuclear power plant, this currently-employed individual would be considered to be a "prospective employee" for purposes of this exemption prior to such proposed transfer or promotion. However, any adverse action which is

based in part on a polygraph test against a current employee who is considered to be a "prospective employee" for purposes of this exemption may be taken only with respect to the prospective position and may not affect the employee's employment in the current position.

(c) Section 7(e) applies to certain private employers whose "primary business purpose" consists of providing armored car personnel, personnel engaged in the design, installation, and maintenance of security alarm systems, or other uniformed or plainclothes security personnel. Thus, the exemption is limited to firms primarily in the business of providing such security services, and does not apply to firms primarily in some other business who employe their own security personnel. (For example, a utility company which employes its own security personnel could not qualify.) In the case of diversified firms, the term "primary business purpose" shall mean that at least 50% of the employer's annual dollar volume of business is derived from the provision of the types of security services specifically identified in section 7(e). Where a parent corporation includes a subsidiary corporation engaged in providing security services, the annual dollar volume of business test is applied to the legal entity (or entities) which is the employer, i.e., the subsidiary corporation, not the parent corporation.

(d)(1) As used in section 7(e)(1)(A), the terms "facilities, materials, or operations have a significant impact on the health or safety of any State or political subdivision thereof, or the national security of the United States" include protection of electric or nuclear power plants, public water supply facilities, radioactive or other toxic waste shipments or storage, and public transportation. These examples are intended to be illustrative, and not exhaustive. However, the types of "facilities, materials, or operations" within the scope of the exemption are not to be construed so broadly as to include low priority or minor security interests. The "facilities, materials, or operations" in question consist only of those having a "significant impact" on public health or safety, or national security. However, the "facilities, materials or operations" may be either privately or publicly owned.

(2) The specific "facilities, materials, or operations" contemplated by this exemption include those against which acts of sabotage, espionage, terrorism, or other hostile, destructive, or illegal acts could significantly impact on the general public's safety or health, or national security. In addition to the specific examples set forth in the Act and in paragraph (d)(1) of this section, the terms would include:

(i) Facilities, materials, and operations owned or leased by Federal, State, or local governments, including instrumentalities or interstate agencies thereof, for which an authorized public official has determined that a need for security exists, as evidence by the establishment of security requirements utilizing private armored car, security alarm system, or uniformed or plainclothes security personnel, or a combination thereof. Examples of such facilities, materials and operations include:

(A) Government office buildings;
(B) Prisons and correction facilities;
(C) Public schools;
(D) Public libraries;
(E) Water supply;
(F) Military reservations, installations, posts, camps, arsenals, laboratories, Government-owned and contractor operated (GOCO) or Government-owned and Government-operated (GOGO) industrial plants, and other similar facilities subject to the custody, jurisdiction, or administration of any Department of Defense (DOD) component;

(ii) Commercial and industrial assets and operations which--

(A) Are protected pursuant to security requirements established in contracts with the United States or other directives by a Federal agency (such as those of defense contractors and researchers), including factories, plants, buildings, or structures used for researching, designing, testing, manufacturing, producing, processing, repairing, assembling, storing, or distributing products or components related to the national defense; or

(B) Are protected pursuant to security requirements imposed on registrants under the Controlled Substances Act; or

(C) Would pose a serious threat to public health or safety in the event of a breach of security (this would include, for example, a plant engaged in the manufacture or processing of hazardous materials or chemicals but would not include a plant engaged in the manufacture of shoes);

(iii) Public and private energy and precious mineral facilities, supplies, and reserves, including--

(A) Public or private power plants and utilities;
(B) Oil or gas refineries and storage facilities;
(C) Strategic petroleum reserves; and
(D) Major dams, such as those which provide hydroelectric power;

(iv) Major public or private transportation and communication facilities and operations, including--

(A) Airports;
(B) Train terminals, depots, and switching and control facilities;
(C) Major bridges and tunnels;
(D) Communications centers, such as receiving and transmission centers, and control centers;
(E) Transmission and receiving operations for radio, television, and satellite signals; and
(F) Network computer systems containing data important to public health and or national security:

(v) The Federal Reserve System and stock and commodity exchanges;

(vi) Hospitals and health research facilities;

(vii) Large public events, such as political conventions and major parades, concerts, and sporting events; and

(viii) Large enclosed shopping centers (malls).

(3) If an employer believes that "facilities, materials, or operations" which are not listed in this subsection fall within the contemplated purview of this exemption, a request for a ruling may be filed with the Administrator. A ruling that such "facilities, materials or operations" are included within this exemption must be obtained prior to the administration of a polygraph test or any other action prohibited by section 3 of the Act. It is not possible to exhaustively account for all "facilities, materials, or operations" which fall within the purview of section 7(e)(1)(A). While it is likely that additional entities may fall within the exemption's scope, any such "facilities, materials, or operations" must meet the "significant impact" test. Thus, "facilities, materials, or operations" which would be of vital importance during periods of war or civil emergency, or whose sabotage would greatly affect the public health or safety, could fall within the scope of the term "significant impact".

(e)(i) Section 7(e)(1)(B) of the Act extends the exemption to firms whose functions includes protection of "currency, negotiable securities, precious commodities or instruments, or proprietary information". These terms collectively are construed to include assets primarily handled by financial institutions such as banks, credit unions, savings and loan institutions, stock and commodity exchanges, brokers, or security dealers.

(ii) The terms "currency, negotiable securities, precious commodities or instruments or proprietary information" refer to assets which are typically handled by, protected for and transported between and among commercial and financial institutions. Services provided by the armored car industry are thus clearly within the scope of the exemption, as are security alarm and security guard services provided to financial and similar institutions of the type referred to above. Also included are the cash assets handled by casinos, racetracks, lotteries, or other businesses where the cash constitutes the inventory or stock in trade. Similarly, security services provided to businesses engaged in the sale or exchange of precious commodities such as gold, silver, or diamonds, including jewelry stores that stock such precious commodities prior to transformation into pieces of jewelry, are also included. The term "proprietary information" generally refers to business assets such as trade secrets, manufacturing processes, research and development data, and cost/pricing data. Security alarm or guard services provided to protect the premises of private homes, or businesses not primarily engaged in handling, trading, transferring, or storing currency, negotiable securities, precious commodities or instruments, or proprietary information, on the other hand, are normally outside the scope of the exemption. This is true even though such places may physically house some such assets. However, where such security alarm or guard service is specifically designed or limited to the protection of the types of assets identified above, whether located in businesses or residences, or elsewhere, the security services provided are within the scope of the exemption. For example, a security system specially designed to protect diamonds kept in a home vault of a diamond merchant would be within the exemption. However, a security system installed generally to protect the premises of the home of the same merchant would not be within the exemption. A guard sent to a client firm to secure a restricted office in which only proprietary research data is developed and stored is within the scope of the exemption. Another guard sent to the same firm to protect the building entrance from unwanted intruders is not within the scope of the exemption even though the building contains the restricted room in which the proprietary research data is developed and stored, since the security system is not specifically designed to protect the proprietary information.

(f) An employer who falls within the scope of the exemption is one "whose function includes" protection of "facilities, materials, or operations", discussed in paragraph (d) of this section or of "currency, negotiable securities, precious commodities or instruments, or proprietary information" discussed in paragraph (e) of this section. Thus, assuming that the employer has met the "primary business purpose" test, as set forth

in paragraph (c) of this section, the employer's operations then must simply "include" protection of at least one of the facilities within the scope of the exemption.

(g)(1) Section 7(e)(2) provides that the exemption shall not apply if a polygraph test is administered to a prospective employee who would not be employed to protect the "facilities, materials, operations, or assets" referred to in section 7(e)(1) of the Act, and discussed in paragraphs (d) and (e) of this section. Thus, while the exemption applies to employers whose function "includes" protection of certain facilities, employers would not be permitted to administer polygraph tests to prospective employees who are not being employed to protect such function.

(2) The phrase "employed to protect" in section 7(e)(2) has reference to a wide spectrum of prospective employees in the security industry, and includes any job applicant who would likely protect the security of any qualifying "facilities, materials, operations, or assets."

(3) In many cases, it will be readily apparent that certain positions within security companies would, by virtue of the individual's official job duties, entail "protection". For example, armored car drivers and guards, security guards, and alarm system installers and maintenance personnel all would be employed to protect in the most direct and literal sense of the term.

(4) The scope of the exemption is not limited, however, to those security personnel having direct, physical access to the facilities being protected. Various support personnel may also, as a part of their job duties, have access to the process of providing security services due to the position's exposure to knowledge of security plans and operations, employee schedules, delivery schedules, and other such activities. Where a position entails the opportunity to cause or participate in a breach of security, an employee to be hired for the position would also be deemed to be "employed to protect" the facility.

(i) For example, in the armored car industry, the duties of personnel other than guards and drivers may include taking customer orders for currency and commodity transfers, issuing security badges to guards, coordinating routes of travel and times for pick-up and delivery, issuing access codes to customers, route planning and other sensitive responsibilities. Similarly, in the security alarm industry, several types of employees would have access to the process of providing security services, such as designers of security systems, system monitors, service technicians, and billing clerks (where they review the system design drawings to ensure proper customer billing). In the security industry, generally, administrative employees may have access to customer accounts, schedules, information relating to alarm system failures, and other security information, such as security employee absences due to illness that create "holes," in a security plan. Employees of this type are a part of the overall security services provided by the employer. Such employees possess the ability to affect, on an opportunistic basis, the security of protected operations, by virtue of the knowledge gained through their job duties.

(ii) On the other hand, there are certainly some types of employees in the security industry who "would not be employed to protect" the facilities or assets within the purview of the exemption, and who would not be in the process of providing exempt security services. For example, custodial and maintenance employees typically would not have access, either directly or indirectly as a part of their job duties, to the operations or clients of the employer. Any employee whose "access" to secured areas or to sensitive information is on a controlled basis, such as by escort, would also be outside the scope of the exemption. In cases where security service companies also provide janitorial, food and beverage, or other services unrelated to security, the exemption would clearly not extend to any employee considered for employment in such activity.

(5) The phrase "employed to protect" includes any job applicant who, if not hired specifically to protect the listed facilities or assets, would likely be so employed, as through a systematic assignment process, such as rotation of work assignments or selection from a pool of available employees, even if selection for such work is unpredictable or infrequent. A prospective employee whose job assignment to perform qualifying protective functions would be made by selection from a pool of available employees (all of whom have an equal chance of being selected), or an employee who is to be rotated through different job assignments which include some qualifying protective functions, is included within the exemption. However, if there is only a remote possibility that a prospective employee, if hired, would perform exempt protective functions, such as on an emergency basis, or if a prospective employee by reason of his or her position, qualifications, or level of experience or for other reasons, would when hired, not ordinarily be assigned to protect qualifying facilities, such an employee would be deemed to have not been hired to protect such facilities and would be excluded from the exemption.

(h) Polygraph tests administered pursuant to this exemption are subject to the limitations set forth in sections 8 and 10 of the Act, as discussed in sections 801.21, 801.22, 801.23, 801.24, 801.25, 801.26, and 801.35 of this part. As provided in these sections, the exemption will apply only if certain requirements are met. Failure to satisfy any of the specified requirements nullifies the statutory authority for polygraph test

administration and may subject the employer to the assessment of civil money penalties and other remedial actions, as provided for in section 6 of the Act (see subpart E, section 801.42 of this part). The administration of such tests is also subject to State or local laws, or collective bargaining agreements, which may either prohibit lie detectors test, or contain more restrictive provisions with respect to polygraph testing.

Subpart C--Restrictions on Polygraph Usage Under Exemptions

Section 801.20 Adverse employment action under ongoing investigation exemption.

(a) Section 8(a)(1) of the Act provides that the limited exemption in section 7(d) of the Act and section 801.12 of this part for ongoing investigations shall not apply if an employer discharges, disciplines, denies employment or promotion or otherwise discriminates in any manner against a current employee based upon the analysis of a polygraph test chart or the refusal to take a polygraph test, without additional supporting evidence.

(b) "Additional supporting evidence", for purposes of section 8(a) of the Act, includes, but is not limited to, the following:

(1)(i) Evidence indicating that the employee had access to the missing or damaged property that is the subject of an ongoing investigation; and

(ii) Evidence leading to the employer's reasonable suspicion that the employee was involved in the incident or activity under investigation; or

(2) Admissions or statements made by an employee before, during or following a polygraph examination.

(c) Analysis of a polygraph test chart or refusal to take a polygraph test may not serve as a basis for adverse employment action, even with additional supporting evidence, unless the employer observes all the requirements of sections 7(d) and 8(b) of the Act, as described in sections 801.12, 801.22, 801.23, 801.24, and 801.25 of this part.

Section 801.21 Adverse employment action under security service and controlled substance exemptions.

(a) Section 8(a)(2) of the Act provides that the security service exemption in section 7(e) of the Act and section 801.14 of this part and the controlled substance exemption in section 7(f) of the Act and section 801.13 of this part shall not apply if an employer discharges, disciplines, denies employment or promotion, or otherwise discriminates in any manner against a current employee or prospective employee based solely on the analysis of a polygraph test chart or the refusal to take a polygraph test.

(b) Analysis of a polygraph test chart or refusal to take a polygraph test may serve as one basis for adverse employment actions of the type described in paragraph (a) of this section, provided that the adverse action was also based on another bona fide reason, with supporting evidence therefor. For example, traditional factors such as prior employment experience, education, job performance, etc. may be used as a basis for employment decisions. Employment decisions based on admissions or statements made by an employee or prospective employee before, during or following a polygraph examination may, likewise, serve as a basis for such decisions.

(c) Analysis of a polygraph test chart or the refusal to take a polygraph test may not serve as a basis for adverse employment action, even with another legitimate basis for such action, unless the employer observes all the requirements of section 7(e) or (f) of the Act, as appropriate, and section 8(b) of the Act, as described in sections 801.13, 801.14, 801.22, 801.23, 801.24, and 801.25 of this part.

Section 801.22 Rights of examinee--general.

(a) Pursuant to section 8(b) of the Act, the limited exemption in section 7(d) of the Act for ongoing investigations, and the security service and controlled substance exemptions in 7(e) and (f) of the Act (described in section 801.12, 801.13, and 801.14 of this part) shall not apply unless all of the requirements set forth in this section and sections 801.23 through 801.25 of this part are met.

(b) During all phases of the polygraph testing the person being examined has the following rights:

(1) The examiner may terminate the test at any time.

(2) The examinee may not be asked any questions in a degrading or unnecessarily intrusive manner.

(3) The examinee may not be asked any questions dealing with:
(i) Religious beliefs or affiliations;
(ii) Beliefs or opinions regarding racial matters;
(iii) Political beliefs or affiliations;
(iv) Sexual preferences or behavior; or
(v) Beliefs, affiliations, opinions, or lawful activities concerning unions or labor organizations.

(4) The examinee may not be subjected to a test when there is sufficient written evidence by a physician that the examinee is suffering from any medical or psychological condition or undergoing any treatment that might cause abnormal responses during the actual testing phase. "Sufficient written evidence" shall constitute, at a minimum, a statement by a physician specifically describing the examinee's medical or psychological condition or treatment and the basis for the physician's opinion that the condition or treatment might result in such abnormal responses.

(5) An employee or prospective employee who exercises the right to terminate the test, or who for medical reasons with sufficient supporting evidence is not administered the test, shall be subject to adverse employment action only on the same basis as one who refuses to take a polygraph test, as described in sections 801.20 and 801.21 of this part.

(c) Any polygraph examination shall consist of one or more pretest phases, actual testing phases, and post-test phases, which must be conducted in accordance with the rights of examinees described in sections 801.23 through 801.25 of this part.

Section 801.23 Rights of examinee--pretest phase.

(a) The pretest phase consists of the questioning and other preparation of the prospective examinee before the actual use of the polygraph instrument. During the initial pretest phase, the examinee must be:

(1) Provided with written notice, in a language understood by the examinee, as to when and where the examination will take place and that the examinee has the right to consult with counsel or an employee representative before each phase of the test. Such notice shall be received by the examinee at least forty-eight hours, excluding weekend days and holidays, before the time of the examination, except that a prospective employee may, at the employee's option, give written consent to administration of a test anytime within 48 hours but no earlier than 24 hours after receipt of the written notice. The written notice or proof of service must set forth the time and date of receipt by the employee or prospective employee and be verified by his or her signature. The purpose of this requirement is to provide a sufficient opportunity prior to the examination for the examinee to consult with counsel or an employee representative. Provision shall also be made for a convenient place on the premises where the examination will take place at which the examinee may consult privately with an attorney or an employee representative before each phase of the test. The attorney or representative may be excluded from the room where the examination is administered during the actual testing phase.

(2) Informed orally and in writing of the nature and characteristics of the polygraph instrument and examination, including an explanation of the physical operation of the polygraph instrument and the procedure used during the examination.

(3) Provided with a written notice prior to the testing phase, in a language understood by the examinee, which shall be read to and signed by the examinee. Use of appendix A to this part, if properly completed, will constitute compliance with the contents of the notice requirement of this paragraph. If a format other than in appendix A is used, it must contain at least the following information:

(i) Whether or not the polygraph examination area contains a two-way mirror, a camera, or other device through which the examinee may be observed;

(ii) Whether or not any other device, such as those used in conversation or recording will be used during the examination;

(iii) That both the examinee and the employer have the right, with the other's knowledge, to make a recording of the entire examination;

(iv) That the examinee has the right to terminate the test at any time;

(v) That the examinee has the right, and will be given the opportunity to review all questions to be asked during the test;

(vi) That the examinee may not be asked questions in a manner which degrades, or needlessly intrudes;

(vii) That the examinee may not be asked any questions concerning religious beliefs or opinions; beliefs regarding racial matters; political beliefs or affiliations; matters relating to sexual behavior; beliefs, affiliations, opinions, or lawful activities regarding unions or labor organizations;

(viii) That the test may not be conducted if there is sufficient written evidence by a physician that the examinee is suffering from a medical or psychological condition or undergoing treatment that might cause abnormal responses during the examination;

(ix) That the test is not and cannot be required as a condition of employment;

(x) That the employer may not discharge, dismiss, discipline, deny employment or promotion or otherwise discriminate against the examinee based on the analysis of a polygraph test, or based on the examinee's refusal to take such a test, without additional evidence which would support such action;

(xi)(A) In connection with an ongoing investigation, that the additional evidence required for the employer to take adverse action against the examinee, including termination, may be evidence that the examinee had access to the property that is the subject of the investigation, together with evidence supporting the employer's reasonable suspicion that the examinee was involved in the incident or activity under investigation;

(B) That any statement made by the examinee before or during the test may serve as additional supporting evidence for an adverse employment action, as described in paragraph (a)(3)(x) of this section, and that any admission of criminal conduct by the examinee may be transmitted to an appropriate government law enforcement agency;

(xii) That information acquired from a polygraph test may be disclosed by the examiner or by the employer only:

(A) To the examinee or any other person specifically designated in writing by the examinee to receive such information;

(B) To the employer that requested the test;

(C) To a court, governmental agency, arbitrator, or mediator pursuant to a court order;

(D) To a U.S. Department of Labor official when specifically designated in writing by the examinee to receive such information;

(E) By the employer, to an appropriate governmental agency without a court order where, and only insofar as, the information disclosed is an admission of criminal conduct;

(xiii) That if any of the examinee's rights or protections under the law are violated, the examinee has the right to file a complaint with the Wage and Hour Division of the U.S. Department of Labor, or to take action in court against the employer. Employers who violate this law are liable to the affected examinee, who may recover such legal or equitable relief as may be appropriate, including, but not limited to, employment, reinstatement, and promotion, payment of lost wages and benefits, and reasonable costs, including attorney's fees. The Secretary of Labor may also bring action to obtain compliance with the Act, and may assess civil money penalties against the employer;

(xiv) That the examinee has the right to obtain and consult with legal counsel or other representative before each phase of the test, although the legal counsel or representative may be excluded from the room where the test is administered during the actual testing phase.

(xv) That the employee's rights under the Act may not be waived, either voluntarily or involuntarily, by contract or otherwise, except as part of a written settlement to a pending action or complaint under the Act, agreed to and signed by the parties.

(b) During the initial or any subsequent pretest phases, the examinee must be given the opportunity, prior to the actual testing phase, to review all questions in writing that the examiner will ask during each testing phase. Such questions may be presented at any point in time prior to the testing phase.

Section 801.24 Rights of examinee-actual testing phase.

(a) The actual testing phase refers to that time during which the examiner administers the examination by using a polygraph instrument with respect to the examinee and then analyzes the charts derived from the test.

Throughout the actual testing phase, the examiner shall not ask any question that was not presented in writing for review prior to the testing phase. An examiner may, however, recess the testing phase and return to the pre-test phase to review additional relevant questions with the examinee. In the case of an ongoing investigation, the examiner shall ensure that all relevant questions (as distinguished from technical baseline questions) pertain to the investigation.

(b) No testing period subject to the provisions of the Act shall be less than ninety minutes in length. Such "test period" begins at the time that the examiner begins informing the examinee of the nature and characteristics of the examination and the instruments involved, as prescribed in section 8(b)(2)(B) of the Act and section 801.23 (a)(2) of this part, and ends when the examiner completes the review of the test results with the examinee as provided in section 801.25 of this part. The ninety-minute minimum duration shall not apply if the examinee voluntarily acts to terminate the test before the completion thereof, in which event the examiner may not render an opinion regarding the employee's truthfulness.

Section 801.25 Rights of examinee--post-test phase.

(a) The post-test phase refers to any questioning or other communication with the examinee following the use of the polygraph instrument, including review of the results of the test with the examinee. Before any adverse employment action, the employer must:

(1) Further interview the examinee on the basis of the test results; and

(2) Give to the examinee a written copy of any opinions or conclusion rendered in response to the test, as well as the questions asked during the test, with the corresponding charted responses. The term "corresponding charted responses" refers to copies of the entire examination charts recording the employee's physiological responses, and not just the examiner's written report which describes the examinee's responses to the questions as "charted" by the instrument.

Section 801.26 Qualifications and requirements for examiners.

(a) Section 8(b) and (c) of the Act provides that the limited exemption in section 7(d) of the Act for ongoing investigations, and the security service and controlled substances exemptions in section 7(e) and (f) of the Act, shall not apply unless the person conducting the polygraph examination meets specified qualifications and requirements.

(b) An examiner must meet the following qualifications:

(1) Have a valid current license, if required by the State in which the test is to be conducted; and

(2) Carry a minimum bond of $50,000 provided by a surety incorporated under the laws of the United States or of any State, which may under those laws guarantee the fidelity of persons holding position of trust, or carry an equivalent amount of professional liability coverage.

(c) An examiner must also, with respect to examinees identified by the employer pursuant to section 801.30(c) of this part:

(1) Observe all rights of examinees, as set out in sections 801.22, 801.23, 801.24, and 801.25 of this part;

(2) Administer no more than five polygraph examinations in any one calendar day on which a test or tests subject to the provision of EPPA are administered, not counting those instances where an examinee voluntarily terminates an examination prior to the actual testing phase;

(3) Administer no polygraph examination subject to the provisions of the Act which is less than ninety minutes in duration, as described in section 801.24(b) of this part;

(4) Render any opinion or conclusion regarding truthfulness or deception in writing. Such opinion or conclusion must be based solely on the polygraph test results. The written report shall not contain any information other than admissions, information, case facts, and interpretation of the charts relevant to the stated purpose of the polygraph test and shall not include any recommendation concerning the employment of the examinee; and

(5) Maintain all opinions, reports, charts, written questions, lists, and other records relating to the test, including statements signed by examinees advising them of rights under the Act (as described in section 801.23(a)(3) of this part) and any electronic recordings of examinations, for at least

three years from the date of the administration of the test. (See section 801.30 of this part for recordkeeping requirements.)

Subpart D--Recordkeeping and Disclosure Requirements

Section 801.30 Records to be preserved for 3 years.

(a) The following records shall be kept for a minimum period of three years from the date the polygraph examination is conducted (or from the date the examination is requested if no examination is conducted):

(1) Each employer who requests an employee to submit to a polygraph examination in connection with an ongoing investigation involving economic loss or injury shall retain a copy of the statement that sets forth the specific incident or activity under investigation and the basis for testing that particular employee, as required by section 7(d)(4) of the Act and described in section 801.12 (a)(4) of this part.

(2) Each employer who administers a polygraph examination under the exemption provided by section 7(f) of the Act (described in section 801.13 of this part) in connection with an ongoing investigation of criminal or other misconduct involving, or potentially involving, loss or injury to the manufacture, distribution or dispensing of a controlled substance, shall retain records specifically identifying the loss or injury in question and the nature of the employee's access to the person or property that is the subject of the investigation.

(3) Each employer who requests an employee or prospective employee to submit to a polygraph examination pursuant to any of the exemptions under section 7(d), (e) or (f) of the Act (described in sections 801.12, 801.13, and 801.14) shall retain a copy of the written statement that sets forth the time and place of the examination and the examinee's right to consult with counsel, as required by section 8 (b)(2)(A) of the Act and described in section 801.23 (a)(1) of this part.

(4) Each employer shall identify in writing to the examiner persons to be examined pursuant to any of the exemptions under section 7(d), (e) or (f) of the Act (described in section 801.12, 801.13, and 801.14 of this part), and shall retain a copy of such notice.

(5) Each employer who retains an examiner to administer examinations pursuant to any of the exemptions under section 7(d), (e) or (f) of the Act (described in section 801.12, 801.13, and 801.14 of this part) shall maintain copies of all opinions, reports or other records furnished to the employer by the examiner relating to such examinations.

(6) Each examiner retained to administer examinations to persons identified by employers under paragraph (a)(4) of this section shall maintain all opinions, reports, charts, written questions, lists, and other records relating to polygraph tests of such persons. In addition, the examiner shall maintain records of the number of examinations conducted during each day in which one or more tests are conducted pursuant to the Act, and, with regard to tests administered to persons identified by their employer under paragraph (a)(4) of this section, the duration of each test period, as defined in section 801.24(b) of this part.

(b) Each employer shall keep the records required by this part safe and accessible at the place or places of employment or at one or more established central recordkeeping offices where employment records are customarily maintained. If the records are maintained at a central recordkeeping office, other than in the place or places of employment, such records shall be made available within 72 hours following notice from the Secretary or an authorized representative.

(c) Each examiner shall keep the records required by this part safe and accessible at the place or places of business or at one or more established central recordkeeping offices where examination records are customarily maintained. If the records are maintained at a central recordkeeping office, other than in the place or places of business, such records shall be made available within 72 hours following notice from the Secretary or an authorized representative.

(d) All records shall be available for inspection and copying by the Secretary or an authorized representative. Information for which disclosure is restricted under section 9 of the Act and section 801.35 of this part shall be made available to the Secretary or the Secretary's representative where the examinee has designated the Secretary, in writing, to receive such information, or by order of a court of competent jurisdiction.

(Approved by the Office of Management and Budget under control number 1215-0170).

Section 801.35 Disclosure of test information.

Section 9 of the Act prohibits the unauthorized disclosure of any information obtained during a polygraph test by any person, other than the examinee, directly or indirectly, except as follows:

(a) A polygraph examiner or an employer (other than an employer exempt under section 7(a), (b), or (c) of the Act (described in sections 801.10 and 801.11 of this part)) may disclose information acquired from a polygraph test only to:

(1) The examinee or an individual specifically designated in writing by the examinee to receive such information;

(2) The employer that requested the polygraph test pursuant to the provisions of this Act (including management personnel of the employer where the disclosure is relevant to the carrying out of their job responsibilities);

(3) Any court, governmental agency, arbitrator, or mediator pursuant to an order from a court of competent jurisdiction requiring the production of such information;

(4) The Secretary of Labor, or the Secretary's representative, when specifically designated in writing by the examinee to receive such information.

(b) An employer may disclose information from the polygraph test at any time to an appropriate governmental agency without the need of a court order where, and only insofar as, the information disclosed is an admission of criminal conduct.

(c) A polygraph examiner may disclose test charts, without identifying information (but not other examination materials and records), to another examiner(s) for examination and analysis, provided that such disclosure is for the sole purpose of consultation and review of the initial examiner's opinion concerning the indications of truthfulness or deception. Such action would not constitute disclosure under this Part provided that the other examiner has no direct or indirect interest in the matter.

Subpart E--Enforcement

Section 801.40 General.

(a) Whenever the Secretary believes that the provisions of the Act or these regulations have been violated, such action shall be taken and such proceedings instituted as deemed appropriate, including the following:

(1) Petitioning any appropriate District Court of the United States for temporary or permanent injunctive relief to restrain violation of the provisions of the Act or this part by any person, and to require compliance with the Act and this part, including such legal or equitable relief incident thereto as may be appropriate, including, but not limited to, employment, reinstatement, promotion, and the payment of lost wages and benefits;

(2) Assessing a civil penalty against any employer who violates any provision of the Act or this part in an amount of not more than $10,000 for each violation, in accordance with regulations set forth in this part; or

(3) Referring any unpaid civil money penalty which has become a final and unappealable order of the Secretary or a final judgment of a court in favor of the Secretary to the Attorney General for recovery.

(b)(1) Any employer who violates this Act shall be liable to the employee or prospective employee affected by such violation for such legal or equitable relief as may be appropriate, including, but not limited to, employment, reinstatement, promotion, and the payment of lost wages and benefits.

(2) An action under this subsection may be maintained against the employer in any Federal or State court of competent jurisdiction by an employee or prospective employee for or on behalf of such employee, prospective employee and others similarly situated. Such action must be commenced within a period not to exceed 3 years after the date of the alleged violation. The court, in its discretion, may allow reasonable costs (including attorney's fees) to the prevailing party.

(c) The taking of any one of the actions referred to in paragraph (a) of this section shall not be a bar to the concurrent taking of any other appropriate action.

Section 801.41 Representation of the Secretary.

(a) Except as provided in section 518(a) of title 28, U.S. Code, relating to litigation before the Supreme Court, the Solicitor of Labor may appear for and represent the Secretary in any civil litigation brought under section 6 of the Act, as described in section 801.40 of this part.

(b) The Solicitor of Labor, through authorized representatives, shall represent the Administrator in all administrative hearings under the provisions of section 6 of the Act and this part.

Section 801.42 Civil money penalties--assessment.

(a) A civil money penalty in an amount not to exceed $10,000 for any violation may be assessed against any employer for:

(1) Requiring, requesting, suggesting or causing an employee or prospective employee to take a lie detector test or using, accepting, referring to or inquiring about the results of any lie detector test of any employee or prospective employee, other than as provided in the Act or this part;

(2) Taking an adverse action or discriminating in any manner against any employee or prospective employee on the basis of the employee's or prospective employee's refusal to take a lie detector test, other than as provided in the Act or this part;

(3) Discriminating or retaliating against an employee or prospective employee for the exercise of any rights under the Act;

(4) Disclosing information obtained during a polygraph test, except as authorized by the Act or this part;

(5) Failing to maintain the records required by the Act or this part;

(6) Resisting, opposing, impeding, intimidating, or interfering with an official of the Department of Labor during the performance of an investigation, inspection, or other law enforcement function under the Act or this part; or

(7) Violating any other provision of the Act or this part.

(b) In determining the amount of penalty to be assessed for any violation of the Act or this part, the Administrator will consider the previous record of the employer in terms of compliance with the Act and regulations, the gravity of the violations, and other pertinent factors. The matters which may be considered include, but are not limited to, the following:

(1) Previous history of investigation(s) or violation(s) of the Act or this part;

(2) The number of employees or prospective employees affected by the violation or violations;

(3) The seriousness of the violation or violations;

(4) Efforts made in good faith to comply with the provisions of the Act and this part;

(5) If the violations resulted from the actions or inactions of an examiner, the steps taken by the employer to ensure the examiner complied with the Act and the regulations in this part, and the extent to which the employer could reasonably have foreseen the examiner's actions or inactions;

(6) The explanation of the employer, including whether the violations were the result of a bona fide dispute of doubtful legal certainty;

(7) The extent to which the employee(s) or prospective employee(s) suffered loss or damage;

(8) Commitment to future compliance, taking into account the public interest and whether the employer has previously violated the provisions of the Act or this part.

Section 801.43 Civil money penalties--payment and collection.

Where the assessment is directed in a final order of the Department, the amount of the penalty is immediately due and payable to the United States Department of Labor. The person assessed such penalty shall remit promptly the amount thereof as finally determined, to the Administrator by certified check or by money order, made payable to the order of "Wage and Hour Division, Labor". The remittance shall be delivered or mailed to the Wage and Hour Division Regional Office for the area in which the violations occurred.

Subpart F--Administrative Proceedings

General

Section 801.50 Applicability of procedures and rules.

The procedures and rules contained in this subpart prescribe the administrative process for assessment of civil money penalties for violations of the Act or of these regulations.

Procedures Relating to Hearing

Section 801.51 Written notice of determination required.

Whenever the Administrator determines to assess a civil money penalty for a violation of the Act or this part, the person against whom such penalty is assessed shall be notified in writing of such determination. Such notice shall be served in person or by certified mail.

Section 801.52 Contents of notice.

The notice required by section 801.51 of this part shall:

(a) Set forth the determination of the Administrator and the reason or reasons therefor;

(b) Set forth a description of each violation and the amount assessed for each violation;

(c) Set forth the right to request a hearing on such determination;

(d) Inform any affected person or persons that in the absence of a timely request for a hearing, the determination of the Administrator shall become final and unappealable; and

(e) Set forth the time and method for requesting a hearing, and the procedures relating thereto, as set forth in section 801.53 of this part.

Section 801.53 Request for hearing.

(a) Any person desiring to request an administrative hearing on a civil money penalty assessment pursuant to this part shall make such request in writing to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, no later than thirty (30) days after the service of the notice referred to in section 801.51 of this part.

(b) The request for hearing must be received by the Administrator at the address set in the notice issued pursuant to section 801.52 of this part, within the time set forth in paragraph (a) of this section. For the affected person's protection, if the request is by mail, it should be by certified mail, return receipt requested.

(c) No particular form is prescribed for any request for hearing permitted by this subpart. However, any such request shall:

(1) Be typewritten or legibly written;

(2) Specify the issue or issues stated in the notice of determination giving rise to such request;

(3) State the specific reason or reasons why the person requesting the hearing believes such determination is in error;

(4) Be signed by the person making the request or by an authorized representative of such person; and

(5) Include the address at which such person or authorized representative desires to receive further communications relating thereto.

Rules of Practice

Section 801.58 General.

Except as provided in this subpart, and to the extent they do not conflict with the provisions of this subpart, the "Rules of Practice and Procedure for Administrative Hearings Before the Office of Administrative Law Judges" established by the Secretary at 29 CFR part 18 shall apply to administrative proceedings under this subpart.

Section 801.59 Service and computation of time.

(a) Service of documents under this subpart shall be made by personal service to the individual, officer of a corporation, or attorney of record or by mailing the determination to the last known address of the individual, officer, or attorney. If done by certified mail, service is complete upon mailing. If done by regular mail, service is complete upon receipt by addressee.

(b) Two (2) copies of all pleadings and other documents required for any administrative proceeding provided by this part shall be served on the attorneys for the Department of Labor. One copy shall be served on the Associate Solicitor, Division of Fair Labor Standards, Office of the Solicitor, U.S. Department of Labor, 200 Constitution Avenue, N.W., Washington, DC 20210, and one copy on the Attorney representing the Department in the proceeding.

(c) Time will be computed beginning with the day following the action and includes the last day of the period unless it is a Saturday, Sunday, or federally-observed holiday, in which case the time period includes the next business day.

(d) When a request for hearing is served by mail, five (5) days shall be added to the prescribed period during which the party has the right to request a hearing on the determination.

Section 801.60 Commencement of proceeding.

Each administrative proceeding permitted under the Act and these regulations shall be commenced upon receipt of a timely request for hearing filed in accordance with section 801.53 of this part.

Section 801.61 Designation of record.

(a) Each administrative proceeding instituted under the Act and this part shall be identified of record by a number preceded by the year and the letters "EPPA".

(b) The number, letter, and designation assigned to each such proceeding shall be clearly displayed on each pleading, motion, brief, or other formal document filed and docketed of record.

Section 801.62 Caption of proceeding.

(a) Each administrative proceeding instituted under the Act and this part shall be captioned in the name of the person requesting such hearing, and shall be styled as follows:

In Matter of _____
Respondent.

(b) For the purposes of administrative proceedings under the Act and this part the "Secretary of Labor" shall be identified as plaintiff and the person requesting such hearing shall be named as respondent.

Referral for Hearing

Section 801.63 Referral to Administrative Law Judge.

(a) Upon receipt of a timely request for a hearing filed pursuant to and in accordance with section 801.53 of this part, the Administrator, by the Associate Solicitor for the Division of Fair Labor Standards or by the Regional Solicitor for the Region in which the action arose, shall by Order of Reference, promptly refer a copy of the notice of administrative determination complained of, and the original or a duplicate copy of the request for hearing signed by the person requesting such hearing or the authorized representative of such person, to the Chief Administrative Law Judge, for a determination in an administrative proceeding as provided herein. The notice of administrative determination and request for hearing shall be filed of record in the Office of the Chief Administrative Law Judge and shall, respectively, be given the effect of a complaint and answer thereto for purposes of the administrative proceeding, subject to any amendment that may be permitted under this part.

(b) A copy of the Order of Reference, together with a copy of this part, shall be served by counsel for the Secretary upon the person requesting the hearing, in the manner provided in 29 CFR 18.3.

Section 801.64 Notice of docketing.

The Chief Administrative Law Judge shall promptly notify the parties of the docketing of each matter.

Procedures Before Administrative Law Judge

Section 801.65 Appearances; representation of the Department of Labor.

The Associate Solicitor, Division of Fair Labor Standards, or Regional Solicitor shall represent the Department in any proceeding under this part.

Section 801.66 Consent findings and order.

(a) General. At any time after the commencement of a proceeding under this part, but prior to the reception of evidence in any such proceeding, a party may move to defer the receipt of any evidence for a reasonable time to permit negotiation of an agreement containing consent findings and an order disposing of the whole or any part of the proceeding. The allowance of such deferment and the duration thereof shall be at the discretion of the Administrative Law Judge, after consideration of the nature of the proceeding, the requirements of the public interest, the representations of the parties, and the probability of an agreement being reached which will result in a just disposition of the issues involved.

(b) Content. Any agreement containing consent findings and an order disposing of a proceeding or any part thereof shall also provide:

(1) That the order shall have the same force and effect as an order made after full hearing;

(2) That the entire record on which any order may be based shall consist solely of the notice of administrative determination (or amended notice, if one is filed), and the agreement;

(3) A waiver of any further procedural steps before the Administrative Law Judge; and

(4) A waiver of any right to challenge or contest the validity of the findings and order entered into, in accordance with the agreement.

(c) Submission. On or before the expiration of the time granted for negotiations, the parties or their authorized representatives or their counsel may:

(1) Submit the proposed agreement for consideration by the Administrative Law Judge; or

(2) Inform the Administrative Law Judge that agreement cannot be reached.

(d) Disposition. In the event an agreement containing consent findings and an order is submitted within the time allowed therefor, the Administrative Law Judge, within thirty (30) days thereafter, shall, if satisfied with its form and substance, accept such agreement by issuing a decision based upon the agreed findings.

Section 801.67 Decision and Order of Administrative Law Judge.

(a) The Administrative Law Judge shall prepare, as promptly as practicable after the expiration of the time set for filing proposed findings and related papers, a decision on the issues referred by the Secretary.

(b) The decision of the Administrative Law Judge shall be limited to a determination whether the respondent has violated the Act or these regulations and the appropriateness of the remedy or remedies imposed by the Secretary. The Administrative Law Judge shall not render determinations on the legality of a regulatory provision or the constitutionality of a statutory provision.

(c) The decision of the Administrative Law Judge, for purposes of the Equal Access to Justice Act (5 U.S.C. 504), shall be limited to the determinations of attorney fees and/or other litigation expenses in adversary proceedings requested pursuant to section 801.53 of this part which involve the imposition of a civil money penalty assessed for a violation of the Act or this part.

(d) The decision of the Administrative Law Judge shall include a statement of findings and conclusions, with reasons and basis therefor, upon each material issue presented on the record. The decision shall also include an appropriate order which may be to affirm, deny, reverse, or modify, in whole or in part, the determination of the Secretary. The reason or reasons for such order shall be stated in the decision.

(e) The Administrative Law Judge shall serve copies of the decision on each of the parties.

(f) If any party desires review of the decision of the Administrative Law Judge, a petition for issuance of a Notice of Intent shall be filed in accordance with section 801.89 of this subpart.

(g) The decision of the Administrative Law Judge shall constitute the final order of the Secretary unless the Secretary, pursuant to section 801.70 of this subpart issues a Notice of Intent to Modify or Vacate the Decision and Orders.

Modification or Vacation of Decision and Order of Administrative Law Judge

Section 801.68 Authority of the Secretary.

(a) The Secretary may modify or vacate the Decision and Order of the Administrative Law Judge whenever the Secretary concludes that the Decision and Order:

(1) Is inconsistent with a policy or precedent established by the Department of Labor;

(2) Encompasses determinations not within the scope of the authority of the Administrative Law Judge;

(3) Awards attorney fees and/or other litigation expenses pursuant to the Equal Access to Justice Act which are unjustified or excessive; or

(4) Otherwise warrants modifying or vacating.

(b) The Secretary may modify or vacate a finding of fact only where the Secretary determines that the findings is clearly erroneous.

Section 801.69 Procedures for initiating review.

(a) Within twenty (20) days after the date of the decision of the Administrative Law Judge, the respondent, the Administrator, or any other party desiring review thereof, may file with the Secretary an original and two copies of a petition for issuance of a Notice of Intent as described under section 801.70. The petition shall be in writing and shall contain a concise and plain statement specifying the grounds on which review is sought. A copy of the Decision and order of the Administrative Law judge shall be attached to the petition.

(b) Copies of the petition shall be served upon all parties to the proceeding and on the Chief Administrative Law Judge.

Section 801.70 Implementation by the Secretary.

(a) Review of the Decision and Order by the Secretary shall not be a matter of right but of the sound discretion of the Secretary. At any time within 30 days after the issuance of the Decision and Order of the Administrative Law Judge the Secretary may, upon the Secretary's own motion or upon the acceptance of a party's petition, issue a Notice of Intent to modify or vacate the Decision and Order in question.

(b) The Notice of Intent to Modify or Vacate a Decision and Order shall specify the issue or issues to be considered, the form in which submission shall be made (i.e., briefs, oral argument, etc.), and the time within which such presentation shall be submitted. The Secretary shall closely limit the time within which the briefs must be filed or oral presentations made, so as to avoid unreasonable delay.

(c) The Notice of Intent shall be issued within thirty (30) days after the date of the Decision and Order in question.

(d) Service of the Notice of Intent shall be made upon each party to the proceeding, and upon the Chief Administrative Law Judge, in person or by certified mail.

Section 801.71 Filing and service.

(a) Filing. All documents submitted to the Secretary shall be filed with the Secretary of Labor, U.S. Department of Labor, Washington, DC 20210.

(b) Number of copies. An original and two copies of all documents shall be filed.

(c) Computation of time for delivery by mail. Documents are not deemed filed with the Secretary until actually received by the Secretary. All documents, including documents filed by mail, must be received by the Secretary either on or before the due date. No additional time shall be added where service of a document requiring action within a prescribed time thereafter was made by mail.

(d) Manner and proof of service. A copy of all documents filed with the Secretary shall be served upon all other parties involved in the proceeding. Service under this section shall be by personal delivery or by mail. Service by mail is deemed effected at the time of mailing to the last known address.

Section 801.72 Responsibility of the Office of Administrative Law Judges.

Upon receipt of the Secretary's Notice of Intent to Modify or Vacate the Decision and Order of an Administrative Law Judge, the Chief Administrative Law Judge shall, within fifteen (15) days, forward a copy of the complete hearing record to the Secretary.

Section 801.73 Final decision of the Secretary.

The Secretary's final Decision and Order shall be served upon all parties and the Chief Administrative Law Judge.

Record

Section 801.74 Retention of official record.

The official record of every completed administrative hearing provided by this part shall be maintained and filed under the custody and control of the Chief Administrative Law Judge.

Section 801.75 Certification of official record.

Upon receipt of timely notice of appeal to a United States District Court of a Decision and Order issued under this part, the Chief Administrative Law Judge shall promptly certify and file with the appropriate United States District Court, a full, true, and correct copy of the entire record, including the transcript of proceedings.

Appendix A to Part 801--Notice to Examinee

Section 8(b) of the Employee Polygraph Protection Act, and Department of Labor regulations (29 CFR 801.22, 801.23, 801.24, and 801.25) require that you be given the following information before taking a polygraph examination:

1. (a) The polygraph examination area (does)(does not) contain a two-way mirror, a camera, or other device through which you may be observed.

(b) Another device, such as those used in conversation or recording, (will)(will not) be used during the examination.

(c) Both you and the employer have the right, with the other's knowledge, to record electronically the entire examination.

2. (a) You have the right to terminate the test at any time.

(b) You have the right, and will be given the opportunity, to review all questions to be asked during the test.

(c) You may not be asked questions in a manner which degrades, or needlessly intrudes.

(d) You may not be asked any questions concerning: Religious beliefs or opinions; beliefs regarding racial matters; political beliefs or affiliations; matters relating to sexual preference or behavior; beliefs, affiliations, opinions, or lawful activities regarding union or labor organizations.

(e) The test may not be conducted if there is sufficient written evidence by a physician that you are suffering from a medical or psychological condition or undergoing treatment that might cause abnormal responses during the examination.

(f) You have the right to consult with legal counsel or other representative before each phase of the test, although the legal counsel or other representative may be excluded from the room where the test is administered during the actual testing phase.

3. (a) The test is not and cannot be required as a condition of employment.

(b) The employer may not discharge, dismiss, discipline, deny employment or promotion, or otherwise discriminate against you based on the analysis of a polygraph test, or based on your refusal to take such a test without additional evidence which would support such action.

(c)(1) In connection with an ongoing investigation, the additional evidence required for an employer to take adverse action against you, including termination, may be (A) evidence that you had access to the property that is the subject of the investigation, together with (B) the evidence supporting the employer's reasonable suspicion that you were involved in the incident or activity under investigation.

(2) Any statement made by you before or during the test may serve as additional supporting evidence for an adverse employment action, as described in 3(b) above, and any admission of criminal conduct by you may be transmitted to an appropriate government law enforcement agency.

4. (a) Information acquired from a polygraph test may be disclosed by the examiner or by the employer only:

(1) To you or any other person specifically designated in writing by you to receive such information;

(2) To the employer that requested the test;

(3) To a court, governmental agency, arbitrator, or mediator that obtains a court order;

(4) To a U.S. Department of Labor official when specifically designated in writing by you to receive such information.

(b) Information acquired from a polygraph test may be disclosed by the employer to an appropriate governmental agency without a court order where, and only insofar as, the information disclosed is an admission of criminal conduct.

5. If any of your rights or protections under the law are violated, you have the right to file a complaint with the Wage and Hour Division of the U.S. Department of Labor, or to take action in court against the employer. Employers who violate this law are liable to the affected examinee, who may recover such legal or equitable relief as may be appropriate, including, but not limited to, employment, reinstatement, and promotion, payment of lost wages and benefits, and reasonable costs, including attorney's fees. The Secretary of Labor may also bring action to restrain violations of the Act, or may assess civil money penalties against the employer.

6. Your rights under the Act may not be waived, either voluntarily or involuntarily, by contract or otherwise, except as part of a written settlement to a pending action or complaint under the Act, and agreed to and signed by the parties.

I acknowledge that I have received a copy of the above notice, and that it has been read to me.

_____

(Date)

_____

(Signature)

[FR Doc. 91-4790 Filed 3-1-91; 8:45 am]

Editorial Note: This reprint incorporates a correction document published in the Federal Register on April 10, 1991.

* * * * * *

PSYCHOLOGICAL VARIABLES AND THE DETECTION OF DECEPTION

An Indexed Bibliography

By

Norman Ansley and Brenda Knill

A1. Abrams, Stanley (1973). The polygraph in a psychiatric setting. American Journal of Psychiatry, 130, 94-97.

A2. Abrams, Stanley (1973). Problems in interpreting polygraph examinations of malingerers. Polygraph, 2, 234-238.

A3. Abrams, Stanley (1974). The validity of the polygraph with schizophrenics. Polygraph, 3, 328-337.

A4. Abrams, Stanley (n.d.). The polygraph and the malingerer. Unpublished manuscript, American Polygraph Association.

A5. Abrams, Stanley & Weinstein, Edwin (1974). The validity of the polygraph with retardates. Journal of Police Science and Administration, 2, 11-14.

A6. Arkin, Stanley S. & Bogatin, Marc (1985). Failure to recollect or willful perjury? New York Law Journal, 193, 1+.

B1. Barland, Gordon H. (1973). Implications of drug induced memory loss for interrogation and lie detection. Polygraph, 2, 287-294.

B2. Barland, Gordon H. (1974, Aug.). The effect of psychopathy on the detection of deception in criminal suspects. Paper presented at the meeting of the American Polygraph Association, Seattle, WA.

B3. Barland, Gordon H. & Raskin, David C. (1974, Oct. 25). Psychopathy and detection of deception in criminal suspects. Paper presented at the Society for Psychophysiological Research, Salt Lake City, UT.

B4. Barland, Gordon H. & Raskin, David C. (1976). Validity and reliability of polygraph examinations of criminal suspects. Report No. 76-1, Contract No. 75-NI-99-0001, National Institute of Law Enforcement and Criminal Justice, Law Enforcement Assistance Administration, U.S. Department of Justice by Department of Psychology, University of Utah.

B5. Beijk, J. (1980). Experimental and procedural influences on differential electrodermal activity. Psychophysiology, 17, 274-278.

B6. Block, Jack (1955). Personality correlates of the GSR responsivity in the lie detection situation. American Psychologist, 10, 387+.

B7. Block, Jack (1957). A study of affective responses in a lie detection

situation. Journal of Abnormal and Social Psychology, 21, 63-71.

B8. Bradley, M.T. & Ainsworth, D. (1984). Alcohol and the psychophysiological detection of deception. Psychophysiology, 21, 63-71.

B9. Bradley, M.T. & Janisse, M.P. (1976, Nov.). Michiavellianism and the pupillary response in the detection of deception. Unpublished manuscript, University of Manitoba, Canada.

B10. Bradley, M.T. & Janisse, M.P. (1981). Extraversion and the detection of deception. Personality and Individual Differences, 2, 99-103.

B11. Bradley, M.T. & Janisse, M.P. (1983). A reply to Gudjonsson's comments on the paper: Extraversion and the detection of deception. Personality and Individual Differences, 4, 363-364.

B12. Bradley, M.T. & Klohn, K.I. (1987). Michiavellianism, the control question test and the detection of deception. Perceptual and Motor Skills, 64 747-757.

B13. Burdick, J.A., Love, K.G., & Wisniewski, L. (1983). Predictors of liar/non-liar status: Birth order, age, reason for polygraph and previous arrest. Journal of Police Science and Administration, 1, 402-404.

B14. Burdick, J.A., Stewart, D.Y. & Adamson, J.D. (1974). Cardiac activity and verbal report of homosexual and heterosexuals. Journal of Psychosomatic Research, 18(5), 377-385.

B15. Byers, Owen W. (1964, Sep.). Abnormal psychology and the law enforcement polygraph. Paper presented at the annual meeting of the American Academy of Polygraph Examiners.

C1. Clark, J.P., John, P. & Tifft, L.L. (1966). Polygraph and interview validation of self-reported deviant behavior. American Sociological Review, 31, 516-523.

C2. Cofer, C.N., Chance, J. & Judson, A.J. (1949). A study of malingering on the Minnesota Multiphasic Personality Inventory. Journal of Psychology, 27, 491-499.

C3. Cofer, Charles N., Judson, A.J., & Weick, D.V. (1949). On the significance of the psychgalvanic response as an indicator of reaction to personality test items. Journal of Psychology, 27, 347-354.

C4. Cunnieh, Alan J. (1986). Alcoholic blackouts: Phenomenology and legal relevance. Behavioral Sciences and the Law, 4, 73-85.

D1. Darr, Ralph F., Jr. (1974). Personality and vasomotor behavior. Polygraph, 3, 81-89.

D2. Davis, Frederick & Malmo, Robert (1950). Electromyographic recording

during interview. American Journal of Psychiatry, 107, 908-916.

D3. Day, David A., & Rourke, Byron P. (1974). The role of attention in lie detection. Canadian Journal of Behavioral Science, 6(3), 270-276.

D4. Dearman, H.H. & Smith, B.M. (1963). Unconscious motivation and the polygraph test. American Journal of Psychiatry, 119, 1017-1020.

D5. Drs. J.F. Kubis and F.L. Rouke report on success with chronic liars, American Psychological Association (1948, Sep. 12). New York Times, p. 48:5.

E1. Elaad, Eitan & Ben-Shakhar, Gerson (1989). Effects of motivation and verbal response type on psychophysiological detection of information. Psychophysiology, 26(4), 442-451.

E2. Erasing stress signs with a tranquilizer (1981, Apr. 4). Science News, 119, 214.

F1. Fariss, John (1981, Summer). Insanity testing from the R&I perspective. Alabama Association of Polygraph Examiners Newsletter, p.2.

F2. Faust, David, Hart, Kathleen, Guilmette, Thomas J. & Arkes, Hal P. (1988). Neuropsychologists capacity to detect adolescent malingerers. Professional Psychology: Research and Practice, 19(5), 508-515.

F3. Feleky, Antoinette (1916). The influence of emotions on respiration. Journal of Experimental Psychology, 1, 218-241.

F4. Fere, C. (1888). A note on the modification of electrical resistance under the influence of sensory and emotional excitations. Compt. rend. de la Soc. de Biol., p. 217.

F5. Ford, Charles V., King, Bryan H. & Hollender, Marc H. (1988). Lies and liars: Psychiatric aspects of prevarication. American Journal of Psychiatry, 145, 554-562.

F6. Frank, Mark G. (1988). Human lie detection ability as a function of the liar's motivation. Doctoral dissertation, Cornell University.

F7. Frese, Frederick J., III (1978). General reactivity and stereotypy in detection of deception. Doctoral dissertation, Ohio University.

F8. Frese, Frederick J., III (1979). Biofeedback, lie detection, and psychophysiological assessment of dangerousness. Polygraph, 8, 301-305.

F9. Fukumoto, Junichi & Toritani, K. (1979, Sep.). State anxiety and polygraph test situations. Paper presented at the National Convention of Police Psychology at the National Institute of Police Science [text in Japanese].

F10. Fuller, Dana & Jackson, Thomas T. (1984). The relationship between altruism and dishonesty. Journal of Social Psychology, 125, 273-274.

G1. Geisen, M. & Rollinson, M.A. (1980). Guilty knowledge versus innocent associations: Effects on trait anxiety and stimulus context on skin conductance. Journal of Research in Personality, 14, 1-11.

G2. Glassford, Ed & Nyboer, Jan (1975). Emotional stress and oscillometric variations of the pulse curve. Polygraph, 4, 108-117.

G3. Goodwin, D.W., Crave, J.B. & Guze, S.B. (1969). Alcoholic blackouts: A review and clinical study of 100 alcoholics. American Journal of Psychiatry, 126, 191-198.

G4. Gorman, W.F. (1982). Defining malingering. Journal of Forensic Sciences, 27, 401-407.

G5. Greenblatt, Milton (1972). Two heartbeats in three-quarter time: Psychosomatic issues in the study of the psychophysiology of the psychotherapeutic interview. Psychiatric Annals, 2(7), 6-11.

G6. Grow, R., McVaugh, W. & Eno, T.D. (1980). Faking and the MMPI. Journal of Clinical Psychology, 36, 910-911.

G7. Gudjonsson, Gisli H. (1977). The efficacy of the galvanic skin response in experimental lie detection: Some personality variables. Unpublished thesis, University of Surrey, England.

G8. Gudjonsson, Gisli H. (1979). Personality traits in the detection of deception. Unpublished manuscript.

G9. Gudjonsson, Gisli H. (1979). The use of electrodermal response in a case of amnesia. Medicine, Science and the Law, 19(2), 138-140.

G10. Gudjonsson, Gisli H. (1982). Electrodermal responsivity to interrogation questions and its relation to self-reported emotional disturbance. Biological Psychology, 14, 213-218.

G11. Gudjonsson, Gisli H. (1982). Extraversion and the detection of deception: Comments on the paper by Bradley and Janisse. Personality and Individual Differences, 3, 215-216.

G12. Gudjonsson, Gisli H. (1982). Some psychological determinants of extrodermal responses to deception. Personality and Individual Differences, 3, 381-391.

G13. Gudjonsson, Gisli H. & Haward, Lionel R. (1982). Detection of deception: Consistency in responding and personality. Perceptual and Motor Skills, 54(3, part 2), 1189-1190.

G14. Gurvitz, Milton (1956). Fact versus fantasy. In N. Ansley & R.J. Weir, Jr. (Eds.), Selected papers on the polygraph, (pp. 32-38). Washington, DC: Board of Polygraph Examiners.

G15. Gustafson, Lawrence & Orne, Martin T. (1963, Oct. 12). On the psychophysiology of the subject who is not detected in the detection of deception experiments. Paper presented at the 3rd annual meeting of the Society for Psychophysiological Research, Detroit, MI.

H1. Hammond, David L. (1980). The responding of normals, alcoholics and psychopaths in a laboratory lie detection experiment. Unpublished dissertation, California School of Professional Psychology.

H2. Haney, Kenneth L. (n.d.). The psychopath and polygraph. Unpublished manuscript, American Polygraph Association.

H3. Hare, Robert D. (1970). Psychopathy: Theory and research (pp. 49-51). New York: Wiley & Sons.

H4. Harrelson, Leonard H. (1968, Apr. 11.). The polygraph examination of Peter Howard Denton. Unpublished manuscript, Keeler Polygraph Institute.

H5. Harrelson, Leonard H. & Scrogham, Nancy K. (1976). The defense mechanism of repression: A psychological and physiological approach. Polygraph, 5, 68-75.

H6. Hartshore, H. & May, M.A. (1928). Studies in deceit (2 vols.). New York: Macmillan.

H7. Heathaway, Starke R. (1950, Oct. 28). Use of the lie detector in psychiatric research. Paper presented at the annual convention of the International Society for the Detection of Deception, Minneapolis, MN.

H8. Heckel, R.V., Brokaw, J.R., Salzberg, H.C. & Wiggins, S.L. (1962). Polygraph variations in reactivity between delusional, non-delusional, and control groups in a 'crime' situation. Journal of Criminal Law, 53, 380-383.

H9. Higley, Bernard H. (1954). The detection of deception with deviation. The Bulletin of the Academy for Scientific Interrogation, 7(3), 3-10.

H10. Hoch, Paul, Kubis, J.F. & Rouke, F.L. (n.d.). Psychogalvanometric investigations in psychoses and other abnormal mental states. In Hoch, Kubis & Rouke (Eds.), Psychogalvanometric Investigations (pp. 237-243).

H11. Hojat, M. & Foroughi, D. (1979). Iranian subjects' responses as ideal persons on the Eysenck Personality Inventory. Psychological Reports, 45(2), 499-502.

H12. Honts, C.R., Raskin, D.C. & Kircher, J.C. (1985). Effects of socialization on the physiological detection of deception. Journal of Research in Personality, 19, 373-385.

H13. Honts, C.R., Raskin, D.C. & Kircher, J.C. (1986). Individual differences and the physiological detection of deception. Psychophysiology, 23 442. [abstract]

H14. Horneman, Christopher J. & O'Gorman, J.G. (1987). Individual differences in psychophysiological responsiveness in laboratory tests of deception. Personality and Individual Differences, 8, 321-330.

H15. Hunter, Fred L. (1974). Anger and the polygraph technique. Polygraph, 3(4), 381-394.

I1. Iennarella, Ralph S. & Kaplin, Martin F. (1988). Acceptance of personality descriptions by subjects: Individual and base-rate truthfulness. Journal of Social and Clinical Psychology, 6(3/4), 388-397.

I2. Ingersoll, Barbara (1977). Detection of deception in primary psychopaths. Dissertation, Pennsylvania State University. Microfilm International, #78-8375.

I3. Iwahara, S., Miseki, K., Shiokawa, N. & Yoshikawa, R. (1955). Uso ni tasuro GSR to seikaka tokysei tnon kankei no tsuits (GSR to forced lying and personality traits). Tohoku Journal of Experimental Psychology, 1, 82-85 [text in Japanese]. English abstract in Psychology Abstracts, 6, 269.

J1. Janisse, M.P. & Bradley, M.T. (1980). Deception, information and the pupillary response. Perceptual and Motor Skills, 50, 748-750.

J2. Jost, Hudson (1953). The use of the polygraph techniques in psychophysiological research in clinical psychology. Chicago, IL: Associated Research.

K1. Kelly, Robert J. & Sagarin, Edward (1988). Criminal justice and the cretan liar: Unmasking strategies of dissimulation and deception. Journal of Criminal Justice, 16, 61-72.

K2. Kimball, Alvin S. (1952). Lie detector in mental cases. ISDD Bulletin, 5(3), 2-3.

K3. King, Joseph E. (1952, May). Emotional responses in lie detection. Police Chief's News. Reprinted in Helpful Bulletins and Illustrations. Chicago, IL: C.H. Stoelting Company.

K4. Koga, Hide, Wakamatsu, Takeshi & Yoshizumi, Koichi (1973). Sense of insecurity during polygraph test. Paper presented at the Identification Science Conference, Police Science Laboratory. [text in Japanese]

K5. Konieczny, Herzy, Fraz, Miroslaw & Widacki, Jan (1984). Pochodzenie ukrytej informachi a niektore cechy osobowsci w badaniu polifraficznym (The specificity of so-called emotional traces and some features of personality in the polygraph examination). Journal of Forensic Medicine and Criminology, 24(1), 23-30. [text in Polish]

K6. Kopp, Maria S., Mihaly, Katalin, Linka, Emese & Bitter, Istran (1987). Electrodermally differentiated subgroups of anxiety patients: I.

Automatic and vigilance characteristics. International Journal of Psychophysiology, 5, 43-51.

K7. Kubis, Joseph F. (1957). Instrumental, chemical and psychological aids in the interrogation of witnesses. Journal of Social Issues, 13, 40-49. Reprinted in Polygraph, 2, 334-348.

K8. Kunzendorf, Robert G. & Bradbury, Jeffrey L. (1983). Better liars have better imaginations. Psychological Reports, 52, 634.

L1. Larson, John A. & Haney, George W. (1932). The polygraph and personality study. American Journal of Psychiatry, 11(6), 1035-1081.

L2. Lerner, Joseph (1969). The psychiatrist and the polygraph. Journal of the American Geriatrics Society, 17(10), 979-984.

L3. Longo, Ronald K. (1987, May). The use of the polygraph in sex offender treatment. Northwest Polygraph Examiners Association Newsletter, pp. 21-37.

L4. Lykken, David T. (1955). A study of anxiety in the sociopathic personality. Dissertation, University of Minnesota, University Microfilms #55-944.

L5. Lykken, David T. (1957). A study of anxiety in the sociopathic personality. Journal of Abnormal and Social Psychology, 5, 6-10.

L6. Lynch, Brian E. (1979). Detection of deception: Its applications to forensic psychiatry. Bulletin of the American Academy of Psychiatry and the Law, 7, 243-244.

L7. Lynch, Brian E. (1981). The polygraph: A psychiatric resource. Polygraph, 10(1), 13-19.

L8. Lynch, Brian E. & Bradford, J.M. (1979, Oct.). Amnesia: Its detection by psychophysiological measures. Paper presented at the meeting of the American Academy of Psychiatry and the Law, Baltimore, MD.

M1. Matte, James A. (1977, Oct.). A case of truth serum versus the polygraph: Dissociative neurosis - A distinct possibility. Empire State Polygraph Society Newsletter.

M2. Matte, James A. & Rodgers, Robert R. (1981). Formulation of relevant questions in polygraph examinations of subjects claiming amnesia. Unpublished manuscript.

M3. Matzke, Norman R. (1987). Polygraph and the treatment of sex offenders. Polygraph, 16(2), 126-128.

M4. Morgan, Raymond C. (1989, Apr.). The polygraph examiner in sex offender treatment programs. American Association of Police Polygraphists Newsletter, pp. 21-23.

M5. Morrison, James W. (1988, Oct.). A response topography analysis of penile circumference response changes in sexual preference assessment with two groups of heterosexual offenders. Paper presented at the meeting of the Society for Psychophysiological Research, San Francisco, CA.

M6. Muraoka, S. (1968). Relation between personality and physiological responses in the detection of deception. Polygraph Reports, pp. 1-4, Research Materials No. 49, National Institute of Police Science [text in Japanese].

M7. Muraoka, S. (1969). Relation between personality and physiological responses in the detection of deception (2). Polygraph Reports, pp. 34-38, Research Materials No. 53, National Institute of Police Science [text in Japanese].

Mc1. McInerney, Charles A. (1961, Sep.). Emotional lethargy. Paper presented at the 8th annual meeting of the American Academy of Polygraph Examiners, Washington, DC.

N1. Nieman, David A. (1982). Physiological response to rank order of problems as measured by the polygraph. Dissertation, United States International University (UNI 43/03B p. 856, DEC 82-199282, vol. 3, p. 735).

N2. North, Richard L. & James, Earl W. (1973, May). The Luscher color test and polygraph. Paper presented at the 3rd Annual National Workshop on Practical Polygraph Procedures, Delta College, MI.

O1. Orlebeke, J.F. (1973). Electrodermal, vasomotor, and heart rate changes as correlates of extraversion and neuroticism. Polygraph, 2(4), 309-325.

P1. Patrick, Christopher J. (1987). The validity of lie detection with criminal psychopaths. Unpublished dissertation, University of British Columbia.

P2. Patrick, Christopher J., & Iacono, William G. (1986, Oct.). The validity of lie detection with criminal psychopaths. Paper presented at the meeting of the Society for Psychophysiological Research, Montreal, Canada. Abstract in Psychophysiology, 23(4), 452-453.

P3. Patterson, Terry (1976). Skin conductance recovery and pupillometrics in chronic schizophrenics. Psychophysiology, 13, 189-195.

P4. Pennebaker, James W. & Chew, Carol H. (1985). Behavioral inhibition and electrodermal activity during deception. Journal of Personality and Social Psychology, 49, 1427-1433. Reprinted in Polygraph, 15, 255-263.

P5. Powell, Graham E., Gudjonsson, Gisli H. & Mallen, Paul (1983). Application of the guilty knowledge technique in a case of pseudologia fantastica. Personality and Individual Differences, 4(2), 141-146.

R1. Raskin, David C. & Hare, Robert D. (1978). Psychopathy and the detection of deception in a prison population. Psychophysiology, 15, 126-136.

R2. Reese, James T. (1979). Obsessive compulsive behavior: The nuisance offender. Polygraph, 8, 258-270.

R3. Ricksher, C. & Jung, C.G. (1908). Further investigation on the galvanic phenomenon and respiration in normal and insane individuals. Journal of Abnormal Psychology, 5, 189-219.

R4. Rogers, Richard (1984). Towards an empirical model of malingering and deception. Behavioral Sciences and the Law, 2(1), 93-112.

R5. Romig, Clarence H.A. (1965, Dec.). Applicability of the polygraph examination to the neurotic, psychotic, and psychopathic personalities. Unpublished manuscript, University of Maryland, Department of Psychology.

R6. Ruilmann, C.J. & Gulo, M.J. (1950). Investigation of autonomic responses in psychopathic personalities. Southern Medical Journal, 43(11), 953-956.

R7. Russell, Scott J. (1988). Electrodermal activity, cognitive script, and sex differences in a single blind study. Polygraph, 17(1), 45-55.

S1. Schacter, Daniel L. (1986). On the relation between genuine and simulated amnesia. Behavioral Sciences and the Law, 4, 47-64.

S2. Schrettin, David J. (1988). The use of psychological tests to identify malingered symptoms of mental disorder. Clinical Psychology Review, 8(5), 451-476.

S3. Sierles, Frederick S. (1984). Correlates of malingering. Behavioral Sciences and the Law, 2, 113-118.

S4. Speer, G.S. (1937). The measurement of emotions aroused in response to personality test items. Journal of Psychology, 3, 445-461.

S5. Steller, Max, Haenert, Petra & Eiselt, Wolfgang (1987). Extraversion and the detection of deception. Journal of Research in Personality, 21, 334-342.

S6. Stelmack, Robert M. & Mandelzys, Nathan (1975). Extraversion and pupillary response to affective and taboo words. Psychophysiology, 12(5), 536-540.

S7. Strawberry, Kenneth R. (1955, Mar. 14). The use of the Keeler polygraph as a check on response to personality test items. Unpublished thesis, American University.

S8. Suzuki, Akhiro (1977). A survey of factors affecting the polygraph examination in Japan. Polygraph, 6, 218-232.

S9. Suzuki, Akhiro (1980). Effects of anxiety and perceived task difficulty on the experimental detection of deception. Reports of the National Institute of Police Science, 33(4), 57-62 [text in Japanese, English abstract].

S10. Suzuki, Akhiro (1981). Relationships between anxiety, achievement motive and electrodermal activity in the experimental detection of deception. Reports of the National Institute of Police Science, 34(3), 35-44 [text in Japanese, English abstract].

S11. Suzuki, A., Yamashita, S. & Watanabe, T. (1970). Effects of motivational set as a determinant of detection of deception. Reports of the National Institute of Police Science, 23 140-145 [text in Japanese].

T1. Tereyama, S. & Wada, J. (1979). A case of a suspect who pretended amnesia during the polygraph test. Paper presented at the National Convention of Police Psychology at the National Institute of Police Science [text in Japanese].

U1. Ueno, A. (1979, Sep.). Survey of motivation among criminals who commit continuous arson and their pre-arson behavior. Paper presented at the National Convention of Police Psychology at the National Institute of Police Science [text in Japanese].

V1. VanDoornen, Lorenz J.P. (1985). Sex differences in physiological reactions to real life stress and their relationship to psychological variables. Paper presented at the annual meeting of the Society for Psychophysiological Research, Houston, TX. Abstract in Psychophysiology, 22(5), 617-618.

V2. Vivian, Susan E. & Gudjonsson, Gisli H. (1986). Denial and memory performance in two cases of homicide. Medicine, Science and the Law, 26, 72-76.

W1. Waid, William M. & Orne, Martin T. (1980). Individual differences in electrodermal lability and the detection of information and deception. Journal of Applied Psychology, 65, 1-8.

W2. Waid, William M. & Orne, Martin T. (1981). Cognitive and personality processes in the physiological detection of deception. In L. Berkowitz (Ed.), Advances in Experimental Social Psychology (vol. 14, pp. 61-66). New York: Academic Press.

W3. Waid, William M. & Orne, Martin T. (1982). The physiological detection of deception. American Scientist, 70, 402-409.

W4. Waid, William M., Orne, Martin T. & Wilson, Stuart K. (1976, Oct.). Sociopathy as a mediating variable in the psychophysiological diagnosis of deception. Paper presented at the 16th annual meeting of the Society for Psychophysiological Research, San Diego, CA. Abstract in Psychophysiology, 14, 104.

W5. Waid, William M., Orne, Martin T. & Wilson, Stuart K. (1979). Effects of level of socialization on electrodermal detection of deception. Psychophysiology, 16, 15-22. Reprinted in Polygraph, 8(2), 161-172.

W6. Waid, William M., Orne, Martin T. & Wilson, Stuart K. (1979). Socialization, awareness and the electrodermal response to detection and self-disclosure. Journal of Abnormal Psychology, 88(6), 663-666.

W7. Wardie, Miriam G. & Gloss, David S. (1982). Effects of lying and conformity on decision-making behaviors. Psychological Reports, 51(3, part 1), 871-877.

W8. Walter, Barbara (1970). How to talk to practically anybody about practically anything. New York, Doubleday & Co. Reprinted by Dell (1971).

W9. Wasyliw, Orest E., Grossman, Linda, Haywood, Thomas W. & Cavanaugh, James L., Jr. (1988). The detection of malingering in criminal forensic groups: MMPI validity scales. Journal of Personality Assessment, 52, 321-333.

W10. Wells, Lloyd A. (1986). Varieties of imposture. Perspectives in Biology and Medicine, 29(4), 588-610.

W11. Wiggins, Elizabeth C. & Brandt, Jason (1988). The detection of simulated amnesia. Law and Human Behavior, 12, 57-78.

A

B

* * * * * *

REMARKS OF THE PRESIDENT OF THE UNITED STATES DURING ANNOUNCEMENT OF THE CRIME PACKAGE

The White House, March 11, 1991

THE PRESIDENT: Thank you all very much for that warm welcome. Mr. Vice President and Mr. Attorney General; and then the State Attorneys General with whom I just met -- so many here today; distinguished members of the United States Congress; other law enforcement officials and community leaders. Really, it is an honor on this occasion to welcome you all back to the White House.

Last week before Congress I saluted a group of hometown heroes -- the finest combat force that this nation has ever assembled -- the brave men and women of the United States military. (Applause.) We honored them with our cheers, with our prayers and, come this summer, I'm looking forward to it, because then I think the whole country will honor them again with the biggest 4th of July since the Liberty Bell first rang.

But as I said last week, the real way to honor them is to welcome them back to an America that is worthy of their sacrifice, by joining together with Congress to move forward on the domestic front.

Last month we launched an innovative package designed to assure real opportunity for all Americans. And our veterans deserve to come home to an America of improved schools, better jobs, stronger laws against discrimination, increased homeownership and families that are healthy and together.

And most of all, our veterans deserve to come home to an America where it is safe to walk the streets. Well, we can't do that before they come home, but we can have that on our minds as something we are determined to do.

Economic opportunity is impossible for citizens who cannot be safe and feel safe in their homes, in their schools, in their jobs and, yes, their churches. And that's what I mean when I say a most basis civil right is quite simply the right to be free from fear.

Some of you may remember that shortly after I took office we met with the 50 AGs at the White House. It was two years ago almost to the day. And I told you how, a few days earlier, I had gone to New York to meet the family and friends of Everett Hatcher, a brave DEA agent who was gunned down in the street. And they told me that it used to be unthinkable to shoot a cop. But now the culture has changed. And when the bad guys hear the word "police," they just turn around and start shooting. I'll never forget that conversation.

The remarks by the President, the Honorable George Bush, were sent to the journal by Paul Lutheringer, Associate Director of Public Affairs, The White House, with the request that they be published.

Polygraph 1991, 20(2)

Two months later, on that rainy day on Capitol Hill, we launched an effort to pass our crime legislation -- legislation designed to help protect our cops by giving them the tools they need to get their job done. We proposed stiff new penalties for criminals using semiautomatic weapons. An improved exclusionary rule designed to protect the truth and punish the guilty. An habeas corpus reform that would stop frivolous appeals and ensure that punishment was not only just, but also swift and certain. And most of all, it would have finally given us a federal law to uphold a simple rule of justice: Those who kill must be prepared to pay with their own life.

And today, two years later, the Congress has still failed to act on these critical core provisions. And today, two years later, another 294 policemen and women are dead -- 294 -- almost three times the number of precious American lives lost during this entire Gulf war. The killings must stop. And it must stop now.

Today, it's time to stand up and be counted. It's time to stand up for what's right. We stood by our troops. And today it's time to stand up for America's prosecutors and police.

Last week, many of you joined together with the Attorney General and me in an unprecedented crime summit -- America's first. For three days, you freely traded ideas, insights, suggestions and support. And when I visited that group Tuesday, the mood was contagious. It was powerful and confident, and most of all driven by a sense of urgency. And so when it was over, we wasted no time, I told Dick Thornburgh that we wanted the crime bill ready in final form before another was out. and today, five days later, we have it here. Of course, we had a dead start. The truth is, the vast majority of these core proposals are identical to those that we sent up two years ago.

These fundamental, badly needed reforms have been argued over the years. But the American people are not clamoring for more debate. Today they're demanding action -- action to stop violent crime. Action that translates to a straight up or down vote on these core common sense proposals.

As I said Wednesday night, if our forces could win the ground war in 100 hours, surely the Congress can pass this legislation in 100 days.

Our core proposals have also been strengthened by some potent new additions. These include new laws to protect men and women and children against violence and abuse. And most important of all, they include tough new laws that will protect our people and our police by helping prosecutors put away America's most violent offenders.

One of the most important of these provisions recognizes that reducing firearms violence must mean exclusionary rule reform. I'm not a lawyer, but I put great stock in common sense. And it never did make sense that, because a policeman has made a mistake, a dangerous criminal can get off scot-free.

The Supreme Court has invited legislative experimentation with direct action to prevent illegal searches and seizures. And so today I am announcing that we are accepting that invitation.

Our plan would authorize the Attorney General to develop alternative administrative sanctions for any federal agent who improperly seizes a gun in violation of the Fourth Amendment. Once these protections were in place, firearms in serious drugs, violent and certain other cases would always be admissible in certain federal cases involving armed felons. It is simply intolerable that these armed criminals should go free when good solid evidence is available.

Our message is simple: The time to act is now. the time to schedule Congressional hearings is now. The Attorney General is read to testify now. And most of the other experts needed are probably right here in the East Room now.

So looking out here today, I see a group of principled, all-American heroes whose dedication at home matches that of our people overseas. Heroes like Attorney General Mike Moore of Mississippi who stood with us in the Rose Garden last fall and described the terrible ordeal, due to current habeas rules, in which victims and their families can never draw the curtains on tragic murders and rapes. Heroes like Louisiana's District Attorney Richard Ieyoub who called the efforts to gut last year's crime bill a major fraud on the American people. The one that, for all practical purposes, would have shut down the death penalty in the 37 states where it now exists. Heroes like Dan Lundgren, California's new AG whose miracle end run in Congress in '84 produced some of the most far-reaching criminal law reforms in our nation's history.

Mike and Richard, we are on a 100-day clock. And we hope you and your colleagues are ready to roll up your sleeves again today. And Dan, we're hoping you can lend your magic to the cause once more. Because this week marks the anniversary -- of the FBI's 10 Most Wanted List. And I'm here to tell you that this new crime bill is on America's Most Wanted list of pressing national business.

And as I said last fall, America's prosecutors will not accept a phony crime bill that is tougher on law enforcement than it is on criminals. No more loopholes; no more rolls of the dice. I urge the Congress to heed the voices of our people, our police, our prosecutors, and help us take back the streets. Together, let's act on this crime bill now.

Thank you all very, very much for coming. Good luck. May God bless our country. And now I'll put a signature to both of these documents. Thank you very much. (Applause.)

* * * * * *

COMBATTING VIOLENT CRIME

The White House, March 11, 1991

The President today transmitted to Congress comprehensive legislation to combat violent crime. The provisions, when enacted, will enhance the ability of Federal, State, and local law enforcement officials to ensure the safety of American communities, neighborhoods and citizens.

The Comprehensive Violent Crime Control Act of 1991 builds on many of the provisions from the President's violent crime control proposals of 1989 that, although passed by one or both Houses, were not enacted. It also contains new and complementary provisions dealing with terrorism, obstruction of justice, violence against women, victims' rights, and gangs and juvenile offenders.

Fundamental Principles

Four principles guided the development of the Comprehensive Violent Crime Control Act of 1991:

A primary purpose of government is to protect citizens and their property. Americans deserve to live in a society in which they are safe and feel secure.

Those who commit violent criminal offenses should, and must, be held accountable for their actions.

Our criminal justice system should seek the swift and certain apprehension, prosecution, and incarceration of those who break the law.

Success in accomplishing our criminal justice system goals requires a sustained, cooperative effort by a coalition of Federal, State, and local law enforcement officials.

The legislation transmitted to Congress today is consistent with and fosters these principles.

I. The Death Penalty and Equal Justice

For the most heinous Federal crimes, the Nation needs a workable and enforceable death penalty. Although various Federal laws provide the death penalty for crimes of homicide, treason, and espionage, most of these laws are unenforceable. They are ineffective because they fail to meet the constitutionally required standards and procedures enunciated by the Supreme Court.

The statement on violent crime was sent to the journal by Paul Luthringer, Associate Director of Public affairs, The White House, with the request that it be published.

Polygraph 1991, 20(2)

This legislation addresses those deficiencies for existing capital offenses and authorizes imposing the death penalty for several additional aggravated Federal crimes. The legislation also provides effective safeguards against racial discrimination and racial bias in the administration of capital punishment and other penalties.

A. Offenses for which the Death Penalty is Authorized After Consideration of Aggravating and Mitigating Factors.

Existing Federal crimes for which the death penalty may be imposed after enactment of proper procedures include: espionage, treason, and, where death results, the destruction of aircraft and aircraft facilities, mailing dangerous articles, wrecking trains, bank robbery, aircraft piracy, and violence against Members of Congress and cabinet officers.

In addition to these existing crimes, this legislation authorizes the death penalty for certain existing but currently non-capital Federal crimes: the murder of certain foreign officials, kidnapping where a death results, murder for hire, murder in aid of racketeering, murder during a hostage taking, terrorist murders of American nationals abroad, the attempted assassination of the President, and murder in furtherance of genocide.

Drug crime offenders potentially eligible for the death penalty include: Leaders of the largest drug trafficking enterprises who are currently subject to a mandatory term of life imprisonment; "Drug Kingpins" who attempt to obstruct investigations or prosecutions by attempting to kill persons in the criminal justice system; and Those offenders who, while acting with the requisite intent required for capital murder, engage in a Federal drug felony and a person dies in the course of the offense or from the use of drugs involved in the offense.

The legislation also authorizes the death penalty for a number of other crimes including murder by a Federal prison inmate serving a life sentence, murders in violation of Federal civil rights statutes, and certain obstruction of justice and new terrorism offenses where death results.

B. Factors That May be Considered in Determining Whether the Death Penalty is Justified.

In determining whether the death penalty should be imposed, the legislation requires considering aggravating factors some of which are specifically tailored to the crime in question. Other, in general, aggravating factors include: knowingly creating a grave risk of death to one or more persons in addition to the victim of the offense; committing the offense in an especially heinous, cruel or depravated manner involving torture or serious physical abuse to the victim; or committing the offense after substantial planning and premeditation.

The legislation also requires the consideration of several mitigating factors if the death penalty is sought.

C. Procedures to be Implemented in Imposing a Sentence of Death.

Polygraph 1991, 20(2)

The bill requires holding a special hearing to determine whether a sentence of death is justified. If the prosecution believes that a sentence of death is justified, the prosecutor must provide defendant's counsel with notice of the aggravating factors the prosecution proposes to prove at the hearing. After the hearing, the jury makes a binding recommendation as to whether the sentence of death is justified.

The bill also includes improved procedures for Federal death penalty litigation modeled on the recommendations of the Ad Hoc Committee of the Judicial Conference on Federal Habeas Corpus in Capital Cases. These procedures include the appointment of counsel meeting specified standards of competency.

D. Equal Justice

The Equal Justice provisions include: Requiring administration of the death penalty and other penalties without regard to the race of the defendant or victim and prohibiting racial quotas and other statistical tests for imposing the death penalty or other penalties; Guarding against racial prejudice or bias at trial by providing for the examination of potential jurors for racial bias, a change venue to avoid racial bias, and prohibiting appeals to racial bias in statements before the jury; and Requiring, in Federal cases, jury instructions and certifications guarding against consideration of race in capital sentencing decisions and making the capital sentencing option consistently available for racially motivated murders in violation of the Federal civil rights laws.

II. Habeas Corpus Reform

Each year over 10,000 habeas corpus petitions are filed in the Federal courts. Many of these petitions are repetitive, raises no new issue from previous habeas corpus petitions, and are only intended for delay.

The President proposed: Establishing a general one-year time limitation on Federal habeas corpus applications by State prisoners; Requiring deference in Federal habeas corpus proceedings to the results of full and fair State court adjudications; and Authorizing special habeas corpus procedures to respond to problems of delay and abuse while ensuring increased fairness to defendants through broadened appointment of counsel.

III. Exclusionary Rule Reform

The President again proposed a general "good faith" exception to the exclusionary rule. This exception would permit the admission of evidence if the officers carrying out a search or seizure acted with an objectively reasonable belief that their conduct met Fourth Amendment requirements. The legislation would also clarify that, absent statutory authority, Federal courts may only exclude evidence on the basis of constitutional violations.

In addition, this legislation creates a limited exception to the exclusionary rule that would bar the suppression of firearms seized by Federal officers where the firearms are to be used in a Federal prosecution for a crime of violence or serious drug offense, or a Federal prosecution of

an offender who is disqualified from firearms possession because of a prior felony conviction or on other grounds. This exception is contingent on the establishment of alternative safeguards and sanctions to ensure compliance with the Fourth Amendment prohibition against unreasonable searches and seizures by Federal law enforcement officials. Standards and procedures would also be required for settling claims for damages for Fourth Amendment violations under the Federal Tort Claims Act.

IV. Enhanced Penalties for Firearms Violations

Violent offenders must be held fully accountable for their actions. The amendments to Federal law the President proposed addressing the criminal use of firearms include: Doubling the mandatory penalty from five to ten years for using a semi-automatic firearm while committing a violent crime or drug felony; Providing a mandatory five-year prison term for possession of forearms by felons who are disqualified from firearms possession and who have a previous conviction for a violent felony or serious drug offense; Allowing pre-trial preventive detention of defendants in cases involving certain serious Federal firearms and explosive offenses; Authorizing criminal penalties and mandatory minimum sentences for theft of a firearm; and Doubling the current penalty for a knowing and materially false statement in connection with acquiring a firearm from a license dealer.

The legislation also generally prohibits the importation, manufacture, transfer, or sale of gun magazines that allow firing over 15 rounds without reloading.

V. Gangs and Juvenile Offenders

To address the increasing problem of violent activities by juveniles and gangs, the President proposed: Broadening the authorization for reporting, retaining, and disclosing juvenile records for criminal justice purposes; Increasing options for prosecuting serious juvenile offenders and gang leaders as adults; Broadening the scope of the Armed Career Criminal Act to include as predicate offenses acts of juvenile delinquency that, if committed by an adult, would meet the Act's definition of a "serious drug offense"; Increasing the penalty for Travel Act crimes involving violence; and Increasing the penalty for conspiracy to commit murder for hire.

VI. Terrorism

To combat terrorism more effectively, the President's violent crime legislation includes: An enforceable Federal death penalty for the crimes most likely to be committed by terrorists in cases where death results, such as fatal bombings, hijackings, hostage takings, and assassinations; Aviation terrorism provisions implementing an international treaty prohibiting and punishing acts of violence at international airports such as the 1985 attacks on the Rome and Vienna airports; Maritime terrorism provisions implementing an international treaty prohibiting and punishing hijackings, dangerous acts of violence, and threats in relation to ships and maritime platforms which was prompted by the Achille Lauro hijacking; Effective procedures, including provisions to deal with classified information, for removing aliens involved in terrorist activities from the United States; New

offenses and increased penalties targeted on terrorism, including implementation of the international convention against torture, a new offense prohibiting and punishing the use of weapons of mass destruction against American citizens or United States property anywhere in the world, a new offense prohibiting and punishing killings and attempted killings in firearms attacks on Federal facilities, a new offense for providing material support to terrorists, adding terrorist offenses to the RICO statute, authorizing forfeiture of the instrumentalities and proceeds of terrorist activities, increasing penalties for offenses involving falsification of international travel and identification documents, and directing the United States Sentencing Commission to increase penalties for offenses that involve or promote international terrorism; and Provisions to strengthen antiterrorism enforcement activities, including authorizing admission to the United States of a limited number of aliens who assist in antiterrorism investigations, broadening access to telephone and credit records in counterintelligence investigations, strengthening the provisions for court-ordered electronic surveillance and other interceptions of communications to facilitate their use in investigations of terrorist activities, and increasing the time available for investigation of terrorist acts committed outside the United States by extending the statutes of limitations.

VII. Sexual Violence and Child Abuse

To address sexual violence and child abuse the President's proposal: Broadens the admissibility of evidence of the defendant's commission of similar crimes in sexual assault and child molestation cases; Provides enhanced penalties for the distribution of controlled substances to pregnant women; Broadens the definition of "sexual act" for Federal sexual abuse offenses committed against victims below the age of 16; Enhances penalties for recidivist sex offenders; Requires HIV testing in Federal cases involving a risk of HIV transmission; Provides enhanced penalties for Federal sex offenders who risk HIV infection of their victims; and Provides that victims of violent crimes and sex crimes may address the court concerning the defendant's sentence.

VIII. Drug Testing in the Criminal Justice System

To decrease drug use and increase the accountability of the Federal and state criminal justice systems the President proposed: Requiring drug testing of Federal offenders on post-conviction release. Federal offenders would be required to refrain from drug use as a mandatory condition of post-conviction release; and Requiring a drug testing program for State criminal justice systems as a condition for receipt of Federal drug grants.

* * * * * *

THE DEFENSE PERSONNEL SECURITY RESEARCH AND EDUCATION CENTER PERSONNEL SECURITY THESIS, DISSERTATION AND INSTITUTIONAL RESEARCH AWARDS FOR FISCAL YEARS 1991 AND 1992

The Defense Personnel Security Research and Education Center announces a new program to help fund (through the Office of Naval Research) research addressing issues pertinent to the National Industrial Security Program (NISP) and personnel security. The areas covered by this funding program include polygraph, financial and credit candidate screening and crime detection procedures, prescreening, background investigation, adjudication, continuing assessment, employee assistance program, security awareness, security education, and NISP research.

Eligibility

Participation is sought from graduate students and from scientists, faculty, and practitioners at U.S. financial, research, business, governmental, and educational institutions. To be eligible for the thesis or dissertation award, applicants must be students enrolled in a graduate program at a university accredited by the Association of Colleges and Secondary Schools for their region and be sponsored by both their university and the chair of their thesis or dissertation committee. Candidates for a thesis award must have also satisfactorily completed at least 2/3 of the non-thesis credit hours required for graduation in their program. To receive a dissertation award candidates must be eligible to enter doctoral candidacy within six months from the date of their application. Prior to the dissertation award being granted, recipients must have completed all degree requirements except for the defense of the dissertation.

To be eligible for the institutional research award the applicants must be employees at a U.S. financial, research, business, or educational institution; hold an advanced academic degree; and be sponsored by their institution.

Support

The maximum award for masters degree thesis awards is $3,000/student. The maximum award for dissertation grants is $10,000/student. The maximum award for institutional awards is $20,000/project. Institutions are eligible to receive multiple awards.

For additional information send a letter requesting a copy of the program description pamphlet and a self-addressed label to:

Roger Denk, Director
Defense Personnel Security Research and Education Center
99 Pacific Street, Bldg 455-E
Monterey, CA 93940-2481

Polygraph 1991, 20(2)

Polygraph (Detection of Deception) Research:

Polygraph personnel security research encompasses specific incident, periodic, preaccess, or exit detection of deception testing. Studies addressing preaccess/preemployment polygraph issues or paradigms are especially encouraged. The studies may be conducted in laboratory settings, field settings, or both. Some examples of the types of projects that would be of interest are noted below.

1) The development and validation of new polygraph procedures, instrumentation, physiological indices, or methods of response scoring.

2) Comparative research that examines polygraph accuracy across different types of procedures, instrumentation, physiological indices, methods of scoring, or subject populations.

3) The development and validation of computer assisted methods for analyzing polygraph responses.

4) Examination of the relative effectiveness of different polygraph countermeasures, as well as the interventions that render those countermeasures ineffective.

5) Assessment of the relative utility of polygraph testing in comparison to other personnel security preaccess and continuing assessment procedures.

6) Basic research on physiological changes that occur during deception or concealed information paradigms.

7) A meta analysis of the polygraph research literature indicating the areas that seem solid enough to warrant conclusions and which areas require additional research.

8) A literature review indicating what the physiological basis is for the cardio channel, together with an experimental comparison of the cardio cuff, plethysmograph, cardio activity monitor, thigh cuff and systolic time interval.

* * * * * *

THE READING CORNER

by

Janet Kay Pumphrey

Are you keeping up-to-date on articles published on the detection of deception and its corollary studies? Many items are not printed in journals which are selected for indexing purposes; others are printed in local, regional, and small journals which do not have a large readership. This issue of "The Reading Corner" offers a selection of articles found in the Social Sciences Index (17)(4)(March 1991) published by the H.W. Wilson Company. It must be noted that this index is "... provides cover-to-cover indexing of 352 key international English-language periodicals."

Admissibility of Evidence

Blindfolding the jury. S.S. Diamond and others. Law and Contemporary Problems 52:247-67, August 1989.

Social science findings and the jury's ability to disregard evidence under the Federal rules of evidence. L. Eichhorn. Law and Contemporary Problems 52:341-53, August 1989.

Crime and Criminals

Causes of crime: Uncovering a lay model. A. Campbell and S. Muncer, bibl. Criminal Justice and Behavior 17:410-19, December 1990.

Crime stoppers: Businesses that move to a high-growth area could be heading for crime zone. J. Schwartz and T. Exter. il. American Demographics 12:24-7+, November 1990.

Effects of eyewitness evidence on plea-bargain decisions by prosecutors and defense attorneys. H.A. McAllister. bibl. Journal of Applied Social Psychology 20:1461-73, October 1990, pt. 2.

Employees

Interviewer predictions of applicant qualifications and interview validity: aggregate and individual analyses. A.J. Kinicki and others. bibl. Journal of Applied Psychology 75:477-86, October 1990.

Issues surrounding the theories of negligent hiring and failure to fire. M.M. Exteit and W.N. Bockanic. Business and Professional Ethics Journal 8:21-34, Winter 1989.

Police agency officer selection practices. P. Ash and others. bibl. Journal of Police Science Administration 17:258-69, December 1990.

Abstract

Psychological test validity for selecting law enforcement officers. J.I. McQuilikin and others. bibl. Journal of Police Science Administration 17:289-94, December 1990.

Lie Detectors and Detection

Detection of guilty knowledge in real-life criminal investigations. E. Elaad. bibl. Journal of Applied Psychology 75:521-9, October 1990.

Lie detection across cultures. C.F. Bond, Jr. and others. bibl. Journal of Nonverbal Behavior 14:189-204, Fall 1990.

* * * * * *

ABSTRACT

Field Validity 1962

Orlansky, Jesse (1962, Jul 31). An assessment of lie detection capability. Report UBG 62-641, Institute for Defense Analyses. [abstract]

Procedure

The United States Army Military Police prepared a report for the assessment in which they reported on the follow-up of 3,153 cases in which the examiner reported "no deception indicated."

Results

There were 3,080 (97.7%) "instances in which results of examination in this category were in accord with results of other investigative techniques."

There were 73 (2.3%) "instances in this category in which contrary results were obtained through investigation or interrogation."

The extent to which there may be other errors in unknown.

* * * * * *

Abstract

Psychological test validity for selecting law enforcement officers. J.I. McQuilikin and others. bibl. Journal of Police Science Administration 17:289-94, December 1990.

Lie Detectors and Detection

Detection of guilty knowledge in real-life criminal investigations. E. Elaad. bibl. Journal of Applied Psychology 75:521-9, October 1990.

Lie detection across cultures. C.F. Bond, Jr. and others. bibl. Journal of Nonverbal Behavior 14:189-204, Fall 1990.

* * * * * *

ABSTRACT

Field Validity 1962

Orlansky, Jesse (1962, Jul 31). An assessment of lie detection capability. Report UBG 62-641, Institute for Defense Analyses. [abstract]

Procedure

The United States Army Military Police prepared a report for the assessment in which they reported on the follow-up of 3,153 cases in which the examiner reported "no deception indicated."

Results

There were 3,080 (97.7%) "instances in which results of examination in this category were in accord with results of other investigative techniques."

There were 73 (2.3%) "instances in this category in which contrary results were obtained through investigation or interrogation."

The extent to which there may be other errors in unknown.

* * * * * *