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THE LIE DETECTOR AS AN AID IN ARSON AND CRIMINAL INVESTIGATION

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Few instruments available to modern investigative procedure are so widely discussed and so little understood as the so called "lie detector." This is perhaps not altogether the fault of the public or of the officers who may have formed opinions on limited information. It may also be to some extent a result of the fact that we, as lie detector operators, have failed to make full information available as to the correct application of the lie detector test. As a consequence, the subject of lie detection is one that, insofar as the public is concerned, may cause the raising of eyebrows.

Today we are not so much concerned with public attitude except as it may be focused on you as an investigator when you suggest its use in cases coming to your attention. Better results may be obtained when you are better informed and when you have a better understanding of its possibilities and limitations.

The lie detector is not the complete answer to the problem of law enforcement. It has its place in investigative procedure and serves a very useful purpose. As you well know, there is no such instrument as a lie detector. The instrument usually called by that name is one which makes continuous and permanent recordings of changes accompanying certain bodily functions. During the test stimuli, usually in the form of questions, are presented to the subject, and the operator interprets the subject's responses to the stimuli and expresses an opinion based on his interpretation of these reactions. Since the principal use of deception testing equipment is for the purpose of determining the truthfulness of an individual, the name lie detector has come in to common usage and we too will employ it.

Let us think for a moment about the purpose of the lie detector test. Of course, the answer is readily at hand. It must be "to determine if the subject is telling the full truth about his knowledge, or lack of knowledge, of a particular incident or situation."

Frequently the question is raised as to the advisability of the lie detector since generally the results are not used in court. To us this is

such a foolish attitude as to really not deserve an answer; however, it does serve to point out the greatest usefulness of the lie detector test, which is to assist the investigator in determining a course of action. Not infrequently circumstances encountered in the beginning of the investigation may involve several subjects who may possibly be implicated. One of the problems presenting itself to the investigating officer then is to correctly evaluate the circumstances and the available evidence in order that he may concentrate his investigation along the lines which are likely to produce the most results. The lie detector is extremely useful in assisting the investigator in deciding the right course of action and to help him to determine which path to follow in order that the energy expended and the time consumed may be most profitable.

The procedure followed may be that of screening individuals who appear to have guilty knowledge concerning a particular offense, and then as more specific information is available, to follow through with a testing procedure to determine specific guilt on the part of the individual or individuals.

In addition to determining the guilt or guilty knowledge of the subject, the lie detector may also be useful in identifying and locating evidence which might not otherwise be found. The success of the testing depends very largely upon the availability of specific information developed in the investigation.

One of the best illustrations of the use of the lie detector for this type of work, in our experience, was in connection with a murder in West Texas. The proper application may be made in any investigation which may be undertaken. In this particular case a man was under investigation in connection with the death of his wife whose body had been found in the home which she was occupying alone since she and her husband had separated. The post-mortem examination revealed that death was the result of several blows with a blunt instrument. The identity of the instrument was not known. A series of questions was used, which called for specific responses on the part of the husband. The result indicated that he was responsible for the death of his wife. Questions were then asked in an effort to identify the weapon. Various kinds of weapons were included in questions, and the reactions indicated that the man had used a piece of pipe. Once it had been determined that the pipe was not taken away from the scene by the subject when he left, questions were asked concerning the direction from the house in which the pipe was disposed. Reactions indicated it was southwest of the house. Then several questions were asked as to the dis-

tance from the house. The piece of pipe was located within a hundred yards of the house in a southwesterly direction.

When the operator has reached the conclusion that the subject has guilty knowledge, the psychological advantage which had already been established through the testing procedure may be followed by an interrogation, and frequently the subject will admit his participation in the crime. It has been the experience of the laboratory of the Texas Department of Public Safety that 65% of the subjects who have been diagnosed as guilty make written statements concerning their guilt before leaving the interrogation room. The lie detector is a definite aid to interrogation as well as instrument for determining guilt.

Methods for the detection of deception are based upon the fact that various autonomic and voluntary bodily changes accompany deception, particularly when the subject is aware of the examination procedure and the purpose of the test. The mental processes need not be fully understood to notice the apparent effect in the bodily changes accompanying the emotional disturbances. When the subject is aware of the purpose of the test, the fear of the consequences of exposure may enhance the emotional responses which accompany the stimuli. Often a conscious effort will be made to prevent exposure.

We are primarily concerned in changes in pulse pressure, pulse rate and amplitude; changes in respiration and in the electrodermal response; and in some instances voluntary and involuntary muscular movements. All of these can be conveniently recorded.

Before applying our discussion of the lie detection technique more specifically to the problem of the investigation of arson, it might be wise for us to discuss briefly the accuracy of the testing procedure.

It is difficult to obtain information that will permit us to properly validate the results of lie detection testing. In the laboratory of the Texas Department of Public Safety, we have sought to make follow-up checks of the accuracy of the opinions given; utilizing as the basis for confirmation of results the admission of the individual himself, the admission or confession of others (thereby exonerating individuals who may have been diagnosed as having no guilty knowledge), and other reliable proof which has led to the conviction in court of the subject examined. We have found that opinions given have been correct in 99.26% of the cases. Of all of the subjects examined 40.50% have been diagnosed as guilty or having guilty knowledge; 45.3% have been diagnosed as innocent and 14.2% have been reported as indefinite or unable to determine. The 99.26% is the evaluation of the definite

opinions given. We frankly admit that in 14% of the cases handled we have been unable to give a definite opinion.

It is interesting to note that in the period covered by this report, where it is shown that indefinite opinions are given in 14% of all of the cases handled, that of the arson cases handled, indefinite reports were given in only 8% of the cases.

The percentage of arson cases handled by the Texas Department of Public Safety, of course, will not reflect an accurate picture throughout the country, but merely as a matter of interest, we would like to point out that during the fiscal year ending August 31, 1951, a total of 395 lie detection cases were completed. Of these, 44 were in connection with arson investigation, representing 11% of the total. Arson cases handled were fourth in frequency. The five most frequent crimes investigated being burglary, 103; theft, 93; murder, 58; arson, 44; and armed robbery, 16. Of the 44 cases examined, 16 subjects were diagnosed as not guilty, 25 were diagnosed as guilty and of these, 20 made statements. Only 3 indefinite charts were run.

We have already pointed out, and have tried to emphasize in our discussion of the reactions demonstrated by subjects examined in connection with investigation of certain arson cases. The success of the lie detector test depends to a very large degree upon a complete understanding of the subject and the examiner. It is to be noted that the more specific the information, the more specific the results; conversly, the more general the information, the more general the results. The lie detector is not a magic instrument. It is not possible to get something for nothing. The more complete the investigation, and the more exact or accurate the information, the better the results will be.

We cannot emphasize too strongly the usefulness of the so-called "hidden detail" or circumstances developed in the course of the investigation, information on which can only be available to the subject being examined from his participation in the crime or guilty knowledge of it.

A few years ago a man was being examined in connection with the death of his former wife's husband. This man had driven a considerable distance from East Texas to a West Texas town, had entered the residence occupied by his former wife and her current husband and had killed the husband by firing a .22 pistol while held against the temple of his intended victim. The defendant owned a .38 caliber revolver which was in his possession at the time that he was arrested in connection with this investigation. He did not have a .22. The officers in conducting the investigation were of the opinion that death had been inflicted with a .38 revolver. At autopsy, fragments of the

bullet were removed and were submitted to the firearms laboratory for examination. Upon examination it was determined that these fragments were from a .22 and could not possibly have come from a .38. At the time of examination of the subject, no one knew that the deceased had been killed with a .22 except the lie detector operator, the firearms examiner, and the subject responsible for the man's death. Questions were then asked as to whether or not the subject had killed the deceased with a .45, .44, .38, .22, .25, and other caliber weapons. As reactions were obtained only on the .22, we could be sure that the subject had guilty knowledge. Confronted with this, a statement soon followed.

The handling of the subject prior to a lie detector examination is a matter which deserves some consideration. Best results are obtained when the subject is in good physical and mental condition. Not infrequently, we have observed that during the examination of an individual the reactions to the pertinent questions may grow dim as the subject becomes exhausted. When he is permitted to rest and to restore some of his vitality and is then re-examined, reactions of great intensity may again be observed.

We emphasize again that the lie detector is not the complete answer to law enforcement, therefore it is not the complete answer to arson investigation. However, where a diligent search has been made for information and accurate information is available and when the examination is conducted by a competent and trained man, good and useful results may be obtained. The lie detector is an instrument of modern police science which should not be overlooked by the arson investigator.