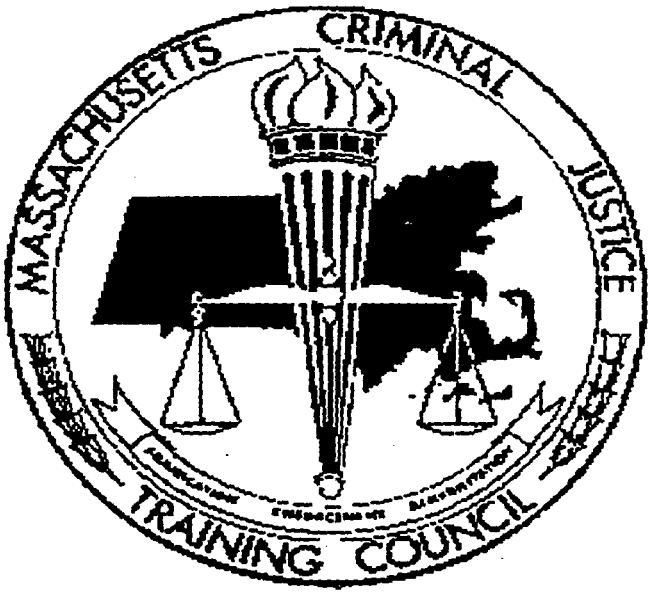
DWI DETECTION & STANDARDIZED

FIELD SOBRIETY TESTING

STUDENT MANUAL



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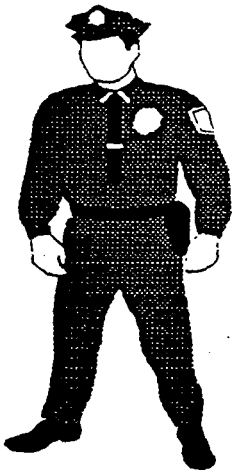
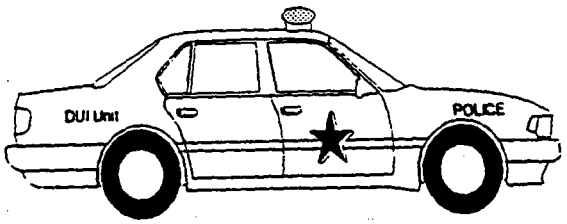
DWI DETECTION AND STANDARDIZED FIELD SOBRIETY TESTING





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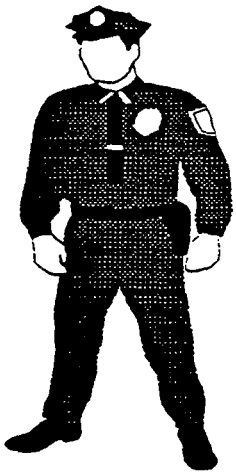
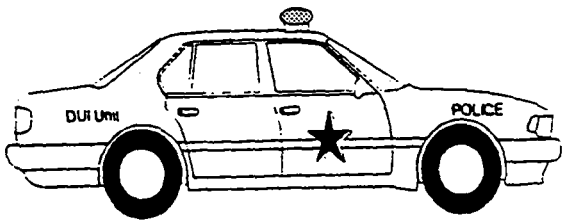




STUDENT MANUAL

PREFACE

The procedures outlined in this manual describe how the standardized field sobriety tests (SFSTs) are to be administered under ideal conditions. We recognize that the SFSTs will not always be administered under ideal conditions in the field, because such conditions will not always exist. Even when administered under less than ideal conditions, they will generally serve as valid and useful indicators of impairment. Slight variations from the ideal, i.e., the inability to find a perfectly smooth surface at roadside, may have some affect on the evidentiary weight given to the results. However, this does not necessarily make the SFSTs invalid.

DWI DETECTION
AND
STANDARDIZED FIELD SOBRIETY TESTING

SESSION I

INTRODUCTION AND OVERVIEW

SESSION I

INTRODUCTION AND OVERVIEW

Upon successfully completing this session, the students will be able to:

- o State the goals and objectives of the course.
- o Describe the course schedule and activities.
- o Demonstrate their pre-training knowledge of course topics.

CONTENT SEGMENTS	LEARNING ACTIVITIES
A. Welcoming Remarks and Objectives	o Instructor-Led Presentations
B. Administrative Details	
C. Pre-Test	o Written Examination

DWI DETECTION AND STANDARDIZED FIELD SOBRIETY TESTING

TRAINING GOALS AND OBJECTIVES

1. Ultimate Goal

   To increase deterrence of DWI violations, and thereby reduce the number of accidents, deaths and injuries caused by impaired drivers.

2. Enforcement-Related Goals

   a. Understand enforcement's role in general DWI deterrence.

   b. Understand detection phases, clues and techniques.

   c. Understand requirements for organizing and presenting testimonial and documentary evidence in DWI cases.

3. Job Performance Objectives

   As a result of this training, students will become significantly better able to:

   a. Recognize and interpret evidence of DWI violations.

   b. Administer and interpret standardized field sobriety tests.

   c. Describe DWI evidence clearly and convincingly in written reports and verbal testimony.

4. Enabling Objectives

   In pursuit of the job performance objectives, students will come to:

   a. Understand the tasks and decisions of DWI detection.

   b. Recognize the magnitude and scope of DWI-related accidents, deaths, injuries, property loss and other social aspects of the DWI problem.

   c. Understand the deterrence effects of DWI enforcement.

d. Understand the DWI enforcement legal environment.

e. Know and recognize typical vehicle maneuvers and human indicators symptomatic of DWI that are associated with initial observation of vehicles in operation.

f. Know and recognize typical reinforcing maneuvers and indicators that come to light during the stopping sequence.

g. Know and recognize typical sensory and other clues of alcohol and/or drug influence that may be seen during face-to-face contact with DWI suspects.

h. Know and recognize typical behavioral clues of alcohol and/or drug influence that may be seen during the suspect's exit from the vehicle.

i. Understand the role and relevance of psychophysical testing in pre-arrest screening of DWI suspects.

j. Understand the role and relevance of preliminary breath testing in pre-arrest screening of DWI suspects.

k. Know and carry out appropriate administrative procedures for validated divided attention psychophysical tests.

l. Know and carry out appropriate administrative procedures for the horizontal gaze nystagmus test.

m. Know and recognize typical clues of alcohol and/or drug influence that may be seen during administration of the standardized field sobriety tests.

n. Understand the factors that may affect the accuracy of preliminary breath testing devices.

o. Understand the elements of DWI prosecution and their relevance to DWI arrest reporting.

p. Choose appropriate descriptive terms to convey relevant observations of DWI evidence.

q. Write clear, descriptive narrative DWI arrest reports.

5. Additional Training Goals and Objectives

   a. If the four-hour (Introduction to Drugs That Impair) or eight-hour (Drugs That Impair Driving) modules are presented as part of the SFST straining program, the goals and objectives for those modules are listed in the appropriate manuals.

ATTACHMENT

Glossary

ATTACHMENT

GLOSSARY OF TERMS

ALVEOLAR BREATH - Breath from the deepest part of the lung.

BLOOD ALCOHOL CONCENTRATION (BAC) - The percentage of alcohol in a person's blood.

DIVIDED ATTENTION TEST - A test which requires the subject to concentrate on both mental and physical tasks at the same time.

DWI - Driving While Intoxicated. (Also Driving While Impaired.) Driving a vehicle while under the influence of alcohol or other drugs.

DWI DETECTION PROCESS - The entire process of identifying and gathering evidence to determine whether or not a suspect should be arrested for a DWI violation. The DWI detection process has three phases:

Phase One - Vehicle In Motion
Phase Two - Personal Contact
Phase Three - Pre-arrest Screening

EVIDENCE - Any means by which some alleged fact that has been submitted to investigation may either be established or disproved. Evidence of a DWI violation may be of various types:

a. Physical (or real) evidence: something tangible, visible, or audible.
b. Well established facts (judicial notice).
c. Demonstrative evidence: demonstrations performed in the courtroom.
d. Written matter or documentation.
e. Testimony.

FIELD SOBRIETY TEST - Any one of several roadside tests that can be used to determine whether a suspect is impaired.

HORIZONTAL GAZE NYSTAGMUS (HGN) - A field sobriety test based on the jerking of the eyes as they gaze toward the side.

ILLEGAL PER SE - Unlawful in and of itself. Used to describe a law which makes it illegal to drive while having a statutorily prohibited Blood Alcohol Concentration.

NYSTAGMUS - An involuntary jerking of the eyes.

ONE-LEG STAND (OLS) - A divided attention field sobriety test.

PERSONAL CONTACT - The second phase in the DWI detection process. In this phase the officer observes and interviews the driver face to face; determines whether to ask the driver to step from the vehicle; and observes the driver's exit and walk from the vehicle.

PRE-ARREST SCREENING - The third phase in the DWI detection process. In this phase the officer administers field sobriety tests to determine whether there is probable cause to arrest the driver for DWI, and administers or arranges for a preliminary breath test.

PRELIMINARY BREATH TEST (PBT) - A pre-arrest breath test administered during investigation of a possible DWI violator to obtain an indication of the person's blood alcohol concentration.

PSYCHOPHYSICAL - "Mind body." Used to describe field sobriety tests that measure a person's ability to perform both mental and physical tasks.

STANDARDIZED FIELD SOBRIETY TEST BATTERY - A battery of three tests, Horizontal Gaze Nystagmus, Walk-and-Turn, and One-Leg Stand, administered and evaluated in a standardized manner to obtain validated indicators of impairment based on NHTSA research.

TIDAL BREATH - Breath from the upper part of the lungs and mouth.

VEHICLE IN MOTION - The first phase in the DWI detection process. In this phase the officer observes the vehicle in operation, determines whether to stop the vehicle, and observes the stopping sequence.

WALK-AND-TURN (WAT) - A divided attention field sobriety test.

SESSION II

DETECTION AND GENERAL DETERRENCE

SESSION II

DETECTION AND GENERAL DETERRENCE

Upon successfully completing this session, the student will be able to:

- o Describe the frequency of DWI violations and crashes.
- o Define General Deterrence.
- o Describe the Relationship between Detection and General Deterrence.
- o Describe a brief overview of alcohol;
- o Identify common types of alcohols;
- o Describe the physiologic processes of absorption, distribution and elimination of alcohol in the human body;

CONTENT SEGMENTS	LEARNING ACTIVITIES
A. The DWI Problem	o Instructor-Led Presentations
B. The Concept of General Deterrence	o Reading Assignments
C. Relating Detection to Deterrence Potential	
D. Evidence of Effective Detection and Effective Deterrence	
E. Physiology of Alcohol	

DWI DETERRENCE: AN OVERVIEW

Each year, tens of thousands of people die in traffic accidents. Throughout the nation, alcohol is the major contributor to traffic fatalities. Approximately 43% of the drivers who die in crashes have been drinking.

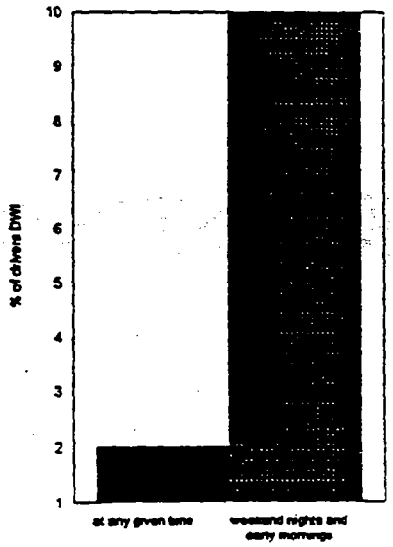
Alcohol related crashes are about nine times more likely to result in death than are similar crashes that do not involve alcohol. Drinking drivers are more likely than other drivers to take excessive risks such as speeding or turning abruptly. Drinking drivers also are more likely than other drivers to have slowed reaction times. They may not be able to react quickly enough to slow down before crashing and are less likely to wear seatbelts. On the average, two percent of drivers on the road at any given time are DWI. DWI violations and accidents are not simply the work of a relatively few "problem drinkers" or "problem drug users." Many people commit DWI, at least occasionally.

- In a 1991 Gallup Survey of 9,028 drivers nationwide, 14% of the respondents reported they drove while close to or under the influence of alcohol within the last three months.

- In a random survey of drivers stopped at all hours during one week, 12 percent had been drinking; two percent had a Blood Alcohol Concentration (BAC) of 0.10 or more.

- In numerous random surveys of drivers stopped during late evening-early morning weekend hours, approximately 10 percent had a BAC of 0.10 or more. (See Exhibit 2-1.)

EXHIBIT 2-1



- In a special study of drivers leaving bars between 9 p.m. and 2 a.m. Friday and Saturday nights, one in seven (approximately 14%) had a BAC of 0.10 or more.

It is conservatively estimated that the typical DWI violator commits that offense about 80 times per year. In other words, the average DWI violator drives while under the influence once every four or five nights. (See Exhibit 2-2.)

EXHIBIT 2-2

JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
			X				X				
X				X		X	X		X		X
	X								X		
X			X		X			X			
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The average DWI violator commits the offense 80 times per year.

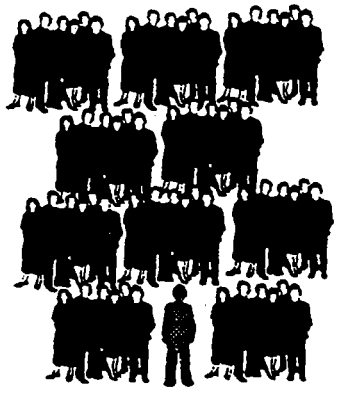
GENERAL DETERRENCE

One approach to reducing the number of drinking drivers is general deterrence of DWI. General deterrence of DWI is based in the driving public's fear of being arrested. If enough violators come to believe that there is a good chance that they will get caught, at least some of them will stop committing DWI at least some of the time. However, unless there is a real risk of arrest, there will not be much fear of arrest.

Law enforcement officers must arrest enough violators enough of the time to convince the general public that they will get caught, sooner or later, if they continue to drive while impaired.

How many DWI violators must be arrested in order to convince the public that there is a real risk of arrest for DWI? Several programs have demonstrated that significant deterrence can be achieved by arresting one DWI violator for every 400 DWI violations committed. Currently, however, for every DWI violator arrested, there are between 500 and 2,000 DWI violations committed. (See Exhibit 2-3.) When the chances of being arrested are one in two thousand, the average DWI violator really has little to fear.

EXHIBIT 2-3



Chances of a DWI violator being arrested are as low as 1 in 2000.

Why is the DWI arrest to violations ratio (1:2000) so low? There are three noteworthy reasons.

- DWI violators vastly outnumber police officers. It is not possible to arrest every drinking driver each time they commit DWI.

- o Some officers are not highly skilled at DWI detection. They fail to recognize and arrest many DWI violators.

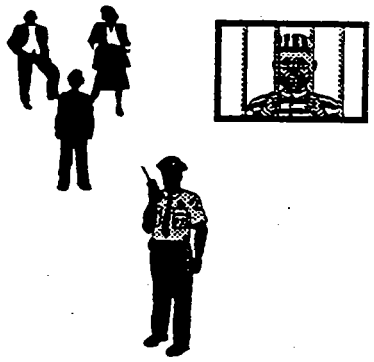
- o Some officers are not motivated to detect and arrest DWI violators.

SIGNIFICANT FINDINGS

In a study conducted in Fort Lauderdale, Florida, only 22 percent of traffic violators who were stopped with BACs between 0.10 and 0.20 were arrested for DWI. The remainder were cited for other violations, even though they were legally "under the influence." In this study breath tests were administered to the violators by researchers after the police officers had completed their investigations. The officers failed to detect 78 percent of the DWI violators they investigated.

The implication of this study, and of other similar studies, is that for every DWI violator actually arrested for DWI, three others are contacted by police officers, but are not arrested for DWI. (See Exhibit 2-4.) It is clear that significant improvement in the arrest rate could be achieved if officers were more skilled at DWI detection.

EXHIBIT 2-4



For every DWI violator arrested, 3 others are contacted face to face by police, but are not arrested.

Several enforcement programs have succeeded in achieving significant DWI deterrence. Consider, for example, the three year intensive weekend DWI enforcement program in Stockton, California. Under that program:

- o arrests increased 500 percent;
- o weekend nighttime accidents decreased 34 percent;
- o the proportion of nighttime weekend drivers legally under the influence dropped from nine percent to six percent.

Improved DWI detection can be achieved in virtually every jurisdiction in the country. The keys to success are police officers who are:

- o skilled at DWI detection;
- o willing to arrest every DWI violator who is detected;
- o supported by their agencies in all aspects of this program, from policy through practical application.

THE PROBLEM OF DWI

HOW WIDESPREAD IS DWI?

While not all of those who drive after drinking have a BAC of 0.10 or more, the presumptive or illegal per se limit for DWI in most states, many drivers do have BACs in excess of .10.

A frequently quoted, and often misinterpreted, statistic places the average incidence of DWI at one driver in fifty. Averaged across all hours of the day and all days of the week, two percent of the drivers on the road are DWI.[1] That 1 in 50 figure is offered as evidence that a relatively small segment of America's drivers -- the so-called "problem" group -- account for the majority of traffic deaths. There's nothing wrong with that figure as a statistical average, but police officers know that at certain times and places many more than two percent of drivers are under the influence of alcohol. National Highway Traffic Safety Administration research suggests that during the late night, weekend hours, as many as ten percent of drivers on the roads may be DWI.[2] On certain holiday weekends, and other critical times, the figure may go even higher.

HOW MANY? HOW OFTEN?

The issue of how many DWIs are on the road at any given time is an important factor in measuring the magnitude of the problem. However, from an overall traffic safety perspective, the more important issue may be the number of drivers who ever commit DWI. Just how widespread is this violation? In enforcement terms, how many people do we need to deter?

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1 Borkenstein, R.F., et al, Role of Drinking Driver in Traffic Accidents. Bloomington IN: Department of Police Administration, Indiana University, March 1964.

2 Alcohol Highway Safety Workshop, Participant's Workbook Problem Status. NHTSA, 1980.

Clearly, it is more than one in fifty. Although it may be true that, on the average, two percent of drivers are DWI at any given time, it certainly is not the same two percent every time. It is even more than one in ten. Surely not everyone who commits DWI is out on the road, under the influence, every Friday and Saturday night. Some of them, at least, must skip an occasional weekend. Thus, the ten percent who show up, weekend after weekend, in the Friday and Saturday statistics must come from a larger pool of violators, each of whom "contributes" to the statistics on some nights, but not necessarily on all nights.

An analysis of BAC roadside survey data suggests that the average DWI violator commits the violation approximately 80 times each year.[3] Undoubtedly, there are some who drive under the influence virtually everyday; others commit the violation less often. It is likely that at least one quarter of all American motorists drive while under the influence at least once in their lives. That figure falls approximately midway between the 55 percent of drivers who at least occasionally drive after drinking and the ten percent of weekend, nighttime drivers who have BACs above the so-called legal limit.

Our estimated one in four drivers includes everyone who drives drunk everyday, as well as everyone who commits the violation just once and never offends again; and it includes everyone in between. In short, it includes everyone who ever runs the risk of being involved in an accident while under the influence of alcohol.

SOCIETY'S PROBLEM AND THE SOLUTION

It really doesn't matter whether this one in four estimate is reasonably accurate (in fact, it is probably low). The fact is that far more than two percent of American drivers actively contribute to the DWI problem. DWI is a crime committed by a substantial segment of Americans. It has been and remains a popular crime; one that many people from all walks and stations of life commit. DWI is a crime that can be fought successfully only through a societal approach of comprehensive community based programs.

THE SOLUTIONS

THE ULTIMATE GOAL: CHANGING BEHAVIOR

What must comprehensive community based DWI programs seek to accomplish? Ultimately, nothing less than fundamental behavioral change, on a widespread basis. The goal is to encourage more Americans to:

- o avoid committing DWI, either by avoiding or controlling drinking prior to driving or by selecting alternative transportation.

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[3] DWI Law Enforcement Training: Instructor's Manual. NHTSA. August 1974. P.139.

- o intervene actively to prevent others from committing DWI (for example, putting into practice the theme "friends don't let friends drive drunk");

- o avoid riding with drivers who are under the influence of alcohol.

The final test of the value of DWI countermeasures on the national, state and local levels is whether they succeed in getting significantly more people to modify their behavior. The programs also pursue other more immediate objectives that support or reinforce the ultimate goal. However, the ultimate goal is to change driving while impaired to an unacceptable form of behavior at all levels.

PURSUING THE GOAL: TWO APPROACHES

How can we bring about these changes in behavior? How can we induce more people to avoid DWI violations, prevent others from drinking and driving, and avoid becoming passive "statistics" by refusing to ride with drinking drivers? Basically, there are two general approaches that must be taken to achieve this goal. One: prevention -- gives promise of the ultimate, lasting solution to the DWI problem; but it will require a substantial amount of time to mature fully. The other -- deterrence -- only offers a partial or limited solution, but it is available right now.

PREVENTION: THE ULTIMATE SOLUTION

DWI countermeasures that strive for the ultimate achievement of drinking and driving behavioral changes have been grouped under the label "Prevention." There are many kinds of DWI preventive activities. Some are carried out by and in our schools, some through the mass media, some through concerned civic groups, and so forth. The various preventive efforts focus on different specific behaviors and address different target groups. However, they seek to change drinking and driving behavior by promoting more positive attitudes and by fostering a set of values that reflects individual responsibilities toward drinking and driving.

Preventive countermeasures seek society's acceptance of the fact that DWI is wrong. Some people believe that drinking and driving is strictly an individual's personal business; that it is up to each person to decide whether or not to accept the risk of driving after drinking. Preventive activities try to dispel that outmoded and irresponsible belief. Instead, they promote the idea that no one has the right to endanger others by drinking and driving, or to risk becoming a burden (economically and otherwise) to others as a result of injuries suffered while drinking and driving. Realistically, everyone has an obligation not only to control their own drinking and driving, but also to speak up when others are about to commit the violation. Only when all of society views DWI as a negative behavior that cannot be tolerated or condoned, will the public's behavior begin to change. That is the long-term solution.

DWI prevention will never be 100 percent successful. In reality, there will always be people who drink and drive. However, with new sets of values come new behaviors. For example, one need only look at the proliferation of "Thank You for Not Smoking" signs. Displaying such a sign a generation ago would have been viewed as impolite, if not anti-social. Today, "No Smoking" policies are strictly enforced in many work areas.

DWI prevention through basic shifts in attitudes and values can work. Given enough time, it will work. The key word is time. A full generation or more must grow to maturity before new attitudes take hold and start to change behavior. We can look at today's children and expect that their attitude toward drinking and driving will be different from their parents; however, we need an interim solution, and we need it NOW.

DWI DETERRENCE

DETERRENCE: THE INTERIM SOLUTION

DWI countermeasures that seek a short-cut to the ultimate goal of behavioral change generally are labeled "Deterrence." Deterrence can be described as negative reinforcement. Some deterrence countermeasures focus primarily on changing individual drinking and driving behavior while others seek to influence people to intervene into others' drinking and driving decisions.

The key feature of deterrence is that it strives to change DWI behavior without dealing directly with the prevailing attitudes about the rightness or wrongness of DWI. Deterrence uses a mechanism quite distinct from attitudinal change: fear of apprehension and application of sanctions.

THE FEAR OF BEING CAUGHT AND PUNISHED

Large scale DWI deterrence programs try to control the DWI behavior of the driving public by appealing to the public's presumed fear of being caught. Most actual or potential DWI violators view the prospect of being arrested with extreme distaste. For some, the arrest, with its attendant handcuffing, booking, publicity and other stigmatizing and traumatizing features, is the thing most to be feared. For others, it is the prospective punishment (jail, stiff fine, etc.) that causes most of the concern. Still others fear most the long-term costs and inconvenience of a DWI arrest: the license suspension and increased premiums for automobile insurance. For many violators the fear probably is a combination of all of these. Regardless, if enough violators are sufficiently fearful of DWI arrest, some of them will avoid committing the violation at least some of the time. Fear by itself will not change their attitudes; if they do not see anything inherently wrong with drinking and driving in the first place, the prospect of arrest and punishment will not help them see the light. However, fear sometimes can be enough to keep them from putting their anti-social attitudes into practice.

This type of DWI deterrence, based on the fear of being caught, is commonly called general deterrence. It applies to the driving public generally and presumably affects the behavior of those who have never been caught. There is an element of fear of the unknown at work here.

Another type of DWI deterrence, called specific deterrence, applies to those who have been caught and arrested. The typical specific deterrent involves some type of punishment, perhaps a fine, involuntary community service, a jail term or action against the driver's license. The punishment is imposed in the hope that it will convince the specific violator that there is indeed something to fear as a result of being caught, and to emphasize that if there is a next time, the punishment will be even more severe. It is the fear of the known that comes into play in this case.

The concept of DWI deterrence through fear of apprehension or punishment seems sound. But will it work in actual practice? The crux of the problem is this: If the motoring public is to fear arrest and punishment for DWI, they must perceive that there is an appreciable risk of being caught and convicted if they commit the crime. If actual and potential DWI violators come to believe that the chance of being arrested is nil, they will quickly lose whatever fear of arrest they may have felt.

Enforcement is the mechanism for creating and sustaining a healthy fear of being caught for DWI. No specific deterrence program can amount to much, unless police officers arrest large numbers of violators; no punishment or rehabilitation program can affect behavior on a large scale unless it is applied to many people. General deterrence absolutely depends on enforcement -- the fear of being caught is a direct function of the number of people who are caught.

Obviously, the police alone cannot do the job. Legislators must supply sound laws that the police can enforce. Prosecutors must vigorously prosecute DWI violators, and the judiciary must adjudicate fairly and deliver the punishments prescribed by law. The media must publicize the enforcement effort and communicate the fact that the risk is not worth the probable outcome. Each of these elements plays a supportive role in DWI deterrence.

HOW GREAT A RISK IS THERE?

The question now is, are violators afraid of being caught? More importantly, should they be afraid? Is there really an appreciable risk of being arrested if one commits DWI?

The answer to all of these questions unfortunately is: probably not. In most jurisdictions, the number of DWI arrests appears to fall short of what would be required to sustain a public perception that there is a significant risk of being caught.

Sometimes, it is possible to enhance the perceived risk, at least for a while, through intensive publicity. However, media "hype" without correspondingly intensified enforcement has never been enough to maintain the climate of fear for very long.

HOW MUCH SHOULD THE PUBLIC FEAR?

We can draw some reasonable estimates of DWI enforcement intensity, based on what we know and on certain assumptions we have already made. Suppose we deal with a random sample of 100 Americans of driving age. If they come from typical enforcement jurisdictions, chances are that exactly one of them will be arrested for DWI in any given year: our annual DWI arrests, in most places, equal about one percent of the number of drivers in the population. That is one arrest out of 100 drivers during one year; however, how many DWI violations do those drivers commit? Recall our previous estimates that some 25 percent of America's drivers at least occasionally drive while under the influence, and that the average violator commits DWI 80 times each year. Then, our sample of 100 drivers includes 25 DWI violators who collectively are responsible for 2,000 DWI violations yearly.

CHANGING THE ODDS

If an arrest/violation ratio of 1 in 2,000 is not enough to make deterrence work, is it then reasonable to think that we can ever make deterrence work? After all, if we doubled DWI arrests to 1 in 1,000, we would still be missing 999 violators for every one we managed to catch. If we increased arrests ten-fold, to 1 in 200, 199 would escape for every one arrested. How much deterrence would that produce?

Surprisingly, it would probably produce quite a bit. We don't have to arrest every DWI offender every time in order to convince them that they have something to fear. We only have to arrest enough of them enough of the time to convince many of them that it can happen to them. As the arrest rate increases, the odds are that it will happen to them eventually. The law of averages (or cumulative probability) will catch up with them, and sooner than we might at first expect.

The statistics on the next page display the cumulative probability (as a percentage) of being arrested at least once during the course of one, two or three years as a function of the arrest rate on any given night. These statistics are based on the assumption that the average violator commits DWI 80 times each year.

Percent of violators arrested after...

Nightly Arrest Rate	One Year	Two Years	Three Years
1 in 2000	3.9%	7.7%	11.3%
1 in 1000	7.7%	14.8%	21.3%
1 in 500	14.8%	27.4%	38.2%
1 in 200	33.0%	55.2%	70.0%

Clearly, the chances of being caught accumulate very quickly as the arrest/violation ratio increases. If we could maintain a ratio of one arrest in every 500 violations (a level of enforcement currently maintained in some jurisdictions), then by the time one year has passed, slightly more than one of every seven people (14.8%) who have committed DWI during that year will have been arrested at least once. It probably is a high enough chance to get the attention -- and fear -- of many violators. If we could achieve an arrest ratio of 1 in 200 (a level attainable by officers skilled in DWI detection) we will arrest fully one-third of all DWI violators at least once every year, and we will arrest more than half of them by the time two years have gone by.

DWI DETECTION: THE KEY TO DETERRENCE

CAN IT BE DONE, AND WILL IT WORK?

Is there any evidence that a practical and realistic increase in DWI enforcement activity will induce a significant degree of general deterrence and a corresponding change in DWI behavior? Yes there is.

As early as 1975, in the city of Stockton, California, a study showed that the city's total number of DWI arrests (700) were considerably less than one percent of the areas licensed number of drivers (130,000). The implication here was that Stockton police were only maintaining the arrest/violation ration of 1-2,000, or less. In addition, roadside surveys on Friday and Saturday nights disclosed that nine percent of the drivers were operating with BAC's of 0.10 or higher.

Then things changed. Beginning in 1976 and continuing at planned intervals through the first half of 1979, Stockton police conducted intensive DWI enforcement on weekend nights. The officers involved were extensively trained. The enforcement effort was heavily publicized and additional equipment (PBTs and cassette recorders) was made available. The police effort was closely coordinated with the District Attorney's office, the County Probation office, and other allied criminal justice and safety organizations. All this paid off. By the time the project came to a close (in 1979) DWI arrests had increased by over 500 percent, and weekend nighttime collisions had decreased by 34 percent, and the number of operators committing DWI dropped one-third.

Since the historical Stockton study numerous states have conducted similar studies to determine the degree of effect that DWI arrests would have on alcohol related fatalities in general, and total fatalities in particular. Most of these studies were conducted between 1978 and 1986.

The results of these studies graphically illustrated in each state that when the number of arrests for DWI increased, the percent of alcohol related fatalities decreased. Further, the results of a study conducted in Florida from 1981 - 1983, showed that when DWI arrests per licensed driver increased, total fatalities decreased (12-month moving average).

DETECTION: THE KEY TO DETERRENCE

It is important to understand how increased DWI enforcement can affect deterrence. Deterrence can vastly exceed the level of enforcement officers achieve on any given night. True, weekend DWI arrests can increase by as much as 500 percent, as in the Stockton study. However, even though the study showed they started with an enforcement ratio no better than 1-in-2000, the tremendous increase in DWI arrests probably only brought the arrest ratio to about 1-in-400. Regardless of the fact that 399 DWI drivers avoided arrest, the increased enforcement effort convinced at least one-third of the violators to change their behavior substantially.

The law of averages quickly starts to catch up with DWI drivers when the enforcement ratio improves to the 1-in-400 ratio. At that level, unless violators change their behavior, many of them will be caught, or at least will have known someone who has been arrested. Coupled with the heavy publicity given to the enforcement effort, those experiences were enough to raise the perception level of apprehension among DWI operators that sooner or later they would be caught. As a result, many of them changed their behavior. This is the best example of general deterrence.

In addition, during the same time that DWI arrests went up over 500 percent in Stockton, citations for other traffic violations increased by a comparatively modest 99 percent. The implication is that Stockton's officers were stopping and contacting only twice as many possible violators as they had before, but they were coming up with more than five times as many arrests.

What have the results of these studies shown? Basically, they have shown that a community will benefit from their officers' increased skills at DWI detection. Principally because of their special training, the officers were better able to recognize "cues" of impairment when they observed vehicles in motion, and they were more familiar with the "clues" or human indicators of impairment exhibited by violators during personal contact. The officers also had more confidence in the field sobriety tests they used to investigate their suspects. The most important factor was that far fewer of the violators being stopped now avoided detection and arrest.

The difficulty in detecting DWI among operators personally contacted by officers has been well documented. Analysis of roadside survey and arrest data suggest that for every DWI violator arrested, three others actually have face-to-face contact with police officers but are allowed to go without arrest.[4] Direct support of that inference was found in the Fort Lauderdale BAC study, where researchers demonstrated that police officers arrested only 22 percent of the DWI operators they contacted, whose BAC levels were subsequently shown to be between 0.10 and 0.20.[5]

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[4] DWI Law Enforcement Training, op. cit.

[5] Fort Lauderdale BAC Study.

The ability to detect DWI violators is the key to general deterrence and possibly, the greatest impediment to it. If we accept the three-to-one ratio of failed detections as being reasonably accurate, the implications are rather alarming. Consider the impact on a DWI violator's subsequent behavior when, after being stopped by the police, is allowed to continue driving. Very likely, these DWI violators and their friends will become even more convinced of their ability to handle drinking and driving. Further, they will come to believe that they will never be arrested because police officers can't determine when they are "over the limit." Instead of creating general DWI deterrence, this attitude breeds specific reinforcement. This helps to develop a feeling among DWI violators that they have nothing more to fear from police than an occasional ticket for a minor traffic offense.

On the positive side, the ratio of undetected to detected violations suggests that much can be accomplished with existing resources, if we use those resources as efficiently as possible. By just being able to improve detection skills of law enforcement officers we could experience an increase in the arrest/violation ratio of 4-in-2000 without any increase in contacts.

PHYSIOLOGY OF ALCOHOL

A BRIEF OVERVIEW OF ALCOHOL

Alcohol is the most abused drug in the United States.

"Alcohol" is the name given to a family of closely related and naturally-occurring chemicals. Each of the chemicals that is called an "alcohol" is made up of molecules that contain a single oxygen atom and varying numbers of hydrogen and carbon atoms. The simplest alcohol has only one carbon atom and four hydrogen atoms. The next alcohol has two carbons and six hydrogens. The third alcohol has three carbons and eight hydrogens. The next one in the "chain" has one more carbon and two more hydrogen atoms than the one before. That is how the alcohols differ from one another.

Alcohols are molecularly very similar and produce similar effects. They produce intoxicating effects when ingested into the human body. Only one of them is meant for human consumption. However, when ingested in substantial quantities it can cause death.

The ingestible alcohol is known as ethyl alcohol, or **ethanol**. Its chemical abbreviation is ETOH. The "ET" stands for "ethyl" and the "OH" represents the single oxygen atom and one of the hydrogen atoms, bonded together in what chemists refer to as the "hydroxy radical". Ethanol is the variety of alcohol that has two carbon atoms. Two of ethanol's best known analogs are methyl alcohol (or **methanol**), commonly called "wood alcohol", and isopropyl alcohol (or **isopropanol**), also known as "rubbing alcohol".

Ethanol is what interests us, because it is the kind of alcohol that features prominently in impaired driving. Ethanol is beverage alcohol, the active ingredient in beer, wine, whiskey, liquors, etc. Ethanol production starts with **fermentation.** That is a kind of decomposition in which the sugars in fruit, grains and other organic materials combine with yeast to product the chemical we call ethanol. This can occur naturally, as yeast spores in the air come into contact with decomposing fruit and grains. However, most of the ethanol in the world didn't ferment naturally, but was produced under human supervision.

When an alcoholic beverage is produced by fermentation, the maximum ethanol content that can be reached is about 14%. At that concentration, the yeast dies, so the fermentation stops. Obtaining a higher ethanol content requires a process called **distillation.** This involves heating the beverage until the ethanol "boils off", then collecting the ethanol vapor. It is possible to do this because ethanol boils at a lower temperature than does water.

Distilled spirits is the name we give to high-ethanol-concentration beverages produced by distillation. These include rum, whiskey, gin, vodka, etc. The ethanol concentration of distilled spirits usually is expressed in terms of **proof**, which is a number corresponding to twice the ethanol percentage. For example, an 80-proof beverage has an ethanol concentration of 40 percent.

Over the millennia during which people have used and abused ethanol, some standard-size servings of the different beverages have evolved. Beer, for example, is normally dispensed in 12-ounce servings. Since beer has an ethanol concentration of about four percent, the typical bottle or can of beer contains a little less than one-half ounce of pure ethanol. A standard glass of wine has about four ounces of liquid. Wine is about 12 percent alcohol, so the glass of wine also has a bit less than one-half ounce of ethanol in it. Whiskey and other distilled spirits are dispensed by the "shot glass", usually containing about one and one-quarter ounce of fluid. At a typical concentration of forty percent ethanol (80-proof), the standard shot of whiskey has approximately one-half ounce of ethanol. Therefore, as far as their alcoholic contents are concerned, **a can of beer, a glass of wine and a shot of whiskey are all the same.**

PHYSIOLOGIC PROCESSES

Ethanol is a Central Nervous System Depressant. It doesn't affect a person until it gets into their central nervous system, i.e., the brain, brain stem and spinal cord. Ethanol gets to the brain by getting into the blood. In order to get into the blood, it has to get into the body.

There are actually a number of different ways in which ethanol can get into the body. It can be **inhaled.** Ethanol fumes, when taken into the lungs, will pass into the bloodstream and a positive blood alcohol concentration (BAC) will develop.

However, prolonged breathing of fairly concentrated fumes would be required to produce a significantly high BAC. Ethanol could also be **injected**, directly into a vein; it would then flow with the blood back to the heart, where it would be pumped first to the lungs and then to the brain. And, it could be **inserted**, as an enema, and pass quickly from the large intestine into the blood. But none of these methods are of any practical significance, because alcohol is almost always introduced into the body orally, i.e., by drinking.

Absorption

Once the ethanol gets into the stomach, it has to move into the blood. The process by which this happens is known as **absorption**. One very important fact that pertains to alcohol absorption is that it doesn't have to be digested in order to move from the stomach to the blood. Another very important fact is that alcohol can pass directly through the walls of the stomach. These two facts, taken together, mean that -- under the right circumstances -- absorption of alcohol can be accomplished fairly quickly. The ideal circumstance for rapid absorption is to drink on an empty stomach.

When the alcohol enters the empty stomach, about 20 percent of it will make its way directly through the stomach walls. The remaining 80 percent will pass through the base of the stomach and enter the small intestine, from which it is readily absorbed into the blood. Because the body doesn't need to digest the alcohol before admitting it into the bloodstream, the small intestine will be open to the alcohol as soon as it hits the stomach.

But what if there is food in the stomach? Suppose the person has had something to eat shortly before drinking, or eats food while drinking; will that affect the absorption of alcohol?

Yes it will. Food has to be at least partially digested in the stomach before it can pass to the small intestine. When the brain senses that food is in the stomach, it commands a muscle at the base of the stomach to constrict, and cut off the passage to the small intestine. The muscle is called the **pylorus**, or pyloric valve. As long as it remains constricted, little or nothing will move out of the stomach and into the small intestine. If alcohol is in the stomach along with the food, the alcohol will also remain trapped behind the pylorus. Some of the alcohol trapped in the stomach will begin to break down chemically before it ever gets into the blood. In time, as the digestive process continues, the pylorus will begin to relax, and some of the alcohol and food will pass through. But the overall effect will be to slow the absorption significantly. Because the alcohol only slowly gets into the blood, and because the body will continue to process and eliminate the alcohol that does manage to get in there, the drinker's BAC will not climb as high as it would have if he or she had drunk on an empty stomach.

Distribution

Once the alcohol moves from the stomach into the blood, it will be distributed throughout the body by the blood. Alcohol has an affinity for water. The blood will carry the alcohol to the various tissues and organs of the body, and will deposit the alcohol in them in proportion to their water contents. Brain tissue has a fairly high water content, so the brain receives a substantial share of the distributed alcohol. Muscle tissue also has a reasonably high water content, but fat tissue contains very little water. Thus, very little alcohol will be deposited in the drinker's body fat. This is one factor that differentiates alcohol from certain other drugs, notably PCP and THC, which are very soluble in fat.

The affinity of alcohol for water, and its lack of affinity for fat, helps explain an important difference in the way alcohol affects women and men. Pound for pound, the typical female's body contains a good deal less water than does the typical man's. This is because women have additional adipose (fatty) tissue, designed in part to protect a child in the womb. A Swedish pioneer in alcohol research, E.M.P. Widmark, determined that the typical male body is about 68% water, the typical female only about 55%. Thus, when a woman drinks, she has less fluid -- pound for pound -- in which to distribute the alcohol.

If a woman and a man who weighed exactly the same drank exactly the same amount of alcohol under the same circumstances, her BAC would climb higher than his. When we couple this to the fact that the average woman is smaller than the average man, it becomes apparent that a given amount of alcohol will cause a higher BAC in a woman than it usually will in a man.

Elimination

As soon as the alcohol enters the blood stream, the body starts trying to get rid of it. Some of the alcohol will be directly expelled from the body chemically unchanged. For example, some alcohol will leave the body in the breath, in the urine, in sweat, in tears, etc. However, only a small portion (about 2-10%) of the ingested alcohol will be directly eliminated.

Most of the alcohol a person drinks is eliminated by **metabolism**. Metabolism is a process of chemical change. In this case, alcohol reacts with oxygen in the body and changes, through a series of intermediate steps, into carbon dioxide and water, both of which are directly expelled from the body.

Most of the metabolism of alcohol in the body takes place in the liver. An enzyme known as **alcohol dehydrogenase** acts to speed up the reaction of alcohol with oxygen. The speed of the reaction varies somewhat from person to person, and even from time to time for any given person. On the average, however, a person's blood alcohol concentration -- after reaching peak value -- will drop by about 0.015% per hour. For example, if the person reaches a maximum BAC of 0.15%, it will take about ten hours for the person to eliminate all of the alcohol.

For the average-sized male, a BAC of 0.015% is equivalent to about two-thirds of the alcohol content of a standard drink (i.e., about two-thirds of a can of beer, or glass of wine or shot of whiskey). For the average-sized female, that same BAC would be reached on just one-half of a standard drink. So the typical male will eliminate about two-thirds of a drink per hour, while the typical female will burn up about one-half of a drink in that hour.

We can control the rate at which alcohol enters our bloodstream. For example, we can gulp down our drinks, or slowly sip them. We can drink on an empty stomach, or we can take the precaution of eating before drinking. We can choose to drink a lot, or a little. But once the alcohol gets into the blood, there is nothing we can do to affect how quickly it leaves. Coffee won't accelerate the rate at which our livers burn alcohol. Neither will exercise, or deep breathing, or a cold shower. We simply have to wait for the process of metabolism to move along at its own speed.

DOSE-RESPONSE RELATIONSHIPS

People sometimes ask, "how 'high' is 'drunk'?" What is the "legal limit" for "drunk driving"? How much can a person drink before becoming "impaired"?

There is no simple answer to these or similar questions, except to say that any amount of alcohol will affect a person's ability to drive to some degree. It is true that the laws of nearly all States establish a BAC limit at which it is explicitly unlawful to operate a vehicle. In most cases, that "limit" is either 0.08% or 0.10% BAC. **But every State also makes it unlawful to drive when "under the influence" of alcohol**, and the law admits the possibility that a particular person may be under the influence at much lower BACs.

How much alcohol does someone have to drink to reach these kinds of BACs? Obviously, as we've already seen, it depends on how much time the person spends drinking, on whether the person is a man or a woman, on how large the person is, on whether the drinking takes place on an empty stomach, and on certain other factors. But let's take as an example a 175-pound man. If he drinks two beers, or two shots of whiskey, in quick succession on an empty stomach, his BAC will climb to slightly above 0.04%. Two more beers will boost him above 0.08%. One more will push him over 0.10%. In one respect, then, it doesn't take very much alcohol to impair someone: "a couple of beers" can do it.

But in another respect, when we contrast alcohol with virtually any other drug, we find that impairment by alcohol requires a vastly larger dose than does impairment by the others. Consider exactly what a BAC of 0.10% means. Blood alcohol concentration is expressed in terms of the "number of **grams** of alcohol in every **100 milliliters** of blood". When we find that a person has a BAC of 0.10%, that means that there is one-tenth (0.10) of a gram of alcohol in any given 100 milliliter sample of blood. One-tenth of a gram is equal to one hundred milligrams (a milligram is one-thousandth of a gram). So, at a BAC of 0.10%, the person has 100 milligrams of alcohol in every 100 milliliters of blood, or exactly one milligram per milliliter.

TEST YOUR KNOWLEDGE

INSTRUCTIONS: Complete the following sentences.

1. On the average, ___ percent of the drivers on the road at any given time are DWI.

2. On a typical weekend night, ___ percent of the drivers are DWI.

3. The average DWI violator commits that violation ___ times a year.

4. In typical enforcement jurisdictions one DWI violation in ___ results in arrest.

5. Research has shown that for every DWI violator arrested ___ others are contacted face to face by police, but released.

6. In the Fort Lauderdale study, police officers arrested ___ percent of the drivers they contacted whose BACs were .10 to .20.

7. Name three different chemicals that are **alcohols**. Which of these is **beverage alcohol**, intended for human consumption? What is the chemical symbol for beverage alcohol?

8. What is the name of the chemical process by which beverage alcohol is produced **naturally**? What is the name of the process used to produce **high-concentration** beverage alcohol?

9. Multiple Choice: "Blood alcohol concentration is the number of _____ of alcohol in every 100 milliliters of blood."

   A. grams
   B. milligrams
   C. nanograms

10. True or False: Pound-for-pound, the average woman contains more water than does the average man.

11. What do we mean by the "proof" of an alcoholic beverage?

12. Every chemical that is an "alcohol" contains what three elements?

13. True or False: Most of the alcohol that a person drinks is absorbed into the blood via the small intestine.

14. What is the name of the muscle that controls the passage from the stomach to the lower gastrointestinal tract?

15. True or False: Alcohol can pass directly through the stomach walls and enter the bloodstream.

16. Multiple Choice: Suppose a man and a woman who both weigh 160 pounds arrived at a party and started to drink at the same time. And suppose that, two hours later, they both have a BAC of 0.10%. Chances are ....

    A. he had more to drink than she did.
    B. they drank just about the same amount of alcohol.
    C. he had less to drink than she did.

17. In which organ of the body does most of the metabolism of the alcohol take place?

18. What is the name of the enzyme that aids the metabolism of alcohol?

19. Multiple Choice: Once a person reaches his or her peak BAC, it will drop at a rate of about _____ per hour.

    A. 0.025%
    B. 0.015%
    C. 0.010%

20. True or False: It takes about thirty minutes for the average 175-pound man to "burn off" the alcohol in one 12-ounce can of beer.

SESSION III

THE LEGAL ENVIRONMENT

SESSION III

THE LEGAL ENVIRONMENT

Upon successfully completing this session, the students will be able to:

- State and discuss the elements of DWI offenses.
- Discuss the provisions of the implied consent law.
- Discuss the relevance of chemical test evidence.
- Discuss precedents established through case law.

CONTENT SEGMENTS	LEARNING ACTIVITIES
A. Basic DWI Statute: Driving While Under The Influence	o Instructor-Led Presentation
B. Implied Consent Law and Presumptions	o Reading Assignments
C. Illegal Per Se Statute: Driving With A Prescribed Blood Alcohol Concentration	
D. Preliminary Breath Testing	
E. Case Law Review	

INTRODUCTION

An understanding of drinking and driving laws that apply in your jurisdiction is critical to DWI enforcement.

All states (and many local jurisdictions) have their own drinking and driving laws. While the specific language of these laws may vary significantly, most include the following provisions:

- a Basic DWI Law;
- an Implied Consent Law;
- an Illegal Per Se Law;
- a Preliminary Breath Testing Law.

In the following pages these four types of drinking and driving laws are discussed in detail. The illustrations provided are drawn from the Uniform Vehicle Code. You are responsible for learning whether and how each law applies in your jurisdiction. Worksheets are provided to guide you in learning about the specifics of your laws.

BASIC DWI LAW

A state's basic DWI statute may be subtitled Driving While Under the Influence, or something similar. Typically the statute describes the who, what, where and how of the offense in language such as this:

> It is unlawful for any person to operate or be in actual physical control of any vehicle within this state while under the influence of alcohol and/or any drug.

ARREST

In order to arrest someone for a basic DWI violation, a law enforcement officer must have probable cause to believe that all elements of the offense are present. That is, the officer must have probable cause to believe that

- the person in question
- was operating or in actual physical control of
- a vehicle (truck, van, automobile, motorcycle, even bicycle, according to specific provisions in various states)
- while under the influence of alcohol, another drug, or both.

Note: In some states it is unlawful to operate a vehicle while under the influence anywhere in the State: on or off roadways, on private property, and so on. In other states, the law applies only on publicly accessible roadways.

CONVICTION

In order to convict a person of DWI, it is necessary to establish that all four elements were present. With regard to under the influence, courts have generally held that phrase to mean that the ability to operate a vehicle has been affected or impaired. To convict a person of a basic DWI violation, it is usually necessary to show that the person's capability of safely operating the vehicle has been impaired. If DWI is a criminal offense, the facts must be established "beyond a reasonable doubt." If DWI is an infraction, the standard of proof may be less. In either case, it is the officer's responsibility to collect and to thoroughly document all evidence.

IMPLIED CONSENT LAW

DESCRIPTION

The question of how much impairment in the ability to operate a vehicle will equate with driving while under the influence is not completely clear. Some courts have held that the slightest degree of impairment to the ability to drive means the driver is "under the influence." Other courts have held that there must be evidence of substantial impairment to the ability to drive before DWI conviction is warranted. Therefore, proving that a driver was "under the influence" has been (and continues to be) difficult.

To help resolve this difficulty, states have enacted Implied Consent Laws. The principal purpose of the Implied Consent Law is to encourage people arrested for DWI to submit to a chemical test to provide scientific evidence of alcohol influence. The Implied Consent Law usually includes language similar to the following:

> Any person who operates or is in actual physical control of a motor vehicle upon the public highways of this state shall be deemed to have given consent to a chemical test for the purpose of determining the alcohol and/or drug content of blood when arrested for any acts alleged to have been committed while the person was operating or in actual physical control of a vehicle while under the influence of alcohol and/or any drug.

The Implied Consent Law requires the driver to submit to a chemical test(s). However, the law provides penalties for refusal to submit to the test. The law also provides that the individual's driver's license may be suspended or revoked if the refusal is found to be unreasonable. Including a provision for license suspension or revocation as a means of encouraging those arrested for DWI to submit to the test so that valuable chemical evidence may be obtained.

LEGAL PRESUMPTIONS

Legal presumptions define the significance of the scientific chemical test evidence. Generally the Implied Consent Law provides an interpretation or presumption for the chemical test evidence like the following:

> For Example: If the chemical test shows that the person's blood alcohol concentration (BAC) is ____ or more it shall be presumed that the person is under the influence. If the test shows that the BAC is ___ or less, it shall be presumed that the person is not under the influence. If the test shows that the BAC is more than ___ but less than ___, there is no presumption as to whether the person is or is not under the influence.

NOTE: These laws vary from state to state. Be aware of your state's law.

The weight of the chemical test evidence is presumptive of alcohol influence, not conclusive.

If there is no evidence to the contrary, the court may accept the legal presumption and conclude that the driver was or was not under the influence, on the basis of the chemical test alone. However, other evidence, such as testimony about the driver's appearance, behavior or speech, for example, may be sufficient to overcome the presumptive weight of the chemical test.

It is possible for a person whose BAC at the time of arrest is above the per se or presumptive level legal limit to be acquitted of DWI. It is also possible for a person whose BAC at the time is below the per se or presumptive level to be convicted of DWI. Consider the following examples:

Example 1

A driver is arrested for DWI. A chemical test administered to the driver shows a BAC of 0.13 percent. At the subsequent trial, the chemical test-evidence is introduced. In addition, the arresting officer testifies about the driver's appearance, behavior and driving. The testimony is sketchy, confused and unclear.

Another witness testifies that the driver drove, behaved and spoke normally. The court finds the driver not guilty of DWI.

Example 2

A driver is arrested for DWI. A chemical test administered to the driver shows a BAC of 0.03 percent. At the subsequent trial, the chemical test evidence is introduced. In addition, the arresting officer testifies about the driver's stuporous appearance, slurred speech, impaired driving and inability to perform divided attention field sobriety tests. The testimony is clear and descriptive. The court finds the driver guilty of DWI.

The difference in outcomes in the two examples cited is directly attributable to the evidence other than the chemical test evidence presented in court. Remember that the chemical test provides presumptive evidence of alcohol influence; it does not provide conclusive evidence. While the "legal limit" in a given jurisdiction may be 0.10 percent BAC, many people will demonstrate impaired driving ability long before that "limit" is reached.

ILLEGAL PER SE LAW

DESCRIPTION

Most states include in their DWI Law or Implied Consent Law a provision making it illegal to drive with a prescribed blood alcohol concentration (BAC). This provision, often called an Illegal Per Se Law, creates another drinking and driving offense which is related to, but different from the basic DWI offense. Following is a typical Illegal Per Se Provision:

> It is unlawful for any person to operate or be in actual physical control of any vehicle within this state while having a blood alcohol concentration at or above state's level.

The Illegal Per Se Law makes it an offense in and of itself to drive while having a BAC at or above state's level. To convict a driver of an Illegal Per Se Violation, it is sufficient to establish that the driver's BAC was at or above state's level while operating a vehicle in the state. It is not necessary to establish that the driver was under the influence.

NOTE: These laws vary from state to state. Be aware of your state's law.

The Illegal Per Se Law does not replace the basic DWI law. Rather, the two work together. Each defines a separate offense:

- o The basic DWI Law makes it an offense to drive while under the influence of alcohol and/or any drug.

- o The Illegal Per Se Law makes it an offense to drive while having more than a certain percentage of alcohol in the blood.

For the basic DWI offense, the chemical test result is presumptive evidence. For the Illegal Per Se offense, the chemical test result is conclusive evidence.

PURPOSE

The principal purpose of the Illegal Per Se Law is to aid in prosecution of drinking and driving offenders. The law reduces the state's burden of proof. It is not necessary for the prosecutor to show that the driver was "under the influence." The state is not required to demonstrate that the driver's ability to drive was affected. It is sufficient for the state to show that the driver's BAC was at or above state's level.

While the statute aids in prosecution, it does not really make drinking and driving enforcement easier. An officer must still have probable cause to believe that the driver is under the influence before an arrest can be made. The Implied Consent Law usually requires that the driver already be arrested before consenting to the chemical test. The law also requires that the arrest be made for "acts alleged to have been committed while operating a vehicle while under the influence." Therefore, the officer generally must establish probable cause that the offense has been committed and make a valid arrest before the chemical test can be administered.

SUMMARY

Police officers dealing with drinking and driving suspects must continue to rely primarily on their own powers of detection to determine whether an arrest should be made. Usually it is impossible to obtain a legally admissible chemical test result until after the driver has been arrested. Sometimes drivers will refuse the chemical test after they have been arrested. Then the case will depend strictly upon the officer's observations and testimony. When making a DWI arrest, always assume that the chemical test evidence will not be available. It is critical that you organize and present your observations and testimony in a clear and convincing manner. In this way, more drivers who violate drinking and driving laws will be convicted, regardless of whether they take the chemical tests, and regardless of the test results.

PRELIMINARY BREATH TEST LAW

DESCRIPTION

Many states have enacted preliminary breath testing (PBT) laws. These laws permit a police officer to request a driver suspected of DWI to submit to an on-the-spot breath test prior to arresting the driver for DWI. PBT laws vary significantly from one state to another. A typical statute reads as follows:

> When an officer has reason to believe from the manner in which a person is operating or has operated a motor vehicle that the person has or may have committed the offense of operating while under the influence, the officer may request that person to provide a sample of breath for a preliminary test of the alcohol content of the blood using a device approved for this purpose.

APPLICATION

PBT results are used solely to help determine whether an arrest should be made. The results usually are not used as evidence against the driver in court. However, PBT laws may provide statutory or administrative penalties if the driver refuses to submit to the test. These penalties may include license suspension, fines or other sanctions.

TEST YOUR KNOWLEDGE

INSTRUCTIONS: Complete the following sentences.

1. The elements of the Basic DWI Law are:

   a.

   b.

   c.

   d.

2. If DWI is a criminal offense, the standard of proof is _____

   _____

3. The purpose of the Implied Consent Law is _____

   _____

   _____

4. Under the Implied Consent Law, chemical test evidence is _____

   _____ evidence.

5. The Illegal Per Se Law makes it unlawful to _____

   _____

6. The PBT law permits a police officer to request a driver suspected of DWI to ____

   _____

7. PBT results are used solely to help determine _____

   _____

CASE LAW REVIEW

The following cases are landmark court decisions relevant to the admissibility of Horizontal Gaze Nystagmus (HGN). Challenges to the admissibility of HGN have been based on (1) scientific validity and reliability; (2) relationship of HGN to specific BAC level; (3) officer training, experience, and application.

- The State of Arizona (Petitioner)
  v.
  The Superior Court of the State of Arizona,
  in and for the county of Cochise, and the
  Hon. James L. Riles, Division III (Respondent)
  and
  Frederick Andrew Blake (Real Party in Interest)

  No. 18343-PR
  Court of Appeals
  No. 2 CA-SA 0254
  Cochise Co.
  No. 11684
  April 7, 1986

The Blake case established a very important precedent in Arizona. The trial court ruled that the HGN test was not reliable under Frye v. United States, 293 F.2d 1013 (DC Cir. 1923) and thus could not be used as part of probable cause. The case was dismissed by the trial court. This ruling was appealed by the state and the order of dismissal was reversed by the court of appeals and the case was remanded for further proceedings (7/25/85).

The appellate court decision was reviewed by the State Supreme Court. The State Supreme Court approved the court of appeal's opinion, as modified, and vacated the trial court's dismissal of the Blake prosecution for DWI and remanded the case for proceedings not inconsistent with its opinion.

Following is a summary of the facts of the case and a brief overview of the appellate court and Supreme court opinions.

FACTS: After the defendant was stopped for DUI, he was given field sobriety tests on which he did fair. The officer also administered a Horizontal Gaze Nystagmus (HGN) test and estimated that defendant's blood alcohol content was .17. The intoxilizer showed a .163 reading. At the motion to suppress, the state presented testimony from the SCRI project director which originally researched the HGN test.

The researchers found that they could determine whether a person was above or below a .10 blood alcohol level 80% of the time. Finnish researchers had reached the same results. The project director testified that HGN has been accepted by various researchers, various police agencies and the National Highway Traffic Safety Administration. The police officer who helped develop and standardize HGN testified about his field experience with HGN and his work in the research on HGN. The officer testified that HGN was particularly useful in detecting drivers who had over .10 alcohol in their blood who would otherwise pass the field sobriety tests. The Arizona officer who administers HGN training testified that experienced drinkers with .13 or .14 reading could pass the other field sobriety tests and evade arrest. He testified that to be certified for HGN the officer had to perform 35 practice tests and then had to pass an exam where they must determine the blood alcohol level of suspects within .02 four out of five times. The training officer also testified that the officer must continue to use the test regularly in the field and should be evaluated to make sure the officer maintains his proficiency. The arresting officer testified that he was certified as an HGN specialist. The arresting officer testified without HGN results, he did not think he had probable cause to arrest the defendant. The trial court ruled that the HGN test was not reliable under Frye v. United States and thus could not be used as part of probable cause. Accordingly, the court dismissed the prosecution. The STATE appealed this decision.

ISSUE: Did the trial court err in excluding the HGN evidence?

RULING: Yes, "We conclude that the record shows not only that the HGN is sufficiently reliable to provide probable cause for arrest, but that with the proper foundation as to the expertise of the officer administering it, testimony concerning the administration of the test and its results is admissible at trial. The record shows that the HGN test has gained general acceptance in the field in which it belongs." The court went on to say that they were unable to rule on whether the results of this particular HGN test would be admissible because the only evidence about the officer's proficiency was his testimony that he was certified. The court of appeals noted that the officer kept a log of when he administered the test and said, "This log would be useful if it demonstrated that (the arresting officer) was as proficient in the field as he was on the examination." The order of dismissal is reversed and the case is remanded for further proceedings.

Mr. Blake sought review of the court of appeals opinion and it was granted by the Arizona Supreme Court.

ISSUES:

(1) Whether the HGN test is sufficiently reliable to establish probable cause to arrest for DWI, and

(2) Whether HGN test results are sufficiently reliable to be introduced in evidence at trial.

CONCLUSION: "We find that the horizontal gaze nystagmus test properly administered by a trained police officer is sufficiently reliable to be a factor in establishing probable cause to arrest a driver for violating A.R.S.28-692(B). We further find that the horizontal gaze nystagmus test satisfies the Frye test for reliability and may be admitted in evidence to corroborate or attack, but not to quantify, the chemical analysis of the accused's blood alcohol content. It may not be used to establish the accused's level of blood alcohol in the absence of a chemical analysis showing the proscribed level in the accused's blood, breath or urine. In subsection (A) prosecutions it is admissible, as is other evidence of defendant's behavior, to prove that he was "under the influence."

We approve the court of appeals' opinion, as modified, vacate the trial court's dismissal of the Blake prosecution for violation of A.R.S.28-792(B), and remand for proceedings not inconsistent with this opinion.

A detailed analysis of the facts reviewed by the Supreme Court is contained in the opinion. PEOPLE vs. LOOMIS (California, 1984) 156 Cal. App. 3d 1, 203 Cal. Rptr. 767 (Cal. Super. 1984)

The arresting officer attempted to testify to his opinion concerning the suspect's BAC, in quantitative terms, based solely on the angle of onset of HGN. The suspect had refused to submit to a chemical test. The court held that the officer was not entitled to testify as either a lay or expert witness about HGN, or to give his opinion about the defendant's BAC. The court held that HGN is a new form of scientific evidence, that will be allowed only when there is a preliminary showing of its general acceptance in the scientific community. Moreover, it was clear from the officer's testimony that he had not been formally or properly trained in HGN, and didn't really understand how the test is to be given.

STATE vs. BLAKE (Arizona, 1986) 718 P.2d 171 (Arizona, 1986); see also State vs. Superior Court of County of Cochise, 149 Ariz 269, 718 P.2d 171, 60 ALR 4th, 1103.

This is the landmark ruling on HGN because it was the first case decided at a State Supreme Court. The Arizona Supreme Court found that HGN satisfies the Frye standards for evidence to corroborate, or attack, the issue of a suspect's impairment.

The Frye standards are those set by the U.S. Supreme Court to govern the admissibility of "new" scientific evidence. In effect, the Arizona Supreme Court took judicial notice of HGN, so that it is no longer necessary, in Arizona, to introduce expert scientific testimony to secure the admissibility of HGN. However, the court did set standards governing the training of officers who would be qualified to testify about HGN, and the court explicitly ruled that HGN cannot be used to establish BAC quantitatively in the absence of a chemical test.

STATE vs. CLARK (Montana, 1988) 762 P.2d 853 (Montana, 1988)

The court ruled that HGN results may be admitted at trial. This ruling was not based on the Frye standards, but on more "liberal" rules of evidence: the court held that all scientific evidence should be admitted unless it is "exaggerated popular opinion". In this case, no attempt was made to infer a quantitative estimate of BAC from the angle of onset.

STATE vs. BRESSON (Ohio, 1990)

The state's highest court held that HGN results could be used (1) to establish P.C. of a DWI arrest and (2) as evidence at a DWI trial to prove that a person was driving a motor vehicle while under the influence of alcohol. Results of HGN test could not be used to prove a specific BAC level.

STATE vs. MURPHY (Iowa, 1990)

The court held that the results of a HGN test could be admitted into evidence at a DWI trial to prove the intoxication of the driver. (Not to be used to determine specific BAC level.) The court considered HGN to be one of the SFST's officers administer and in this case the officer was properly trained to administer the test. The court felt that the officer did not have to qualify as an expert witness because the observations were objective in nature and the officer needed no special qualifications to be able to interpret the results.

STATE vs. BUENING (Illinois, 1992)

The court ruled HGN test results admissible since they represented observed "behavior" and could be used. Such evidence could not be used to determine specific BAC level.

STATE vs. HILL (Missouri, 1993)

The court ruled HGN admissible. Such evidence could not be admitted to establish a specific BAC. It was interesting to note that court would allow an officer testimony, **based on experience**, how a person's performance on SFSTs compared with breathalyzer results that indicate a BAC level of 0.10 or more.

TO SUMMARIZE:

The prevailing trend in court is to accept HGN as evidence of impairment, provided the proper scientific foundation is laid. However, courts consistently reject any attempt to derive a quantitative estimate of BAC from nystagmus. Keep in mind that neither nystagmus nor any other elements of the drug recognition examination are intended to substitute for chemical testing. It is true that there is an approximate, statistical relationship between BAC and angle of onset, but this approximate relationship is not sufficiently reliable to permit BAC "prediction" in any individual case.

ATTACHMENTS

A State and Federal Appellate Court Cases on Horizontal Gaze Nystagmus

B Scientific Publications and Research Reports Addressing Nystagmus

C Blake Case

ATTACHMENT A

STATE AND FEDERAL APPELLATE COURT CASES ON HORIZONTAL GAZE NYSTAGMUS
(May 8, 1995)

This paper summarizes the opinions of State and Federal courts that have considered the admissibility of the results of the Horizontal Gaze Nystagmus (HGN) test at a DWI trial. Most of the cases summarized are appellate court decisions. Ref: 60 ALR4th 1129.

Alabama. The court held that the admission of HGN test results at a DWI trial was "not harmless error" if a proper foundation for the test's results had not been made by the State. However, the court further stated that this holding did not necessarily mean that it would approve the admissibility of HGN results even if there was a "proper foundation". 574 So.2d at 859 The court felt that it had "not been presented with sufficient evidence concerning the test's reliability or acceptance by the scientific community to address that question." See *Ex parte State of Alabama,* 574 So.2d 859 (Ala. 1990)** and *Malone v. City of Silverhill,* 575 So.2d 106 (Ala. 1990)**. A law enforcement officer's testimony concerning his training in the use of the HGN test was not sufficient evidence of the scientific reliability of such test to warrant the admissibility of its results into evidence at a DWI trial. *Brunson v. State,* 580 So.2d 62 (Ala.Cr.App. 1991) (cert. den. by the Alabama Supreme Court), *Johnson v. State,* 591 So.2d 580 (Ala.Cr.App. 1991), and *Desselle v. State,* 596 So.2d 602 (Ala.Cr.App. 1991)

Alaska. The court of appeals held that the results of an HGN test could be used alone to determine if there is probable cause to make a DWI arrest where there was other evidence of intoxication (e.g., bloodshot eyes) even if the defendant passed four (4) other field sobriety tests. However, the court made it clear that HGN test results were not to be admitted into evidence at a DWI trial to "corroborate" a chemical test for intoxication. *State v. Grier,* 791 P.2d 627 (AlaskaApp. 1990)

Arizona. HGN test results may be admitted as evidence of driving under the influence. The court felt that HGN satisfied the *Frye** test. However, the court held that HGN test results cannot be used to prove a specific alcohol concentration. Statutory law requires that an alcohol concentration be determined by a chemical analysis of a defendant's blood, breath, or urine. The court also held that the HGN test results could be used to determine probable cause of DWI for arrest purposes. *State v. Superior Court,* 718 P.2d 171 (Ariz. 1986)**. In cases where there is no chemical test to determine an alcohol concentration for intoxication purposes, HGN test results can be admitted the same as other field sobriety tests to show a "neurological dysfunction, one cause of which could be alcohol ingestion." 799 P.2d 860 However, HGN test results cannot be used to establish an alcohol

concentration. The court, in a footnote, discusses the factual differences in this case and the *Ricke* case below decided by the court of appeals. *State ex. rel. Hamilton v. City Court of City of Mesa,* 799 P.2d 855 (Ariz. 1990)**. Also, if the defendant is not careful when cross examining the officer who administered the HGN test, they could "open the door" to the possible introduction of evidence by the State that relates HGN results to an alcohol concentration. *State v. Cook,* 834 P.2d 1267 (Ariz.App.Div. 2 1993) In an illegal per se case decided by the court of appeals, the court held that HGN test results could be admitted into evidence to corroborate chemical test evidence that a person was operating a motor vehicle with an alcohol concentration at or above 0.10. The State supreme court appears to have approved this holding in the *Mesa* case; see footnote 2 in 799 P.2d at 858. *State ex rel. McDougall v. Ricke,* 778 P.2d 1358 (Ariz. App. 1989) Note: An appellate court has held that it was error to admit the results of an HGN test in situations where the defendant was wearing hard contact lenses during the test. However, such error was considered harmless given other aspects of the case. *State v. Stevens,* 1994 Ariz.App. LEXIS 184, ____P.2d____(Ariz.App. 1994)

Arkansas. The results of an HGN test may be admitted for the purpose of proving intoxication. The court, however, has apparently indirectly held that HGN results cannot be used to establish a specific alcohol concentration. *Whitson v. State,* 863 S.W.2d 794 (Ark. 1993)** For a prior case by the Arkansas Court Appeals that reached similar conclusions, see *Middleton v. State,* 780 S.W.2d 581 (Ark. App. 1989)

California. In *People v. Leahy,* 882 P.2d 321 (Calif. 1994)**, the court held (1) that a police officer, unless they have scientific expertise, cannot give an opinion concerning HGN tests results and (2) HGN must be shown to be generally accepted in the scientific community. The court felt that the *Kelly/Frye** standard must be satisfied.

Georgia. The court considered the HGN a type of field sobriety test and allowed the results of such test to be introduced into evidence as would other such tests. *Manley v. State,* 424 S.E.2d 818 (Ga.App. 1992) In an earlier decision, the court felt that there may have been error in the admission of the results of an HGN tests at a DWI trial. The court reached this opinion based on the fact that the State introduced no proof that this test was accepted within the scientific community. However, the introduction of HGN results was considered "harmless error" do to the fact that there was other sufficient evidence upon which the court could have based a DWI conviction. *Foster v. State,* 420 S.E.2d 78 (Ga.App. 1992) For a similar case, see *Ross v. State,* 386 S.E.2d 721 (Ga. App. 1989).

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Idaho. HGN test results are admissible into evidence at a DWI trial. However, such results cannot be used to determine an alcohol concentration. *State v. Garrett,* 811 P.2d 488 (Idaho 1991), and *State v. Gleason,* 844 P.2d 691 (Idaho 1992)

Illinois. The appellate courts in this State have reached contrary positions on whether HGN test results should be admitted into evidence at a DWI trial. Because the State did not provide a proper foundation to establish the scientific reliability of the HGN test, the results of such test could not be admitted into evidence. *People v. Vega,* 496 N.E.2d 501 (Ill. App. 4 Dist. 1986) (reaffirmed in *People v. Sides,* 556 N.E.2d 778 (Ill. App. 4 Dist. 1990)), and *People v. Smith,* 538 N.E.2d 1268 (Ill. App. 2 Dist. 1989). In another case the HGN test results could not be admitted at a DWI trial to establish an alcohol concentration. Statutory law provides that an alcohol concentration be determined by an analysis of bodily substances. *People v. Dakuras,* 527 N.E.2d 163 (Ill. App. 2 Dist. 1988). Note: In one case, HGN test results were admitted because the defendant did not object to such admissibility. *People v. Seymoure,* 511 N.E.2d 986 (Ill. App. 4 Dist. 1987). However, HGN tests can be used as a factor by law enforcement officers to establish probable cause to make a DWI arrest. *People v. Griffith,* 493 N.E.2d 413 (Ill. App. 5 Dist. 1986) and *People v. Furness,* 526 N.E.2d 947 (Ill. App. 5 Dist. 1988) Note: In *People v. Jebelian,* 561 N.E.2d 1079 (Ill.App. 3 Dist. 1990), the court raised the possibility that HGN test results were not evidence, but the court made no specific holding on this issue. Nevertheless, in another appellate court HGN test results were admitted into evidence at a DWI trial based on the reasoning that they represented observed "behavior" and, therefore, could be used without a scientific foundation to establish whether the defendant was under the influence of alcohol. However, such evidence could not be used to determine a specific alcohol concentration. *People v. Buening,* 592 N.E.2d 1222 (Ill.App. 5 Dist. 1992) In another case, the decision of the *Buening* court was supported. However, the court also held that HGN test results "are not conclusive evidence of intoxication" but are only one of several factors which must be considered to determine if a person was under the influence of alcohol. *People v. Wiebler,* 640 N.E.2d 24 (Ill.App. 3 Dist. 1994)

Iowa. The results of an HGN test could be admitted into evidence at a DWI trial to prove the intoxication of a driver. Note: HGN test results, however, were not used to determine a specific alcohol concentration. The court considered the HGN test to be one of the standard field sobriety tests law enforcement officers administer to persons suspected of a DWI offense. The officer, in this case, was properly trained to administer the HGN test and other field sobriety. These tests that are especially designed to assist an officer's observations in determining if a person is intoxicated. The court felt that the officer did not have to qualify as an expert witness because the observations of intoxication obtained from the HGN test results were objective in nature. Therefore, there was no need that an officer be specially qualified to be

able to interpret such results. The Iowa court based its decision to a large degree on *State v. Negal,* 506 N.E.2d 285 (Ohio App. 1986). *State v. Murphy,* 451 N.W.2d 154 (Iowa 1990)**. Note: The *Murphy* case was indirectly affirmed in *State v. Edman,* 452 N.W.2d 169 (Iowa 1990)**.

Kansas. The court held that HGN test results could not be admitted into evidence at a DWI trial. The court felt that the HGN test was scientific in nature and that, as a result, it was not the same as other field sobriety tests. In order to be admissible, therefore, the HGN test will have to satisfy the *Frye** test. *State v. Witte,* 836 P.2d 1110 (Kan. 1992)**

Louisiana. The court held that the "HGN test meets the standards of admissibility in *Frye** and, a proper foundation, may be admitted as evidence of intoxication." 561 So.2d at 887 Note: The court did not directly address the issue of whether HGN test results could be admitted into evidence at a DWI trial to establish a specific BAC level. *State v. Armstrong,* 561 So.2d 883 (La.App. 2 Cir. 1990) (writ denied by the Louisiana Supreme Court, 568 So.2d 1077 (La. 1990)), and *State v. Breiting,* 623 So.2d 23, (La.App. 1 Cir. 1993)

Minnesota. Using the *Frye** standard, the results of an HGN test can be admitted into evidence at a trial of a person charged with driving while under the influence of drugs. The HGN test was part of the 12 step protocol used by law enforcement officers, who have been trained as Drug Recognition Experts, to determine if a person should be arrested for DWI drugs. *State v. Klawitter,* 518 N.W.2d 577 (Minn. 1994)**

Missouri. The results of an HGN test can be admitted into evidence as proof of intoxication. It is interesting to note that, even though the court held that the results of the test could not be admitted to establish a specific alcohol concentration, it, nevertheless, held that a law enforcement officer could testify as to their experience concerning how a person's performance on the HGN test compares with breathalyser test results that indicated an alcohol concentration of 0.10 or more. The court based its decision on the *Frye** rule. *State v. Hill,* 865 S.W.2d 702 (Mo.App. W.D. 1993).

Montana. HGN test results may be admitted into evidence at a DWI trial. The court did not follow the general acceptance rule for scientific evidence, the *Frye** test, in reaching the holding in this case. Using more "liberalized" rules of evidence, the court felt that all scientific evidence should be admitted unless it is "exaggerated popular opinion" and likely to be prejudicial. *State v. Clark,* 762 P.2d 853 (Mont. 1988)**.

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Nebraska. It was error to admit the HGN test results into evidence at a DWI trial. The court felt that the State had not established the scientific reliability of the test via a proper foundation. Note: Nevertheless, the court held that such admission was not prejudicial to the defendant and upheld his DWI conviction. There was other evidence that indicated the defendant's guilt. *State v. Borchardt,* 395 N.W.2d 551 (Neb. 1986)**.

New York. In a DWI case related to driving while under the influence of drugs, the court held that HGN test results were admissible. The court felt that the HGN test met the *Frye** standard for admissibility. *People v. Quinn,* 580 N.Y.S.2d 818 (Dist.Ct. 1991)

North Dakota. The results of an HGN test can be admitted into evidence at a DWI trial provided it is a part of the standard field sobriety tests. *City of Fargo v. McLaughin,* 512 N.W.2d 700 (N.D. 1994)**

Ohio. The State's supreme court has held that the results of an HGN test could be used (1) to establish probable cause of a DWI arrest and (2) as evidence at a DWI trial to prove that a person was driving a motor vehicle while under the influence of alcohol. However, the court also held that the results of an HGN test could not be used to prove a specific alcohol concentration. *State v. Bresson,* 554 N.E.2d 1330 (Ohio 1990)**, *Columbus v. Anderson,* 600 N.E.2d 712 (OhioApp. 10 dist. 1991), and *State v. Scott,* 606 N.E.2d 1023 (OhioApp. 3 Dist. 1992). Note: In an earlier decision, the Ohio Court of Appeals held that the results of an HGN test could be admitted into evidence at a DWI trial. The court reasoned that the HGN test was just another "field sobriety test" and, as such, a police officer could testify as to their observations while conducting the test without the need for them to be qualified as an expert witness. *State v. Negal,* 506 N.E.2d 285 (Ohio App. 1986).

Oklahoma. The court felt that HGN test results could not be admitted into evidence because the HGN test had not met the *Frye** standard. *Yell v. State,* 856 P.2d 996 (Okl.Cr. 1993)**

Oregon. The Oregon Court of Appeals has held that the results of an HGN test to admitted into evidence. I.e., law enforcement officers may now testify as to the defendants' reactions to the test and what the test meant to the officers. *State v. O'Key,* 858 P.2d 904 (Or.App. 1993) This decision reversed a prior one by this court on the same subject. *State v. Reed,* 732 P.2d 66 (Or. App. 1987) Note: An HGN test is considered a type of field sobriety test. Such tests are considered searches under Oregon law. *State v. Nagel,* 880 P.2d 451 (Or. 1994)

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Pennsylvania. HGN test results could not be admitted into evidence at a DWI trial. The court held that the State had failed to "establish an adequate foundation for the admission of the test results." *Com. v. Miller,* 532 A.2d 1186 (Pa.Super. 1987), *Com. v. Apollo,* 603 A.2d 1023 (Pa.Super. 1992), and *Com. v. Moore,* 635 A.2d 625 (Pa.Super. 1993)

South Carolina. The court felt that the HGN test was one of the field sobriety tests. The results of the HGN test could be admitted into evidence in conjunction with the evidence obtained from other field sobriety tests. *State v. Sullivan,* 426 S.E.2D 766 (S.C. 1993)**

Texas. HGN test results could be admitted into evidence at a DWI trial to prove intoxication. *Emerson v. State,* 880 S.W.2d 759 (Tex.Cr.App. 1994)**

Washington. In order to be admissible, HGN must be shown to meet generally accepted scientific principles. The court used the *Frye** standard. *State v. Cissne,* 865 P.2d 564 (Wa.App.Div. 3 1994)

West Virginia. The court felt that, if the HGN test is proven reliable, its results could be admitted into evidence to prove that a driver was under the influence. However, HGN test results could not be used as a measure of a person's alcohol concentration. Again, as in other States, HGN test results are not recognized in the statutes as a method for determining alcohol concentration. Note: In the specific case before the court, the State offered no evidence of the scientific reliability of the HGN test. *State v. Barker,* 366 S.E.2d 642 (W.Va. 1988)**.

Wisconsin. The court held that HGN test results could be admitted into evidence at a DWI trial. The Wisconsin court's reasoning was similar to that of the Ohio Court of Appeals in *State v. Negal,* 506 N.E.2d 285 (Ohio App. 1986). The court considered that HGN test results were "merely behavioral observations based upon the officer's training and experience. It required little more expertise than is acquired by anyone who observes unusual behavior in persons suspected of drinking intoxicants." The court disagreed with the defendant's argument that the HGN test involved scientific principles such that it was necessary for the witness to be a qualified professional. *Wisconsin v. Peters,* 419 N.W.2d 575 (unpublished limited precedent opinion) (Wis. App. Dist. 3 1987), & *State v. Keller,* 1995 Wisc. App. LEXIS 446 (Wis.App. 1990), HGN test results were used as evidence of probable cause of a drunk driving offense. However, in this published opinion, the scientific reliability of this test was not an issue before the court.

United States. HGN test results could be admitted into evidence at a DWI trial as part of the results of a series of tests performed on a driver to determine if they were under the influence of alcohol. There was no indication that the results of the HGN test were used to establish a specific alcohol concentration. Note: The driver, in this case, was charged with violating Federal regulations that prohibit a person from operating a motor vehicle on Federal park lands while under the influence of alcohol. *U.S. v. Van Griffin,* 874 F.2d 634 (9th Cir. 1989) Comment: Both the U.S. Supreme Court and the U.S. Court of Appeals for the Fourth circuit have mentioned in opinions that law enforcement officers have used the HGN test as a field sobriety test. These courts, however, made no determinations as to the reliability of the HGN test or to the admissibility of the test's results into evidence at a DWI trial. *Pennsylvania v. Muntiz,* 496 U.S. 582, 110 S.Ct. 638, 110 L.Ed.2d 528 (1990), and *U.S. v. Reid,* 929 F.2d 990 (4th Cir. 1991)

**Frye v. United States,* 293 F. 1013 (D.C. Ct. of App. 1923) In this case, the court held, that before a scientific principle could be admitted into evidence, it "must be sufficiently established to have gained general acceptance in the particular field in which it belongs." 293 F. at 1014 The U.S. Supreme Court has recently held that the *Frye* standard does not apply to the admission of scientific expert testimony in cases tried in Federal courts. Instead, the Court held that this standard has been superseded by Federal Rule of Evidence 702. *Daubert v. Merrell Dow Pharmaceuticals,* ____U.S.____, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993)
**Opinion of the State's highest court.

ATTACHMENT B

SCIENTIFIC PUBLICATIONS AND RESEARCH
REPORTS ADDRESSING NYSTAGMUS

1. Anderson, Schweitz & Snyder, Field Evaluation of Behavioral Test Battery for DWI, U.S. Dept. of Transportation Rep. No. DOT-HS-806-475 (1983) (field evaluation of the field sobriety test battery (HGN, one-leg stand, and walk and turn) conducted by police officers from four jurisdictions indicated that the battery was approximately 80% effective in determining BAC above and below .10 percent).

2. Aschan, Different Types of Alcohol Nystagmus, 140 ACTA OTOLARYNGOL SUPP. 69 (Sweden 1958) ("From a medico-legal viewpoint, simultaneous recording of AGN (Alcohol Gaze Nystagmus) and PAN (positional alcoholic nystagmus) should be of value, since it will show in which phase the patient's blood alcohol curve is...").

3. Aschan & Bergstedt, Positional Alcoholic Nystagmus in Man Following Repeated Alcohol Doses, 80 ACTA OTOLARYNGOL SUPP. 330 (Sweden 1975) (abstract available on DIALOG, file 173: Embase 1975-79) (degree of intoxication influences both PAN I and PAN II).

4. Aschan, Bergstedt, Goldberg & Laurell, Positional Nystagmus in Man During and After Alcohol Intoxication, 17 Q.J. OF STUD. ON ALCOHOL, Sept. 1956, at 381. Study distinguishing two types of alcohol-induced nystagmus, PAN (positional alcoholic nystagmus) I and PAN II, found intensity of PAN I, with onset about one-half hour after alcohol ingestion, was proportional to amount of alcohol taken.

5. Baloh, Sharma, Moskowitz & Griffith, Effect of Alcohol and Marijuana on Eye Movements, 50 AVIAT. SPACE ENVIRON. MED., Jan 1979, at 18 (abstract available on DIALOG, file 153: Medline 1979-79) (smooth pursuit eye movement effects of alcohol overshadowed those of marijuana).

6. Barnes, The Effects of Ethyl Alcohol on Visual Pursuit and Suppression of the Vestibulo-Ocular Reflex, 406 ACTA OTOLARYNGOL SUPP. 161 (Sweden 1984) (ethyl alcohol disrupted visual pursuit eye movement by increasing number of nystagmic "catch-up saccades").

7. Burns & Moskowitz, Psychophysical Tests for DWI Arrest, U.S. Dept. of Transportation Rep. No. DOT-HS-802-424 (1977) (recommended the three-test battery developed by SCRI (one-leg stand, walk and turn, and HGN) to aid officers in discriminating BAC level).

8. Church & Williams, Dose- and Time-Dependent Effects of Ethanol, 54 ELECTROENCEPHALOGRAPHY & CLIN. NEUROPHYSIOL., Aug. 1982, at 161 (abstract available on DIALOG, file 11: Psychinfo 1967-85 or file 72: Embase 1982-85) (positional alcohol nystagmus increased with dose levels of ethanol).

9. Compton, Use of the Gaze Nystagmus Test to Screen Drivers at DWI Sobriety Checkpoints, U.S. Dept. of Transportation (1984) (field evaluation of HGN test administered to drivers through car window in approximately 40 seconds: "the nystagmus test scored identified 95% of the impaired drivers" at 2; 15% false positive for sober drivers, id.).

10. Fregly, Bergstedt & Graybiel, Relationships Between Blood Alcohol, Positional Alcohol Nystagmus and Postural Equilibrium, 28 Q.J. OF STUD. ON ALCOHOL, March 1967, at 11, 17 (declines from baseline performance levels correlated with peak PAN I responses and peak blood alcohol levels).

11. Goldberg, Effects and After-Effects of Alcohol, Tranquilizers and Fatigue on Ocular Phenomena, ALCOHOL AND ROAD TRAFFIC 123 (1963) (of different types of nystagmus, alcohol gaze nystagmus is the most easily observed).

12. Helzer, Detection DUIs Through the Use of Nystagmus, LAW AND ORDER, Oct. 1984, at 93 (nystagmus is "a powerful tool for officers to use at roadside to determine BAC of stopped drivers...(O)fficers can learn to estimate BACs to within an average of 0.02 percent of chemical test readings." Id. at 94).

13. L.R. Erwin, DEFENSE OF DRUNK DRIVING CASES (3d ed. 1985) ("A strong correlation exists between the BAC and the angle of onset of (gaze) nystagmus." Id. at 8.15A(3).

14. Lehti, The Effect of Blood Alcohol Concentration on the Onset of Gaze Nystagmus, 136 BLUTALKOHOL 414 (West Germany 1976) (abstract available on DIALOG, file 173: Embase 1975-79) (noted a statistically highly significant correlation between BAC and the angle of onset of nystagmus with respect to the midpoint of the field of vision).

15. Misoi, Hishida & Maeba, Diagnosis of Alcohol Intoxication by the Optokinetic Test, 30 Q.J. OF STUD. ON ALCOHOL 1 (March-June 1969) (optokinetic nystagmus, ocular adaptation to movement of object before eyes, can also be used to detect central nervous system impairment caused by alcohol. Optokinetic nystagmus is inhibited at BAC of only .051 percent and can be detected by optokinetic nystagmus test. Before dosage subjects could follow a speed of 90 degrees per second; after, less than 70 degrees per second).

16. Murphree, Price & Greenberg, Effect of Congeners in Alcohol Beverages on the Incidence of Nystagmus, 27 Q.J. OF STUD. ON ALCOHOL, June 1966, at 201 (positional nystagmus is a consistent, sensitive indicator of alcohol intoxication).

17. Nathan, Zare, Ferneau & Lowenstein, Effects of Congener Differences in Alcohol Beverages on the Behavior of Alcoholics, 5 Q.J. OF STUD. ON ALCOHOL SUPP., may 1970, at 87 (abstract available on DIALOG, file 11: Psychinfo 1967-85) (incidence of nystagmus and other nystagmoid movements increased with duration of drinking).

18. Norris, The Correlation of Angle of Onset of Nystagmus With Blood Alcohol Level: Report of a Field Trial, CALIF. ASS'N CRIMINALISTICS NEWSLETTER, June 1985, at 21 (The relationship between the ingestion of alcohol and the inset of various kinds of nystagmus "appears to be well documented." Id. "While nystagmus appears to be useful as a roadside sobriety test, at this time, its use to predict a person's blood alcohol level does not appear to be warranted." Id. at 22).

19. Nuotto, Palva & Seppala, Naloxone Ethanol Interaction in Experimental and Clinical Situations, 54 ACTA PHARMACOL. TOXICOL. 278 (1984) (abstract available on DIALOG, file 5: Biosis Previews 1981-86) (ethanol alone dose-dependently induced nystagmus).

20. Oosterveld, Meineri & Paolucci, Quantitative Effect of Linear Acceleration on Positional Alcohol Nystagmus, 45 AEROSPACE MEDICINE, July 1974, at 695 (G-loading brings about PAN even when subject has not ingested alcohol; however when subjects ingested alcohol, no PAN was found when subjects were in supine position, even with G-force at 3).

21. Penttila, Lehti & Lonnqvist, Nystagmus and Disturbances in Psychomotor Functions Induced by Psychotropic Drug Therapy, 1974 PSYCHIAT. FENN. 315 (abstract available on DIALOG, file 173: Embase 1975-79) (psychotropic drugs induce nystagmus).

22. Rashbass, The Relationship Between Saccadic and Smooth Tracking Eye Movements, 159 J. PHYSIOL. 326 (1961) (barbiturate drugs interfere with smooth tracking eye movement).

23. Savolainen, Riihimaki, Vaheri & Linnoila, Effects of Xylene and Alcohol on Vestibular and Visual Functions in Man, SCAND. J. WORK ENVIRON. HEALTH 94 (Sweden 1980) (abstract available on DIALOG, file 172: Embase 1980-81 on file 5: Biosis Previews 1981-86) (the effects of alcohol on vestibular functions (e.g., positional nystagmus) were dose-dependent).

24. Seelmeyer, Nystagmus, A Valid DUI Test, LAW AND ORDER, July 1985, at 29 (horizontal gaze nystagmus test is used in "at least one law enforcement agency in each of the 50 states" and is "a legitimate method of establishing probable cause." Id.).

25. Tharp, Burns & Moskowitz, Circadian Effects on Alcohol Gaze Nystagmus (paper presented at 20th annual meeting of Society for Psychophysiological Research), abstract in 18 PSYCHOPHYSIOLOGY, March 1981 (highly significant correlation between angle of onset of AGN and BAC).

26. Tharp, Burns & Moskowitz, Development and Field Test of Psychophysical Tests for DWI Arrests, U.S. Dept. of Transportation Rep. No. DOT-HS-805-864 (1981) (standardized procedures for administering and scoring the SCRI three-test battery; participating officers able to classify 81% of volunteers above or below .10).

27. Umeda & Sakata, Alcohol and the Oculomotor System, 87 ANNALS OF OTOLOGY, RHINOLOGY & LARYNGOLOGY, May-June 1978, at 392 (in volunteers whose "caloric eye tracking pattern" (CETP) was normal before alcohol intake, influence of alcohol on oculomotor system appeared consistently in the following order: (1) abnormality of CETP, (2) positional alcohol nystagmus, (3) abnormality of eye tracking pattern, (4) alcohol gaze nystagmus).

28. Wilkinson, Kime & Purnell, Alcohol and Human Eye Movement, 97 BRAIN 785 (1974) (oral dose of ethyl alcohol impaired smooth pursuit eye movement of all human subjects).

29. Zyo, Medico-legal and Psychiatric Studies on the Alcohol Intoxicated Offender, 30 JAPANESE J. OF LEGAL MED., No. 3, 1976, at 169 (abstract available on DIALOG, file 21: National Criminal Justice Reference Service 1972-85) (recommends use of nystagmus test to determine somatic and mental symptoms of alcohol intoxication as well as BAC).

ATTACHMENT C

IN THE SUPREME COURT OF THE STATE OF ARIZONA.
En Banc

THE STATE OF ARIZONA, Petitioner, v. THE SUPERIOR COURT OF THE STATE OF ARIZONA, in and for the COUNTY OF COCHISE, and the HON. JAMES L. RILEY, DIVISION III, Respondent, and FREDERICK ANDREW BLAKE, Real Party in Interest.	No. 18343-PR Court of Appeals No. 2 CA-SA 0254 Cochise County No. 11684

Appeal from Special Action
Court of Appeals, Division Two

REMANDED

Opinion of the Court of Appeals, Division Two,
___ Ariz. ____, ___ P.2d ____ (1985)
Affirmed

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FELDMAN, Justice

Frederick Andrew Blake, real party in interest, sought review of an opinion of the court of appeals that vacated the trial court's dismissal of his prosecution. State v. Superior Court (2 CA-SA 0254, filed July 25, 1985). We granted review because this is a case of first impression which presents significant issues of statewide importance to law enforcement. Rule 23, Ariz.R.Civ.App.P. 17A A.R.S. We have jurisdiction under Ariz. Const. art. 6, § 5(3) and A.R.S. § 12-120.24. The issues raised are

1. whether the horizontal gaze nystagmus test is sufficiently reliable to establish probable cause for arrest for DUI, and

2. whether horizontal gaze nystagmus test results are sufficiently reliable to be introduced in evidence at trial.

FACTS

In the early morning hours of March 18, 1985, Frederick Blake was driving a car on State Route 92, south of Sierra Vista. He was stopped by Officer Hohn who had observed the vehicle meandering within its lane, and who therefore suspected Blake of driving under the influence of alcohol. Noting, also, that Blake's appearance and breath indicated intoxication, the officer had Blake perform a battery of six field sobriety tests, including the horizontal gaze nystagmus (HGN) test. Nystagmus is an involuntary jerking of the eyeball. The jerking may be aggravated by central nervous system depressants such as alcohol

or barbiturates. See THE MERCK MANUAL OF DIAGNOSIS AND THERAPY 1980 (14th ed. 1982). Horizontal gaze nystagmus is the inability of the eyes to maintain visual fixation as they are turned to the side.

In the HGN test the driver is asked to cover one eye and focus the other on an object (usually a pen) held by the officer at the driver's eye level. As the officer moves the object gradually out of the driver's field of vision toward his ear, he watches the driver's eyeball to detect involuntary jerking. The test is repeated with the other eye. By observing (1) the inability of each eye to track movement smoothly, (2) pronounced nystagmus at maximum deviation and (3) onset of the nystagmus at an angle less than 45 degrees in relation to the center point, the officer can estimate whether the driver's blood alcohol content (BAC) exceeds the legal limit of .10 percent. Officer Hohn had been trained in the use of the HGN test and certified to administer it by the Arizona Law Enforcement Officer Advisory Council (ALEOC) pursuant to A.R.S. § 41-1822(4).

Blake's performance of the first three standard field sobriety tests was "fair" and did not amount to probable cause to arrest Blake for DUI. As a result of the HGN test, however, the officer estimated that Blake had a BAC in excess of .10 percent. Blake's performance on the last two tests strengthened his conclusion. Having also smelled a strong odor of alcohol on Blake's breath and noticed Blake's slurred speech and bloodshot, watery and dilated eyes, Officer Hohn then arrested Blake on a

charge of felony DUI in violation of A.R.S. § 28-692. Hohn then transported Blake to the police station where he administered an intoxilyzer test which showed that Blake had a BAC of .163 percent.

Blake made two motions to the trial court: to dismiss the prosecution for lack of probable cause to arrest and to preclude the admission of testimony of the HGN test and its results at trial. At the evidentiary hearing on these two motions the state presented evidence regarding the principles and use of HGN testing from Dr. Marcelline Burns, a research psychologist who studies the effect of alcohol on behavior, Sgt. Richard Studdard of the Los Angeles Police Department, and Sgt. Jeffrey Raynor and Officer Robert Hohn of the Arizona Department of Public Safety.

Dr. Burns, Director the Southern California Research Institute (SCRI or Institute) testified that the Institute had received research contracts from the National Highway Traffic Safety Administration (NHTSA) to develop the best possible field sobriety tests. The result of this research was a three-test battery, which included the walk and turn, the one-leg stand, and the HGN. This battery could be administered without special equipment, required no more than five minutes in most cases, and resulted in 83 percent accuracy in determining BAC above and below .10 percent. Dr. Burns testified that all field sobriety tests help the police officers to estimate BAC. The HGN test is based on the known principle that certain toxic substances, including alcohol, cause nystagmus. The SCRI study found HGN to

be the best single index of intoxication, because it is an involuntary response. BAC can even be estimated from the angle of onset of the involuntary jerking: 50 degrees minus the angle of the gaze at the onset of eye oscillation equals the BAC.[1] Dr. Burns testified that the HGN test had been accepted as valid by the highway safety field, including the NHTSA, Finnish researchers, state agencies such as the California Highway Patrol, Arizona Highway Patrol, Washington State Police, and numerous city agencies. Finally, the state offered in evidence an HGN training manual developed by the NHTSA for its nationwide program to train law enforcement officers. Both the manual and training program were based on the Institute's studies.

Sgt. Studdard is currently a supervisor in charge of DUI enforcement for the City of Los Angeles and a consultant to NHTSA on field sobriety testing. Based on his field work administering the HGN test and his participation in double blind studies at the Institute, he testified that the accuracy rate of the HGN test in estimating whether the level of BAC exceeds .10 percent is

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1 Thus, nystagmus at 45° corresponds to a blood alcohol content (BAC) of 0.05%; nystagmus at 40° to a BAC of 0.10%; nystagmus at 35° to a BAC of 0.15%; and nystagmus at 30° to a BAC of 0.20%. See 1 R. ERWIN, DEFENSE OF DRUNK DRIVING CASES (3d ed. 1985) § 8.15A[1]. At BACs above 0.20%, a person's eyes may not be able to follow a moving object. Tharp, Gaze Nystagmus As A Roadside Sobriety Test 6 (unpublished paper available through SCRI). It should be noted however that when officers administer the test they do not necessarily measure the angle of onset; instead they look for three characteristics of high BAC: inability of smooth pursuit, distinct jerkiness at maximum deviation and onset of jerkiness prior to 45°. We do not address the admissibility of quantified BAC estimates based on angle of onset of nystagmus.

between 80 and 90 percent. According to Studdard the margin of inaccuracy is caused by the fact that certain drugs, such as barbiturates, cause the same effects as alcohol. We take notice, however, that nystagmus may also indicate a number of neurological conditions, and the presence of any of these would also affect the accuracy of the HGN-based estimate of blood alcohol content. See infra at 14. Both Sgt. Studdard and Sgt. Raynor, who currently administers the HGN training program for the State of Arizona, testified that the HGN test is especially useful in detecting violations where a driver with BAC over .10 percent is able to pull himself together sufficiently to pass the traditional field sobriety tests and thus avoid arrest and subsequent chemical testing.

Sgt. Raynor testified that the traditional field sobriety tests are not sensitive enough to detect dangerously impaired drivers with BAC between .10 percent and .14 percent and that the police officers thus must permit them to drive on.[2] Sgt. Raynor also testified as to the rigor and requirements of the Arizona training and certification program.

At the close of the evidentiary hearing, the trial court concluded that HGN represented a new scientific principle and was therefore subject to the Frye standard of admissibility. Frye v.

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[2] It is claimed that three times as many drivers on the road have BACs in the .10% to .14% range than in the .15% to .19% range, but those arrested are in the latter group, 2 to 1. Anderson, Schweitz & Snyder, Field Evaluation of a Behavioral Test Battery for DWI, U.S. Department of Transportation Rep. No. DOT HS-806-475 (1983) (included in state's evidence).

United States, 293 F. 1013 (D.C. Cir. 1923). The court ruled the HGN test did not satisfy Frye, was therefore unreliable, and could not form the basis of probable cause. The court granted Blake's motion to dismiss.

The state filed a petition for special action[3] in the court of appeals, which accepted jurisdiction and granted relief. The court of appeals noted that the Frye standard applies only to the admissibility of evidence at trial, not to probable cause for arrest. It stated that probable cause requires only reasonably trustworthy information sufficient to lead a reasonable person to believe that an offense has been committed and that the person to be arrested committed the offense. Slip op. at 4. The court of appeals found HGN sufficiently reliable to provide probable cause. Id. at 10. The court of appeals held that the HGN test satisfied Frye and would be admissible, except that there was insufficient foundation as to the arresting officer's proficiency in administering the test. Id. The court vacated the trial court's order and remanded for further proceedings.

DISCUSSION

1. Was Blake's Arrest Legal?

Blake contends that the trial court correctly dismissed the prosecution after ruling that the HGN test did not meet the Frye

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[3] In Arizona, relief formerly obtained by writs of mandamus or prohibition is now obtained by "Special Action". See Rule 1, Arizona Rules of Procedure for Special Actions, 17A A.R.S.

standard. Because probable cause was established by "an unreliable test, the HGN, which has not had its trustworthiness corroborated," the arrest was illegal, and later discovered evidence, such as the intoxilyzer results, cannot be used in evidence.

The Pima County Public Defender, appearing amicus, argues that any roadside sobriety test is a full search and must, therefore, be founded on probable cause. Because the arresting officer testified that he did not have probable cause to arrest even after the performance of the traditional field tests, amicus argues that he did not have the requisite probable cause to administer the HGN test. For this contention amicus relies on People v. Carlson, 677 P.2d 310, 317 (Colo. 1984), in which the Colorado Supreme Court held that "roadside sobriety testing constitutes a full 'search' in the constitutional sense of that term and therefore must be supported by probable cause."

For the reasons set forth below we agree with both of the state's arguments. First, administration of roadside, performance-based sobriety tests does not require probable cause. Second, neither evidence that forms the basis for probable cause nor that required to raise a reasonable suspicion need be tested under the Frye rule.

Did the Stop Followed by Field Sobriety Tests Violate the Fourth Amendment?

The fourth amendment to the United States Constitution guarantees the right to be secure against unreasonable search and

seizure. This guarantee requires arrests to be based on probable cause and permits limited investigatory stops based only on an articulable reasonable suspicion of criminal activity. Terry v. Ohio, 392 U.S. 1, 88 S. Ct. 1868 (1968). Such stops are permitted although they constitute seizures under the fourth amendment. See State v. Graciano, 134 Ariz. 35, 37, 653 P.2d 683, 685 (1982). Officer Hohn testified that he stopped Blake because Blake's car had been weaving in its lane, and he suspected the driver to be under the influence of alcohol. We find that Blake's weaving was a specific and articulable fact which justified an investigative stop. The next question is whether this reasonable suspicion also justified compelling Blake to perform roadside sobriety tests.

An investigatory stop may include a safety frisk for weapons as well as questions to dispel the officer's reasonable suspicions. Terry, 392 U.S. at 22, 88 S. Ct. at 1880. While all this may be done without the probable cause required for arrest, an arrest may occur before the moment the police officer either accuses the suspect of a specific offense or formally takes him into custody. It may be deemed to have occurred substantially before that time, perhaps during questioning. See State v. Winegar (S. Ct. No. 6131, slip op. at 17, filed December 4, 1985).

In this case we confront the difficult area between the physical stop of defendant and the articulation of the charge. We must draw the line, however fine, between investigatory questioning that is permissible before the arrest and acts

permissible only after the charges have been made. See People v. Milham, 159 Cal. App. 3d 487, 500, 205 Cal. Rptr. 688, 697 (1984) (at scene of fatal car accident, field sobriety tests were investigatory). In a sense this is a question of first impression. Our cases in the past have presumed that roadside sobriety tests are incident to the stop, and that chemical tests, such as the intoxilyzer, are incident to the arrest. See Fuenning v. Superior Court, 139 Ariz. 590, 680 P.2d 121 (1983).

Any examination of a person with a view to discovering evidence of guilt to be used in a prosecution of a criminal action is a search. The fourth amendment does not prohibit all warrantless searches, only those that are unreasonable. State v. Hutton, 110 Ariz. 339, 341, 519 P.2d 38, 40 (1974); State v. Grijalva, 111 Ariz. 476, 478, 533 P.2d 533, 535, cert. denied, 423 U.S. 873, 96 S. Ct. 141 (1975). Whether the fourth amendment permits a warrantless search supported only by reasonable suspicion depends on the nature of both the governmental interest and the intrusion into a citizen's personal security. State v. Grijalva, supra. Thus, the necessity of the search is balanced against the invasion of the privacy of the citizen that the search entails. Id.

We have held that the state has a compelling interest in removing drunk drivers from the highways. Fuenning v. Superior Court, 139 Ariz. at 595, 680 P.2d at 126. The legislature has recognized the threat of drunk drivers and enacted A.R.S. § 28-692(B), which makes it per se illegal to drive with a BAC of

.10 percent or more, a level at which virtually everyone's driving ability is impaired. Id. Against this compelling state interest we are to weigh the substantiality of the intrusion or inconvenience of roadside sobriety tests that measure physical performance of the suspected drunk driver.

In Terry the Supreme Court stated:

> We merely hold today that where a police officer observes unusual conduct which leads him reasonably to conclude in light of his experience that criminal activity may be afoot and that persons with whom he is dealing may be armed and presently dangerous, where in the course of investigating this behavior he identifies himself as a policeman and makes reasonable inquiries, and nothing in the initial stages of the encounter serves to dispel his reasonable fear for his own or others' safety, he is entitled for the protection of himself and others in the area to conduct a carefully limited search of the outer clothing of such persons in an attempt to discover weapons which might be used to assault him.

392 U.S. at 30, 88 S. Ct. at 1884.

We think Terry is on point: the threat to public safety posed by a person driving under the influence of alcohol is as great as the threat posed by a person illegally concealing a gun. If nothing in the initial stages of the stop serves to dispel the highway patrol officer's reasonable suspicion, fear for the safety of others on the highway entitles him to conduct a "carefully limited search" by observing the driver's conduct and performance of standard, reasonable tests to discover whether the driver is drunk. The battery of roadside sobriety tests is such a limited search. The duration and atmosphere of the usual traffic stop make it more analogous to a so-called Terry stop

than to a formal arrest. See Berkemer v. McCarty, ___ U.S. ___, 104 S. Ct. 3138, 3150 (1984). We refuse to adopt the rule of People v. Carlson, supra.

We hold, therefore, that roadside sobriety tests that do not involve long delay or unreasonable intrusion, although searches under the fourth amendment, may be justified by an officer's reasonable suspicion (based on specific, articulable facts) that the driver is intoxicated. We further find that Blake's erratic driving, appearance and smell of alcohol were specific, articulable facts which gave the officer sufficient grounds to administer roadside sobriety tests, including HGN.

Is the HGN Test Sufficiently Reliable to Establish Probable Cause for Arrest?

Observing Blake's performance of the tests, the officer put him under arrest and took him to the station for chemical testing for BAC. Blake argues the arrest was invalid for lack of probable cause and that the information obtained by later chemical testing is therefore inadmissible.

Probable cause may not rest on mere suspicion but neither must it rest on evidence sufficient to convict.

> In dealing with probable cause ... we deal with probabilities. These are not technical; they are the factual and practical considerations of everyday life on which reasonable [people], not legal technicians, act.

Brinegar v. United States, 338 U.S. 160, 175, 69 S. Ct. 1302, 1310 (1949). Information sufficient to raise a suspicion of criminal behavior by definition need not pass tests of

admissibility under our rules of evidence. It has long been the rule that an arresting officer has probable cause if he has reasonably trustworthy information sufficient to lead a responsible person to believe an offense has been committed and that the person to be arrested committed it. See id. at 175-76, 69 S. Ct. at 1310-11; State v. Nelson, 129 Ariz. 582, 586, 633 P.2d 391, 395 (1981). We now must determine whether the HGN test provides reasonably trustworthy information, sufficient to lead a reasonable person to believe a driver is intoxicated.

Nystagmus is a well known physiological phenomenon, defined and described in such tomes as WEBSTER'S NEW COLLEGIATE DICTIONARY (1980), DORLAND'S ILLUSTRATED MEDICAL DICTIONARY (25th ed. 1974), 7 ENCYCLOPAEDIA BRITANNICA, MICROPAEDIA (15th ed. 1974) and STEDMAN'S MEDICAL DICTIONARY (5th Lawyer's ed. 1982). That it can be caused by ingestion of alcohol is also accepted in medical literature.

> Jerk nystagmus ... is characterized by a slow drift, usually away from the direction of gaze, followed by a quick jerk of recovery in the direction of gaze. A motor disorder, it may be congenital or due to a variety of conditions affecting the brain, including ingestion of drugs such as alcohol and barbiturates, palsy of lateral or vertical gaze, disorders of the vestibular apparatus and brainstem and cerebellar dysfunction.

THE MERCK MANUAL OF DIAGNOSIS AND THERAPY 1980 (14th ed. 1982) (emphasis added). Even before the Institute's federal grant, the relationship between BAC and nystagmus was recognized by some highway safety agencies as a tool to detect those illegally driving under the influence of alcohol. Burns & Moskowitz,

Psychophysical Tests for DWI Arrest, U.S. Department of Transportation Rep. No. DOT-HS-802-424 (1977), at 80. In its federally funded study, the Institute discovered that of the six most sensitive field sobriety tests being used by the police around the country, the HGN was the most reliable and precise indicator of the proscribed level of BAC. Id. at 39.

Judicial assessment of whether the arresting officer had probable cause need not rest, however, on whether the information relied on is universally known. The arresting officer is entitled to draw specific reasonable inferences from the facts in light of his own experience, as well as the transmitted experience of other police officers. See Terry v. Ohio, supra; State v. Ochoa, 112 Ariz. 582, 585-86, 544 P.2d 1097, 1100-01 (1976). In this case Officer Hohn's experience included training in DUI detection and field administrations of the HGN test. His administration of the test did not cause him to arrest everyone he tested. He testified that although he had logged over 150 field administrations of the test battery, he had made only six DUI arrests. On the evening of Blake's arrest Officer Hohn had made between eight and twelve DUI stops, had given the battery to all, but found probable cause to arrest only Blake.

Testimony also showed that Officer Hohn's personal experience is the result of the transmitted experience of countless other trained highway safety officers. Dr. Burns testified that in a survey of the first 800 officers trained, over 80 percent rated HGN as the most sensitive roadside sobriety test and found the test battery to have increased their accuracy in recognizing the

impaired driver. Sgt. Studdard, who estimated he had administered the HGN test on the street to several thousand individuals, had seen only one or two people in whom the nystagmus did not correlate to the BAC. He testified that he had trained numerous agencies in Arizona, Michigan, New York, Arkansas, Louisiana, North Carolina and Maryland in the use of HGN. He found that the officers' accuracy rate in determining BAC was between 80 and 90 percent.

We conclude that the testimony presented at the evidentiary hearing regarding the reliability of the HGN test establishes that in the hands of a trained officer the test is reasonably trustworthy and may be used to help establish probable cause to arrest. We further find that Blake's driving, his "fair performance" on the traditional sobriety tests; the smell of alcohol on his breath, his appearance and his score on the HGN test could lead a reasonable person to believe Blake was driving with a BAC in excess of .10 percent in violation of A.R.S. § 28-962. Taken together there was more than sufficient evidence to establish probable cause. People v. Milham, 159 Cal. App. 3d 487, 495, 205 Cal. Rptr. 688, 693 (1984); People v. Trevisanut, 160 Cal. App. 3d Supp. 12, ___, 207 Cal. Rptr. 921, 924 (Cal. Super. 1984). Because the trial court ruled that admissibility under Frye was a prerequisite for evidence used to establish probable cause, we vacate the trial court's order of dismissal of the case and remand the matter for trial.

technique based upon scientific principles, its reliability is to be measured against the Frye standard. Id. Frye screens out unreliable scientific evidence because under its standard

> it is not enough that a qualified expert, or even several experts, testify that a particular scientific technique is valid; Frye imposes a special burden -- the technique must be generally accepted by the relevant scientific community.

Symposium on Science and Rules of Evidence, 99 F.R.D. 188, 189 (1984) (emphasis in original). Recognizing that judges and juries are not always in a position to assess the validity of the claims made by an expert witness before making findings of fact, Frye guarantees that reliability will be assessed by those in the best position to do so: members of the relevant scientific field who can dispassionately study and test the new theory.

If the scientific principle has gained general acceptance in the particular field in which it belongs, evidence resulting from its application is admissible, "subject to a foundational showing that the expert was qualified, the technique was properly used, and the results were accurately recorded." Collins, 132 Ariz. at 196, 644 P.2d at 1282. To determine whether the HGN test satisfies the test of general acceptance we must (1) identify the appropriate scientific community whose acceptance of the nystagmus principles and validity of the HGN test is required, and (2) determine whether there is general acceptance of both the scientific principle and the technique applying the theory. See Symposium, 99 F.R.D. at 193; M. UDALL & J. LIVERMORE, supra. The admissibility of HGN test results under the Frye standard is an

issue of first impression. Our search has not brought to light any reported American case law ruling on the issue.[4]

The state argues that the relevant scientific community is that of law enforcement and highway safety agencies and behavioral psychologists. Public defender amicus contends that we should disregard these sources and argues that the HGN phenomenon requires assessment by scientists in the fields of neurology, ophthalmology, pharmacology and criminalistics. It claims that narrowing the field deprives the general scientific community of the time needed to evaluate the procedure before it is examined by the legal community. We agree that validation studies must be performed by scientists other than those who have professional and personal interest in the outcome of the evalulation. Collins, 132 Ariz. at 199, 644 P.2d at 1285.

We believe, however, that the relevant scientific community that must be shown to have accepted a new scientific procedure is

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[4] We have discovered two cases that discuss the admissibility of nystagmus on the question of BAC. People v. Loomis, 156 Cal. App. 3d Supp. 16, 203 Cal. Rptr. 767 (Cal. Super. 1984); State v. Nagel, Ohio Ct. App. No. 2100, filed Feb. 5, 1986. In Loomis the superior court held the municipal court had erred in allowing the officer to testify as to his opinion based on training, experience and the number of times he had given the test. The court in dictum then stated that it would also have been error to admit the officer's testimony as an expert opinion because the state had failed to demonstrate that the nystagmus test was reliable by showing it had gained general acceptance in the particular field in which it belongs, as required by Frye. In Nagel, the court of appeals affirmed the trial court's admission of testimony on HGN. Rejecting appellant's argument that it was inadmissible because the testifying officer was not an expert and there was no scientific basis for the HGN test, the court held nystagmus is objectively observable and requires no expert interpretation.

often self-selecting. Scientists who have no interest in a new scientific principle are unlikely to evaluate it, even if a court determines they are part of a relevant scientific community. The HGN test measures a behavioral phenomenon: specifically the effects of alcohol on one aspect of human behavior, the movement of the eye. Thus, it stands to reason that experimental psychologists in the area of behavioral psychology would be interested in verifying the validity of the HGN test and should be included in the relevant scientific community. Similarly, the problem of alcohol's effect on driving ability is a major concern to scientists in the area of highway safety and they, too, should be included.

We disagree with the defendant's implication that those in the field of highway safety or law enforcement are necessarily biased. We believe the National Highway Traffic Safety Administration's interest in funding research to identify the drunk driver is not subject to question in this instance. The NHTSA was addressing a complex problem: every state has either a presumptive or "per se illegal" law that makes reference to BAC (typically .10 percent). Officers whose task it is to remove violators of these laws from the roads may, upon initial suspicion, administer behavioral tests, but until recently the relationship of the tests to specific BAC levels was not well documented. The purpose of NHTSA's program was to develop a test battery to assist officers in discriminating between those drivers who are in violation of these laws and those who are not. Furthermore, it is not to the advantage of law enforcement in the

highway safety field to have an unreliable field sobriety test. It is inefficient to arrest and transport a driver for chemical testing, only to find that he is not in violation of the law. We believe that the work of highway safety professionals and behavioral psychologists who study effects of alcohol on behavior is directly affected by the claims and application of the HGN test, so that both these groups must be included in the relevant scientific community.

We are not forced to come to the same conclusion with respect to neurologists, pharmacologists, ophthalmologists and criminalists. Although it is true that the form of nystagmus that concerns us is the result of a neurological malfunction, we agree with Dr. Burns who testified that "the field of neurology does not concern itself specifically with alcohol effects on performance and even more specifically with field sobriety." She did state, however, that a "very small segment of the neurology community" concerns itself with the effects and has produced some literature. No argument has been made why the fields of pharmacology, ophthalmology and criminalistics (beyond those concerned with detecting violators of DUI laws) should be included in the relevant scientific community and no convincing reason occurs to us. We conclude, therefore, that to determine whether the HGN test satisfies the Frye requirement of general acceptance the appropriate disciplines include behavioral psychology, highway safety and, to a lesser extent, neurology and criminalistics.

We now turn to the question of whether there has been general acceptance of both the HGN test and its underlying principle. The burden of proving general acceptance is on the proponent of the new technique; it may be proved by expert testimony and scientific and legal literature. We have already summarized the expert testimony presented by the state, supra at 3-5. In addition, the state submitted both scientific publications and reports of research done for the United States Department of Transportation. These are listed in Appendix A.

At the evidentiary hearing Blake presented no evidence to refute either the substance of the expert opinion testimony or the contention that it had general acceptance. Blake and public defender amicus instead argued that there is a paucity of literature and that the appropriate scientific disciplines have not yet had the opportunity to duplicate and evaluate Dr. Burns' work.

Our own research is listed in Appendix B. The literature demonstrates to our satisfaction that those professionals who have investigated the subject do not dispute the strong correlation between BAC and the different types of nystagmus. Cf. State v. Valdez, 91 Ariz. 274, 371 P.2d 894 (1962) (concluding that lie detector tests have not been accorded such recognition). Furthermore, those who have investigated the relation between BAC and nystagmus as the eye follows a moving object have uniformly found that the higher the BAC, the earlier the onset of involuntary jerking of the eyeball. Although the publications are not voluminous, they have been before the

relevant communities a considerable period of time for any opposing views to have surfaced. See Appendix B.

Based on all the evidence we conclude there has been sufficient scrutiny of the HGN test to permit a conclusion as to reliability. The "general acceptance" requirement does not necessitate a showing of universal acceptance of the reliability of the scientific principle and procedure. United States v. Brown, 557 F.2d 541, 556 (6th Cir. 1977) (unanimity of scientific opinion is not required); J. RICHARDSON, MODERN SCIENTIFIC EVIDENCE 164 (2d ed. 1974) ("substantial majority" is sufficient to show general acceptance). Neither must the principle and procedure be absolutely accurate or certain. State v. Valdez, 91 Ariz. at 280, 371 P.2d at 898.

We believe that the HGN test satisfies the Frye standard. The evidence demonstates that the following propositions have gained general acceptance in the relevant scientific community: (1) HGN occurs in conjunction with alcohol consumption; (2) its onset and distinctness are correlated to BAC; (3) BAC in excess of .10 percent can be estimated with reasonable accuracy from the combination of the eyes' tracking ability, the angle of onset of nystagmus and the degree of nystagmus at maximum deviation; and (4) officers can be trained to observe these phenomena sufficiently to estimate accurately whether BAC is above or below .10 percent. We therefore hold that, with proper foundation as to the techniques used and the officer's ability to use it (see Collins, 132 Ariz. at 196, 644 P.2d at 1282), testimony of defendant's nystagmus is admissible on the issue of a defendant's

blood alcohol level as would be other field sobriety test results on the question of the accuracy of the chemical analysis.

Our holding does not mean that evidence of nystagmus is admissible to prove BAC of .10 percent or more in the absence of a laboratory chemical analysis of blood, breath or urine. Such a use of HGN test results would raise a number of due process problems different from those associated with the chemical testing of bodily fluids. The arresting officer's "reading" of the HGN test cannot be verified or duplicated by an independent party. See Scales v. City Court of Mesa, 122 Ariz. 231, 594 P.2d 97 (1979). The test's recognized margin of error provides problems as to criminal convictions which require proof of guilt beyond a reasonable doubt. The circumstances under which the test is administered at roadside may affect the reliability of the test results. Nystagmus may be caused by conditions other than alcohol intoxication. And finally, the far more accurate chemical testing devices are readily available.

Our limitation on the use of HGN test results is also consistent with Arizona's DUI statute. When referring to the tests to be administered to determine BAC, the statute speaks in terms of taking blood, urine and breath samples from the defendant for analysis. See A.R.S. § 28-692(H). Clearly, BAC under § 12-692 is to be determined deductively from analysis of bodily fluids, not inductively from observation of involuntary bodily movements.

We also hold, therefore, that regardless of the quality and abundance of other evidence, a person may not be convicted of a

violation of A.R.S. § 28-692(B) without chemical analysis of blood, breath or urine showing a proscribed blood alcohol content pursuant to title 28, article 5 of the Arizona revised statutes. Similarly, the presumption under A.R.S. § 28-692(E)(3) that a defendant was under the influence of intoxicating liquor in violation of subsection (A) must also rest on chemical "analysis of the defendant's blood, urine, breath or other bodily substance," A.R.S. § 28-692(E), as the statute clearly states, and not on a BAC estimate based on nystagmus. Thus, evidence of HGN test results is admissible, as is other evidence in subsection (B) cases, only to corroborate the challenged accuracy of the chemical test results. See Fuenning v. Superior Court, 139 Ariz. at 599, 680 P.2d at 130. It is admissible in subsection (A) cases for the same purpose and, also, as evidence that the driver is "under the influence." It is not admissible in any criminal case as direct independent evidence to quantify blood alcohol content.

CONCLUSION

We find that the horizontal gaze nystagmus test properly administered by a trained police officer is sufficiently reliable to be a factor in establishing probable cause to arrest a driver for violating A.R.S. § 28-692(B). We further find that the horizontal gaze nystagmus test satisfies the Frye test for reliability and may be admitted in evidence to corroborate or attack, but not to quantify, the chemical analysis of the accused's blood alcohol content. It may not be used to establish

the accused's level of blood alcohol in the absence of a chemical analysis showing the proscribed level in the accused's blood, breath or urine. In subsection (A) prosecutions it is admissible, as is other evidence of defendant's behavior, to prove that he was "under the influence."

We approve the court of appeals' opinion, as modified, vacate the trial court's dismissal of the Blake prosecution for violation of A.R.S. § 28-692(B), and remand for proceedings not inconsistent with this opinion.

STANLEY G. FELDMAN, Justice

CONCURRING:

WILLIAM A. HOLOHAN, Chief Justice

FRANK X. GORDON, JR., Vice Chief Justice

JACK D. H. HAYS, Justice

JAMES DUKE CAMERON, Justice

APPENDIX A

1. Anderson, Schweitz & Snyder, Field Evaluation of a Behavioral Test Battery for DWI, U.S. Dept. of Transportation Rep. No. DOT-HS-806-475 (1983) (field evaluation of the field sobriety test battery (HGN, one leg stand, and walk and turn) conducted by police officers from four jurisdictions indicated that battery was approximately 80 percent effective in determining BAC above and below .10 percent).

2. Burns & Moskowitz, Psychophysical Tests for DWI Arrest, U.S. Dept. of Transportation Rep. No. DOT-HS-802-424 (1977) (recommended the three-test battery developed by SCRI (one leg stand, walk and turn, and HGN) to aid officers in discriminating BAC level).

3. Compton, Use of the Gaze Nystagmus Test to Screen Drivers at DWI Sobriety Checkpoints, U.S. Dept. of Transportation (1984) (field evaluation of HGN test administered to drivers through car window in approximately 40 seconds: "the nystagmus test scores identified 95% of the impaired drivers" at 2; 15 percent false positive for sober drivers, id .).

4. 1 R. ERWIN, DEFENSE OF DRUNK DRIVING CASES (3d ed.. 1985) ("A strong correlation exists between the BAC and the angle of onset of [gaze] nystagmus." Id. at § 8.15A[3]).

5. Rashbass, The Relationship Between Saccadic and Smooth Tracking Eye Movements, 159 J. PHYSIOL. 326 (1961) (barbiturate drugs interfere with smooth tracking eye movement).

6. Tharp, Burns & Moskowitz, Development and Field Test of

Psychophysical Tests for DWI Arrests, U.S. Dept. of Transportation Rep. No. DOT-HS-805-864 (1981) (standardized procedures for administering and scoring the SCRI three-test battery; participating officers able to classify 81 percent of volunteers above or below .10 percent).

7. Wilkinson, Kime & Purnell, Alcohol and Human Eye Movement, 97 BRAIN 785 (1974) (oral dose of ethyl alcohol impaired smooth pursuit eye movement of all human subjects).

APPENDIX B

1. Aschan, Different Types of Alcohol Nystagmus, 140 ACTA OTOLARYNGOL SUPP. 69 (Sweden 1958) ("From a medico-legal viewpoint, simultaneous recording of AGN [Alcohol Gaze Nystagmus] and PAN [positional alcoholic nystagmus] should be of value, since it will show in which phase the patient's blood alcohol curve is....").

2. Aschan & Bergstedt, Positional Alcoholic Nystagmus in Man Following Repeated Alcohol Doses, 80 ACTA OTOLARYNGOL SUPP. 330 (Sweden 1975) (abstract available on DIALOG, file 173:Embase 1975-79) (degree of intoxication influences both PAN I and PAN II).

3. Aschan, Bergstedt, Goldberg & Laurell, Positional Nystagmus in Man During and After Alcohol Intoxication, 17 Q. J. OF STUD. ON ALCOHOL, Sept. 1956, at 381. Study distinguishing two types of alcohol-induced nystagmus, PAN (positional alcoholic nystagmus) I and PAN II, found intensity of PAN I, with onset about one-half hour after alcohol ingestion, was proportional to amount of alcohol taken.

4. Baloh, Sharma, Moskowitz & Griffith, Effect of Alcohol and Marijuana on Eye Movements, 50 AVIAT. SPACE ENVIRON. MED., Jan. 1979, at 18 (abstract available on DIALOG, file 153:Medline 1979-79) (smooth pursuit eye movement effects of alcohol overshadowed those of marijuana).

5. Barnes, The Effects of Ethyl Alcohol on Visual Pursuit and Supression of the Vestibulo-Ocular Reflex, 406 ACTA OTOLARYNGOL SUPP. 161 (Sweden 1984) (ethyl alcohol disrupted

visual pursuit eye movement by increasing number of nystagmic "catch-up saccades").

6. Church & Williams, Dose- and Time-Dependent Effects of Ethanol, 54 ELECTROENCEPHALOGRAPHY & CLIN. NEUROPHYSIOL., Aug. 1982, at 161 (abstract available on DIALOG, file 11:Psychinfo 1967-85 or file 72:Embase 1982-85) (positional alcohol nystagmus increased with dose levels of ethanol).

7. Fregly, Bergstedt & Graybiel, Relationships Between Blood Alcohol, Positional Alcohol Nystagmus and Postural Equilibrium, 28 Q. J. OF STUD. ON ALCOHOL, March 1967, at 11, 17 (declines from baseline performance levels correlated with peak PAN I responses and peak blood alcohol levels).

8. Goldberg, Effects and After-Effects of Alcohol, Tranquilizers and Fatigue on Ocular Phenomena , ALCOHOL AND ROAD TRAFFIC 123 (1963) (of different types of nystagmus, alcohol gaze nystagmus is the most easily observed).

9. Helzer, Detecting DUIs Through the Use of Nystagmus, LAW AND ORDER, Oct. 1984, at 93 (nystagmus is "a powerful tool for officers to use at roadside to determine BAC of stopped drivers ... [O]fficers can learn to estimate BACs to within an average of 0.02 percent of chemical test readings." Id. at 94).

10. Lehti, The Effect of Blood Alcohol Concentration on the Onset of Gaze Nystagmus, 136 BLUTALKOHOL 414 (West Germany 1976) (abstract available on DIALOG, file 173:Embase 1975-79) (noted a statistically highly significant correlation between BAC and the angle of onset of nystagmus with respect to the midpoint of the field of vision).

11. Mizoi, Nishida & Maeba, Diagnosis of Alcohol Intoxication by the Optokinetic Test, 30 Q. J. OF STUD. ON ALCOHOL 1 (March-June 1969) (optokinetic nystagmus, ocular adaptation to movement of object before eyes, can also be used to detect central nervous system impairment caused by alcohol. Optokinetic nystagmus is inhibited at BAC of only .051 percent and can be detected by optokinetic nystagmus test. Before dosage subjects could follow a speed of 90 degrees per second; after, less than 70 degrees per second).

12. Murphree, Price & Greenberg, Effect of Congeners in Alcoholic Beverages on the Incidence of Nystagmus, 27 Q. J. OF STUD. ON ALCOHOL, June 1966, at 201 (positional nystagmus is a consistent, sensitive indicator of alcohol intoxication).

13. Nathan, Zare, Ferneau & Lowenstein, Effects of Congener Differences in Alcoholic Beverages on the Behavior of Alcoholics, 5 Q. J. OF STUD. ON ALCOHOL SUPP., May 1970, at 87 (abstract available on DIALOG, file 11:Psycinfo 1967-85) (incidence of nystagmus and other nystagmoid movements increased with duration of drinking).

14. Norris, The Correlation of Angle of Onset of Nystagmus With Blood Alcohol Level: Report of a Field Trial, CALIF. ASS'N CRIMINALISTICS NEWSLETTER, June 1985, at 21 (The relationship between the ingestion of alcohol and the inset of various kinds of nystagmus "appears to be well documented." Id. "While nystagmus appears to be useful as a roadside sobriety test, at this time, its use to predict a person's blood alcohol level does not appear to be warranted." Id. at 22).

15. Nuotto, Palva & Seppala, Naloxone Ethanol Interaction in Experimental and Clinical Situations, 54 ACTA PHARMACOL. TOXICOL. 278 (1984) (abstract available on DIALOG, file 5::Biosis Previews 1981-86) (ethanol alone dose-dependently induced nystagmus).

16. Oosterveld, Meineri & Paolucci, Quantitative Effect of Linear Acceleration on Positional Alcohol Nystagmus, 45 AEROSPACE MEDICINE, July 1974, at 695 (G-loading brings about PAN even when subject has not ingested alcohol; however when subjects ingested alcohol, no PAN was found when subjects were in supine position, even with G-force at 3).

17. Penttila, Lehti & Lonnqvist, Nystagmus and Disturbances in Psychomotor Functions Induced by Psychotropic Drug Therapy, 1974 PSYCHIAT. FENN. 315 (abstract available on DIALOG, file 173:Embase 1975-79) (psychotropic drugs induce nystagmus).

18. Savolainen, Riihimaki, Vaheri & Linnoila, Effects of Xylene and Alcohol on Vestibular and Visual Functions in Man, SCAND. J. WORK ENVIRON. HEALTH 94 (Sweden 1980) (abstract available on DIALOG, file 172:Embase 1980-81 on file 5:Biosis Previews 1981-86) (the effects of alcohol on vestibular functions (e.g. positional nystagmus) were dose-dependent).

19. Seelmeyer, Nystagmus, A Valid DUI Test, LAW AND ORDER, July 1985, at 29 (horizontal gaze nystagmus test is used in "at least one law enforcement agency in each of the 50 states" and is "a legitimate method of establishing probable cause." Id.).

20. Tharp, Moskowitz & Burns, Circadean Effects on Alcohol Gaze Nystagmus (paper presented at 20th annual meeting of Society for Psychophysiological Research), abstract in 18

PSYCHOPHYSIOLOGY, March 1981 (highly significant correlation between angle of onset of AGN and BAC).

21. Umeda & Sakata, Alcohol and the Oculomotor System, 87 ANNALS OF OTOLOGY, RHINOLOGY & LARYNGOLOGY, May-June 1978, at 392 (in volunteers whose "caloric eye tracking pattern" (CETP) was normal before alcohol intake, influence of alcohol on oculomotor system appeared consistently in the following order: (1) abnormality of CETP, (2) positional alcohol nystagmus, (3) abnormality of eye tracking pattern, (4) alcohol gaze nystagmus).

22. Zyo, Medico-Legal and Psychiatric Studies on the Alcoholic Intoxicated Offender, 30 JAPANESE J. OF LEGAL MED., No. 3, 1976, at 169 (abstract available on DIALOG, file 21:National Criminal Justice Reference Service 1972-85) (recommends use of nystagmus test to determine somatic and mental symptoms of alcohol intoxication as well as BAC).

2. Are HGN Test Results Admissible Evidence?

Our holding that when administered by properly trained and certified police officers the HGN test is sufficiently reliable to be used to establish probable cause does not mean the test results may be admitted in evidence on the question of guilt or innocence. In Fuenning v. Superior Court, supra, we held that if a defendant challenges the intoxilyzer test results, the conduct that provided probable cause becomes relevant to the question of the accuracy of the chemical analysis which allegedly showed that the driver's BAC exceeded .10 percent, and thus may be admissible. We stated such admissible testimony might include "the manner in which he was driving [and] the manner in which he performed the field sobriety tests...." 139 Ariz. at 599, 680 P.2d at 130.

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Unless the results of the HGN test are also admissible under our rules of evidence, when a driver challenges the chemical test results, the state may find itself in the position of being able to support the arrest with the results of the traditional field sobriety tests, but not the more probative HGN test results. This result is not unique.

> Much evidence of real and substantial probative value goes out on considerations irrelevant to its probative weight but relevant to possible misunderstanding or misuse by the jury.

Brineger v. United States, 338 U.S. at 173, 69 S. Ct. at 1309.

The "Frye Rule"

The HGN test is a different type of test from balancing on one leg or walking a straight line because it rests almost entirely upon an assertion of scientific legitimacy rather than a basis of common knowledge. Different rules therefore apply to determine its admissibility. See State ex rel. Collins v. Superior Court, 132 Ariz. 180, 195, 644 P.2d 1266, 1281 (1982); cf. State v. Roscoe, 145 Ariz. 212, 700 P.2d 1312 (1984). It is to this question of HGN's admissibility that we now address ourselves.

Rules of evidence are aimed at preventing jury confusion, prejudice and undue consumption of time and trial resources. State v. Hurd, 86 N.J. 525, 432 A.2d 86 (1981); Rule 403, Ariz.R.Evid., 17A A.R.S. Scientific evidence is a source of particular judicial caution. Because "science" is often accepted in our society as synonymous with truth, there is a substantial risk that the jury may give undue weight to such evidence. M. UDALL & J. LIVERMORE, LAW OF EVIDENCE § 102 (2d ed. 1982). If a technique has an "enormous effect in resolving completely a matter in controversy," it must be demonstrably reliable before it is admissible. Id.

Before expert opinion evidence based on a novel scientific principle can be admitted, the rule of Frye v. United States, supra, requires that the theory relied on be in conformity with a generally accepted explanatory theory. See Collins, 132 Ariz. at 195, 644 P.2d at 1281. The purpose of this requirement is to assure the reliability of the testimony. Because HGN is a new

IN THE COURT OF APPEALS
STATE OF ARIZONA
DIVISION TWO

THE STATE OF ARIZONA, Petitioner, v. THE SUPERIOR COURT OF THE STATE OF ARIZONA, in and for the COUNTY OF COCHISE, and the HON. JAMES L. RILEY, DIVISION III, Respondent, and FREDRICK ANDREW BLAKE, Real Party in Interest.	2 CA-SA 0254 DEPARTMENT A O P I N I O N

SPECIAL ACTION PROCEEDINGS

Relief Granted

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H O W A R D, Judge.

This special action concerns the use by law enforcement personnel of a field sobriety test called horizontal gaze nystagmus (HGN). Since considerable public funds are about to be spent by the Governor's Office of Highway Safety, Arizona Department of Transportation, for the training of law enforcement officers throughout the state in the use of the HGN test, special action is appropriate. We hold that the trial court erred in deciding that the HGN test could not be used to determine probable cause and in dismissing the prosecution.

In the early morning hours of March 18, 1985, the real party in interest, Fredrick Blake, was driving an automobile on State Route 92 south of Sierra Vista, Arizona. He was stopped by Officer Hohn of the Arizona Highway Patrol who suspected him of driving while under the influence of alcohol. The officer had Blake perform a series of field sobriety tests and he also had Blake perform the HGN test, which involves requesting a person at the time of the stop to concentrate on an object (usually a pen) held by the officer slightly above the driver's eye level. The

object is held initially directly ahead of the driver's eyeball while it is centered and looking straight forward in relation to the head. The object is then moved toward the outside of the driver's field of vision, toward the ear and away from the nose. The officer then observes the onset of an involuntary oscillation of the eyeball and measures the angle of the onset of this oscillation in relation to the center point. The officer then calculates the blood alcohol level based upon the angle of the onset of the oscillation.

Blake's performance of the standard field sobriety test was fair, but when the HGN test was administered, the officer had no doubt that Blake had a blood alcohol content (BAC) of more than .10 per cent. In fact, he estimated that from the result of the HGN test Blake had a BAC of .17 per cent. Blake was arrested and an intoxilyzer was subsequently administered which showed that Blake had a BAC of .163 per cent. Blake was charged, inter alia, with driving while under the influence of alcohol in violation of A.R.S. §28-692(B), which makes it unlawful to drive with .10 per cent or more of alcohol in the blood.

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Blake made two motions in the trial court: to dismiss the prosecution for lack of probable cause to arrest and in limine to preclude the admission of the HGN test and its results at trial. At the hearing on the motions, Officer Hohn stated that without utilizing the results of the HGN, he did not believe that he had probable cause to arrest Blake.

The trial court concluded that the HGN test failed to meet the test of reliability under Frye v. United States, 293 F. 1013 (D.C. Cir. 1923), and thus could not be used to form probable cause. The court then dismissed the prosecution.

The trial court was incorrect in deciding that that the HGN test had to meet the Frye test before it could be used to determine probable cause to arrest. The Frye test, as adopted in Arizona, is as follows: "To be accepted by a court as fact, a scientific principle must have gained general acceptance in the particular field in which it belongs." Scales v. City Court, 122 Ariz. 231, 594 P.2d 97 (1979). See State v. Roscoe, _ Ariz. _, _ P.2d _ (No. 5831, filed December 28, 1984). The Frye test governs the admissibility of scientific evidence at trial. However, such evidence need not meet the Frye test in order to be utilized to determine probable cause to arrest. Probable cause to arrest exists where the arresting officer has reasonably trustworthy information sufficient to lead a reasonable person to believe that an offense has been committed and that the person to be arrested committed it. State v. Nelson, 129 Ariz. 582, 633 P.2d 391 (1981). Only the probability and not a prima facie showing of criminal activity is the standard for probable cause to arrest. State v. Emery, 131 Ariz. 493, 642 P.2d 838 (1982). When assessing whether probable cause exists, police officers are entitled to rely upon information not admissible at trial. Brinegar v. United States, 338 U.S. 160, 69 S.Ct. 1302, 93 L.Ed.

1897 (1949) (in a prosecution for importing intoxicating liquor into Oklahoma from Missouri in violation of the federal statutes, testimony by an investigator of the Alcohol Tax Unit that he had arrested Brinegar several months earlier for illegal transportation of liquor and that the resulting indictment was pending in another court at the time of the trial of this case was admissible at a hearing on the motion to suppress where the issue was not guilt but probable cause). In Brinegar, the court remarked:

> "The court's rulings, one admitting, the other excluding the identical testimony, were neither inconsistent nor improper. They illustrate the difference in standards and latitude allowed in passing upon the distinct issues of probable cause and guilt. Guilt in a criminal case must be proved beyond a reasonable doubt and by evidence confined to that which long experience in the common-law tradition, to some extent embodied in the Constitution, has crystallized into rules of evidence consistent with that standard. These rules are historically grounded rights of our system, developed to safeguard men from dubious and unjust convictions, with resulting forfeitures of life, liberty and property.
>
> However, if those standards were to be made applicable in determining probable cause for an arrest or for search and seizure, more especially in cases such as this involving moving vehicles used in the commission of crime, few indeed would be the situations in which an officer, charged with protecting the public interest by enforcing the law, could take effective action toward that end. Those standards have seldom been so applied." 69 S.CT. at 1310.

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Four witnesses testified for the state on the motion to dismiss and motion in limine. Marcelline Burns has a Ph.D. from the University of California at Irvine and is a research psychologist. She is also the director of the Southern California Research Institute. The Institute is a non-profit organization incorporated by a group of researchers from UCLA, including Dr. Burns. In 1975 the United States Department of Transportation, the National Highway Safety Administration, awarded a research contract to the Southern California Research Institute to investigate and to develop the best possible field sobriety tests. Dr. Burns was the project director and conducted the research. As a result of the research the Institute recommended a three-test battery, one of which was the HGN test. Their research found a correlation between blood alcohol content and HGN and they developed the following formula: Fifty degrees minus the angle of the gaze of the onset of eye oscillation equals the BAC. This formula was validated in the field as a result of 450 administrations of the test. They found that they were able to distinguish above and below .10 per cent blood alcohol at an accuracy level of 80 per cent. Researchers in Finland had also been studying and using the HGN test and their results were the same as these of the Institute.

Based on the research done by the Institute, the National Highway Traffic Safety Administration has developed a training manual and training program on the HGN test and is now

training law enforcement officers nationwide on the use of the test. Dr. Burns has conducted training sessions in Arizona and California, teaching law enforcement officers to administer the HGN test. Dr. Burns testified that the HGN test had been accepted as valid by the National Highway Traffic Safety Administration, the Finnish researchers, the researchers at her institute, numerous state agencies such as the California Highway Patrol, The Arizona Highway Patrol, the Washington State Police, and by innumerable city agencies. There was no evidence introduced to show that the HGN test is not a valid test, or that it was not or had not been accepted by the particular field in which it belongs.

Also testifying for the state was Sergeant Richard Studdard, a police officer with the City of Los Angeles who is currently a supervisor in the enforcement of DWI cases. He first became involved with HGN in 1960 at the Los Angeles Police Academy where he was taught to use it for barbiturate intoxication. In 1971 the department was having major problems convicting individuals for driving under the influence of drugs and decided that it would standardize a field sobriety test battery which was applicable to both alcohol and drugs. Their work in the field actually administering the HGN test showed a direct correlation between the percentage of alcohol and the amount of HGN, but it was not until 1977, when the Southern California Institute and Dr. Burns became involved, that their

findings were corroborated. Sergeant Studdard actually participated in quite a few studies at the institute and was involved in double blind studies in which individuals were given alcohol and/or a placebo and were then examined by using the HGN test. The results were dramatic. The results of the HGN tests were extremely close to the actual blood alcohol level.

Sergeant Studdard also participated in programs at the National Highway Safety Administration and is now its consultant on field sobriety testing and HGN. He has actually trained officers in the Washington D.C. area and has been involved in a constant study of the HGN tests. He testified that he found that the accuracy rate of the HGN test in determining blood alcohol is between 80 and 90 per cent. According to Sgt. Studdard, the 10 to 20 per cent "inaccuracy" in determining the blood alcohol content is caused by the fact that drugs such as barbiturates or valium cause the same type of result on the HGN test as does alcohol. He also testified that the HGN test was especially useful in those cases where the usual field sobriety tests, such as walking a straight line and the finger-to-nose test, did not clearly disclose that the driver was under the influence. In the past, those drivers were not arrested, although they actually may have had more than .10 per cent of alcohol in their blood. Now, with the HGN test, officers are able to detect those individuals and keep them off the highways.

Sergeant Jeffrey Raynor is a sergeant with the Arizona

Highway Patrol. He currently administers the HGN training program for the state. The Arizona Law Enforcement Officers Advisory Council (ALEOAC) is a statewide police certifying agency for police officer training. Sgt. Raynor established the training program for ALEOAC. Sgt. Raynor also testified to the benefits of administering the HGN test along with the usual field sobriety tests. His experience and the experience of other law enforcement officers has shown that an experienced drinker could have .13 or .14 BAC and still might be able to perform the traditional field tests very well, thus evading arrest.

The program in the state of Arizona for the use of HGN is included in a 20-hour course of instruction which also includes other standardized field tests. The officers are given a chance to practice the HGN test on suspects who have been dosed with various amounts of alcohol. In order to be certified by ALEOAC to administer the test, they first have to perform 35 practice applications of HGN. They then take an examination where there are live drinking suspects. They have five suspects on which they perform the test and they are required to determine correctly four out of five times, within .02 per cent, the BAC of the suspect. A police officer is also required to use the HGN test regularly and he is evaluated by a supervisor or in the field by Sgt. Raynor in his HGN training to make sure that the officer maintains his proficiency. Officer Robert Hohn had been certified as an HGN specialist. All the testimony at the hearing

made clear that the efficacy of the HGN test depended upon the expertise of the officer who administered the test and that his education and on-the-job training were extremely important.

We conclude that the record shows not only that the HGN is sufficiently reliable to provide probable cause for arrest, but that with the proper foundation as to the expertise of the officer administering it, testimony concerning the administration of the test and its results is admissible at trial. The record shows that the HGN test has gained general acceptance in the field in which it belongs.

However, we wish to make clear that, on the record before us, we are unable to rule that the results of the HGN test administered to Blake would be admissible at trial. The record shows only that Officer Hohn was certified. This means that all he had to do was to be correct four out of five times in passing the exam. Considering the necessity of expertise on the part of the officer administering the test, and the importance of his continually working with the test in the field, we are unable to say that a sufficient foundation for admissibility has been laid. We do note, however, that Officer Hohn kept a log of the times the test was administered. This log would be useful if it demonstrated that Officer Hohn was as proficient in the field as he was on the examination.

The order dismissing the case is vacated and set aside and the case is remanded for further proceedings consistent with

this opinion.

LAWRENCE HOWARD, Judge.

CONCURRING:

JOSEPH M. LIVERMORE, Judge.

LLOYD FERNANDEZ, Judge.

SESSION IV

OVERVIEW OF DETECTION
NOTE TAKING AND TESTIMONY

SESSION IV

OVERVIEW OF DETECTION, NOTE TAKING AND TESTIMONY

Upon successfully completing this session, the student will be able to:

- o Describe the three phases of detection.
- o Describe the tasks and key decision of each phase.
- o Discuss the uses of a standard note taking guide.
- o Discuss guidelines for effective testimony.

CONTENT SEGMENTS	LEARNING ACTIVITIES
A. Three Phases of Detection	o Instructor-Led Presentations
B. DWI Investigation Field Notes	o Reading Assignments
C. Courtroom Testimony	

DWI DETECTION

Detection is both the most difficult task in the DWI enforcement effort, and the most important. If officers fail to detect DWI violators, the DWI countermeasures program ultimately will fail. If officers do not detect and arrest DWI violators, the prosecutors can not prosecute them, the courts and driver licensing officials can not impose sanctions on them, and treatment and rehabilitation programs will go unused.

The term DWI detection has been used in many different ways. Consequently it does not mean the same thing to all police officers. For the purposes of this training, DWI detection is defined as:

> THE ENTIRE PROCESS OF IDENTIFYING AND GATHERING EVIDENCE TO DETERMINE WHETHER OR NOT A SUSPECT SHOULD BE ARRESTED FOR A DWI VIOLATION.

The detection process begins when the police officer first suspects that a DWI violation may be occurring and ends when the officer decides that there is or there is not sufficient probable cause to arrest the suspect for DWI.

Your attention may be called to a particular vehicle or individual for a variety of reasons. The precipitating event may be a loud noise; a cloud of dust; an obvious moving violation; behavior that is unusual, but not necessarily illegal; an equipment defect; or almost anything else. The initial "spark" of detection may carry with it an immediate, strong suspicion that the driver is under the influence; or only a slight, ill-formed suspicion; or even no suspicion at all at that time. In any case, it sets in motion a process wherein you focus on a particular individual and have the opportunity to observe that individual and to accumulate additional evidence.

The detection process ends when you decide either to arrest or not to arrest the individual for DWI. That decision, ideally, is based on all of the evidence that has come to light since your attention first was drawn to the suspect. Effective DWI enforcers do not leap to the arrest/no arrest decision. Rather, they proceed carefully through a series of intermediate steps, each of which helps to identify the collective evidence.

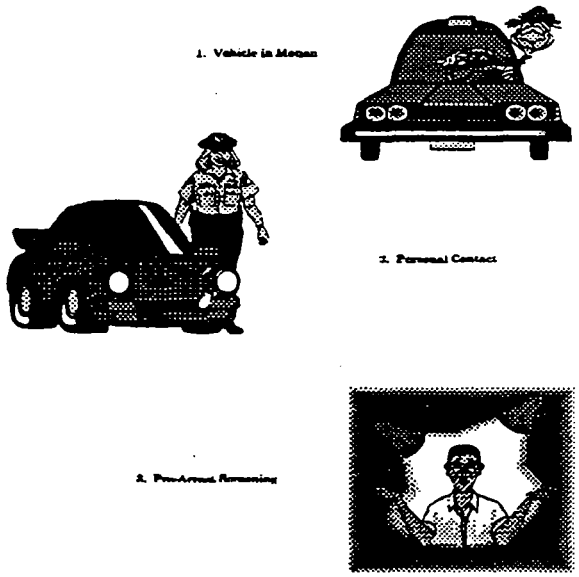
DETECTION PHASES

The typical DWI contact involves three separate and distinct phases:

Phase One: Vehicle in motion
Phase Two: Personal contact
Phase Three: Pre-arrest screening

(See Exhibit 4-1.)

EXHIBIT 4-1
DWI DETECTION PHASES



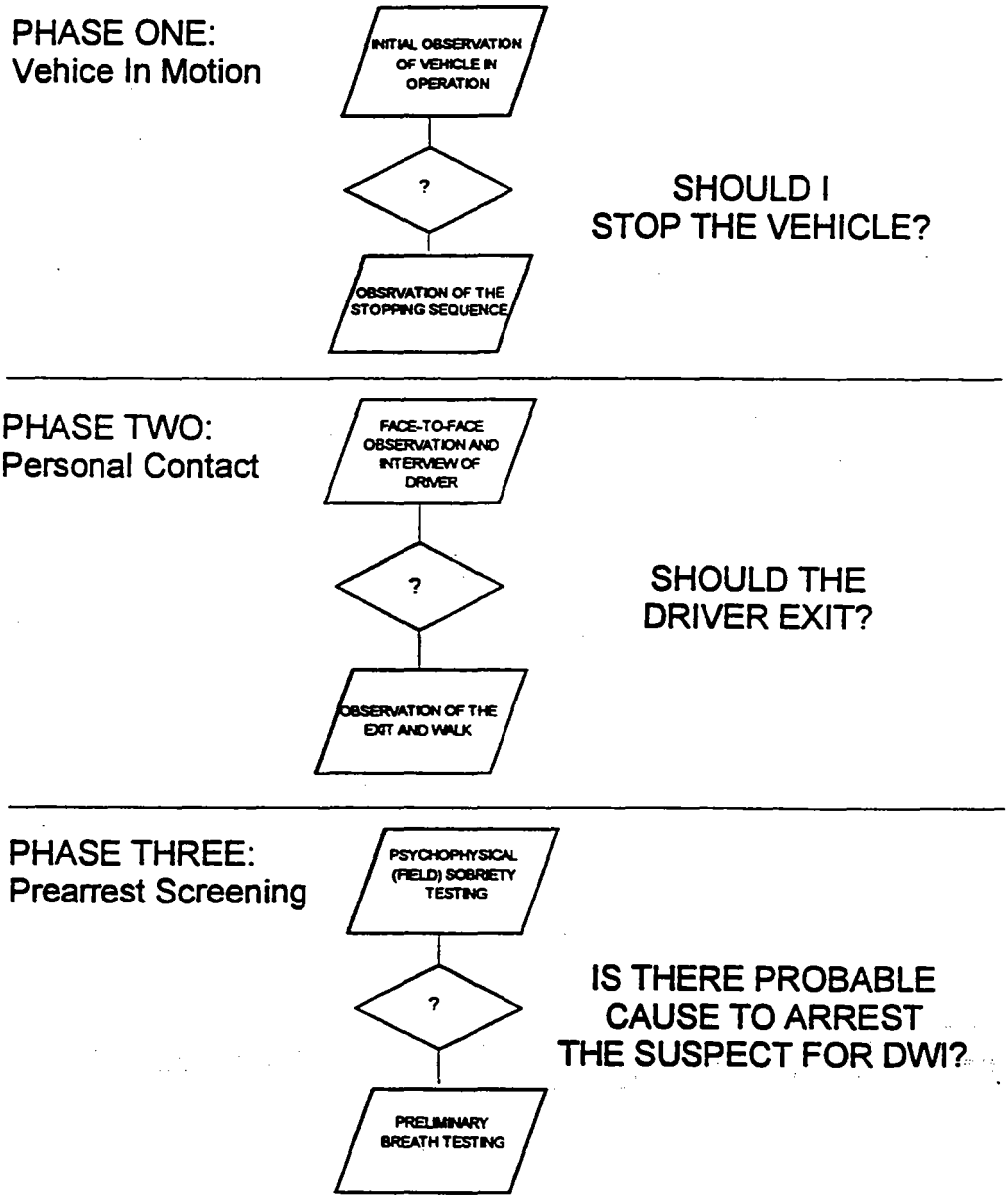
In Phase One, you usually observe the driver operating the vehicle. In Phase Two, after you have stopped the vehicle, there usually is an opportunity to observe and speak with the driver face-to-face. In Phase Three, you usually have an opportunity to administer some formal structured field sobriety tests to the driver to evaluate the degree of impairment. You may administer a preliminary breath test in addition to field sobriety tests to verify that alcohol is the cause of the impairment.

The DWI detection process does not always include all three phases. Sometimes there are DWI detection contacts in which Phase One is absent; that is, cases in which you have no opportunity to observe the vehicle in motion. This may occur at the scene of an accident to which you have been called, at a roadblock, or when you have responded to a request for motorist assistance. Sometimes there are DWI contacts in which Phase Three never occurs. There are cases in which you would not administer formal tests to the driver. These may occur when the driver is grossly intoxicated or badly injured, or refuses to submit to tests.

MAJOR TASKS AND DECISIONS

Each detection phase usually involves two major tasks and one major decision (See Exhibit 4-2.)

EXHIBIT 4-2
DWI DETECTION PHASES



In Phase One: Your first task is to observe the vehicle in operation. Based on this observation, you must decide whether there is sufficient cause to command the driver to stop. Your second task is to observe the stopping sequence.

In Phase Two: Your first task is to observe and interview the driver face-to-face. Based on this observation, you must decide whether there is sufficient cause to instruct the driver to step from the vehicle for further investigation. Your second task is to observe the driver's exit and walk from the vehicle.

In Phase Three: Your first task is to administer structured, formal psychophysical tests. Based on these tests, you must decide whether there is sufficient probable cause to arrest the driver for DWI. Your second task is then to arrange for (or administer) a Preliminary Breath Test.

Each of the major decisions can have any one of three different outcomes:

1. Yes - Do it Now
2. Wait - Look for Additional Evidence
3. No - Don't Do It

Consider the following examples.

1. Yes - Do It Now

   Phase One: Yes, there are reasonable grounds to stop the vehicle.

   Phase Two: Yes, there is enough reason to suspect impairment to justify getting the driver out of the vehicle for further investigation.

   Phase Three: Yes, there is probable cause to arrest the driver for DWI right now.

2. Wait - Look for Additional Evidence

   Phase One: Don't stop the vehicle yet; keep following and observing it a bit longer.

   Phase Two: Don't get the driver out of the car yet; keep talking to and observing the driver a bit longer. (This option may be limited if the officer's personal safety is at risk.)

Phase Three: Don't arrest the driver yet; administer another field sobriety test before deciding.

3. Don't Do It:

Phase One: No, there are no grounds for stopping that vehicle.

Phase Two: No, there isn't enough evidence of DWI to justify administering field sobriety tests.

Phase Three: No, there is not sufficient probable cause to believe this driver has committed DWI.

OFFICER RESPONSIBILITY

In each phase of detection, you must determine whether there is sufficient evidence to establish "reasonable suspicion" necessary to proceed to the next step in the detection process. It is always your duty to carry out whatever tasks are appropriate, to make sure that all relevant evidence of DWI is brought to light. (See Exhibit 4-3).

EXHIBIT 4-3
DWI DETECTION

Answers to questions like these can aid you in DWI detection.

Phase One:
- What is the vehicle doing?
- Do I have grounds to stop the vehicle?
- How does the driver respond to my signal to stop?
- How does the driver handle the vehicle during the stopping sequence?

Phase Two:
- When I approach the vehicle, what do I see?
- When I talk with the driver, what do I hear, see and smell?
- How does the driver respond to my questions?
- Should I instruct the driver to exit the vehicle?
- How does the driver exit?
- When the driver walks toward the side of the road, what do I see?

Phase Three:
- Should I administer field sobriety tests to the driver?
- How does the driver perform those tests?
- What exactly did the driver do wrong when performing the tests?
- Do I have probable cause to arrest for DWI?
- Should I administer a preliminary breath test?
- What are the results of the preliminary breath test?

The most successful DWI detectors are those officers who:

- o know what to look and listen for;
- o have the skills to ask the right kinds of questions;
- o choose and use the right kinds of tests;
- o make the correct observations; and
- o are motivated and apply their knowledge and skill whenever they contact someone who may be under the influence.

Officers like these are likely to make more arrests and to document the clear, convincing evidence needed to secure convictions.

NOTE TAKING AND TESTIMONY

INTRODUCTION

A basic skill needed for DWI enforcement is the ability to graphically describe your observations. Just as detection is the process of collecting evidence, description largely is the process of conveying evidence. Successful description demands the ability to convey evidence clearly and convincingly. Your challenge is to communicate evidence to people who weren't there to see, hear and smell the evidence themselves. Your tools are the words that make up your written report and verbal testimony. You must communicate with the supervisor, the prosecutor, the judge, the jury and even with the defense attorney. You are trying to "paint a word picture" for those people, to develop a sharp mental image that allows them to "see" what you saw; "hear" what you heard; and "smell" what you smelled.

Officers with the knowledge, skills and motivation to select the most appropriate words for both written reports and courtroom testimony will communicate clearly and convincingly, making them more successful in DWI prosecution. (See Exhibit 4-4.)

EXHIBIT 4-4
USING CLEAR AND CONVINCING LANGUAGE

Field notes are only as good as the information they contain. Reports must be clearly written and events accurately described if the reports are to have evidentiary value. One persistent problem with DWI incident reports is the use of vague language to describe conditions, events and statements. When vague language is used, reports provide a confused picture of what happened. When clear language is used, reports provide an accurate picture of what happened. Clear and convincing field notes provide strong evidence in court.

Consider the following examples.

Vague Language	Clear Language
o Made an illegal left turn on Jefferson	o From Main, turned left (north-bound) on Jefferson, which is one way southbound.
o Drove erratically	o Weaving from side to side. Crossed center line twice and drove on shoulder three times.
o Driver appeared drunk	o Driver's eyes bloodshot; gaze fixed; hands shaking. Strong odor of alcoholic beverage on driver's breath.
o Vehicle stopped in unusual fashion	o Vehicle struck, climbed curb; stopped on sidewalk.
o Vehicle crossed the center line	o Vehicle drifted completely into the opposing traffic lane.

DWI INVESTIGATION FIELD NOTES

One of the most critical tasks in the DWI enforcement process is the recognition and retention of facts and clues that establish probable cause to stop, investigate and subsequently arrest persons suspected of driving or operating a vehicle while under the influence of alcohol, drugs or both. The evidence gathered during the detection process must establish the elements of the violation, and must be documented to support successful prosecution of the violator. This evidence is largely sensory (sight, smell, hearing) in nature, and therefore is extremely short-lived.

You must be able to recognize and act on the facts and circumstances with which you are confronted. But you also must be able to recall those observations, and describe them clearly and convincingly to secure a conviction. You may be inundated with evidence of DWI, i.e., sights, sounds, smells. You recognize this evidence, sometimes subconsciously, and on this evidence based your decisions to stop, to investigate and ultimately to arrest.

Since evidence of a DWI violation is short-lived, you need a system and tools for recording field notes at scenes of DWI investigations.

One way to improve the effectiveness of your handwritten field notes is to use a structured note taking guide. The guide makes it easy to record brief "notes" on each step on the detection process and ensures that vital evidence is documented.

The field notes provide the information necessary for completion of required DWI report forms and assist you in preparing a written account of the incident. The field notes will also be useful if you are required to provide oral testimony, since they can be used to refresh your memory.

A model note taking guide is provided for your use. A brief description follows. Details are provided in subsequent units.

NOTE TAKING GUIDE

Remember that you must document those actions which gave you reasonable suspicion or probable cause to justify further investigation of a suspected DWI incident.

Section I provides space to record basic information describing the suspect, the vehicle, the location, and the date and time the incident occurred.

Section II provides space to record brief descriptions of the vehicle in motion (Detection Phase One), including initial observation of the vehicle in operation, and observation of the stopping sequence.

Section III provides space to record brief descriptions of the personal contact with the suspect (Detection Phase Two), including observations of the driver.

Section IV provides space to record the results of all field sobriety tests that were administered, and the results of the preliminary breath test (PBT) if such a test was given.

Section V provides space to record general observations, such as the suspect's manner of speech, attitude, clothing, etc. Any physical evidence collected should also be noted in this section.

Since this is a note taking guide and space is limited, you will have to develop your own "shorthand" system. Your notes should be as descriptive as possible and should create "mental pictures" of the facts, circumstances or events being described. You will use these notes to refresh your memory, to write the arrest report and to testify in court.

NOTE: Field Notes may be subpoenaed as evidence in court. It is important that any "shorthand" system you use be describable, usable, complete and consistent.

DWI INVESTIGATION FIELD NOTES

NAME _____ SEX _____ RACE _____

ADDRESS _____ CITY/STATE _____ OP. LIC. NO. _____

D.O.B. ___/___/___ SOC. SEC. # _____

VEHICLE MAKE _____ YEAR ____ LIC. _____ STATE _____

DISPOSITION _____ NO. PASSENGERS _____

INCIDENT LOCATION _____

DATE ___/___/___ TIME _____ ACCIDENT ☐ YES ☐ NO

II VEHICLE IN MOTION

INITIAL OBSERVATIONS _____

OBSERVATION OF STOP _____

III PERSONAL CONTACT

OBSERVATION OF DRIVER _____

STATEMENTS _____

PRE-EXIT SOBRIETY TESTS _____

OBSERVATION OF THE EXIT _____

ODORS _____

IV PRE - ARREST SCREENING

HORIZONTAL GAZE NYSTAGMUS

NOTE: SUSPECT WEARING CONTACTS?

NO ☐ YES ☐ HARD ☐ Soft ☐

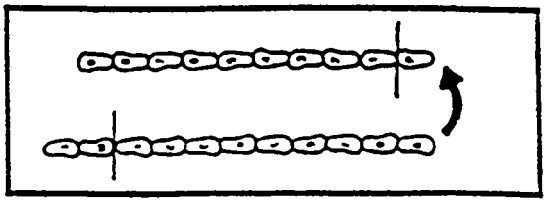
		LEFT	RIGHT
✪ EYE DOES NOT PURSUE SMOOTHLY	____		
✪ DISTINCT NYSTAGMUS AT MAXIMUM DEVIATION	____		
✪ NYSTAGMUS ONSET BEFORE 45 DEGREES			

OTHER: _____

0117

IV PRE-ARREST SCREENING (CONTINUED)

WALK_ AND_ TURN_____



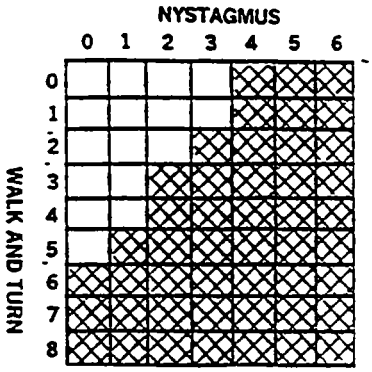
INSTRUCTIONS STAGE

CANNOT KEEP BALANCE ☐

STARTS TOO SOON ☐

WALKING STAGE

	FIRST NINE STEPS	SECOND NINE STEPS
STOPS WALKING		
MISSES HEEL - TOE		
STEPS OFF LINE		
RAISES ARMS		
ACTUAL STEPS TAKEN		



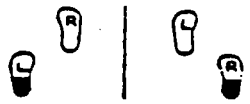
Improper Turn (Describe)_____

CANNOT DO TEST (EXPLAIN)_____

_____

OTHER:_____

ONE LEG STAND



L R
☐ ☐ Sways while balancing.
☐ ☐ Uses arms to balance.
☐ ☐ Hopping.
☐ ☐ Puts foot down

Type of Footwear

OTHER:_____

_____

_____

PBT ☐

OTHER FIELD SOBRIETY TESTS

NAME OF TEST_____

DESCRIBE PERFORMANCE_____

_____

_____

_____

NAME OF TEST_____

DESCRIBE PERFORMANCE_____

_____

_____

_____

NAME OF TEST_____

DESCRIBE PERFORMANCE_____

_____

_____

_____

V GENERAL OBSERVATIONS

SPEECH_____

_____

ATTITUDE_____

_____

CLOTHING_____

_____

OTHER_____

_____

PHYSICAL EVIDENCE_____

_____

_____

_____

0117A

COURTROOM TESTIMONY

Although only a minority of DWI cases actually come to trial, the arresting officer must be fully prepared to testify in court on any case. Testimonial evidence in DWI cases usually is the only way to establish that the accused was in fact the driver of the vehicle alleged to have been involved in the DWI incident. Testimonial evidence also may be the primary and sometimes the only means of establishing that the accused was intoxicated, or under the influence of alcohol or drugs. Even when scientific evidence is available, supportive testimonial evidence will be required to permit introduction of that scientific evidence in court.

PREPARATION

Testimonial evidence must be clear and convincing to be effective. The first requirement for effective testimony is preparation. Testimony preparation begins at the time of the DWI incident. From the very beginning of the DWI contact, it is your responsibility to:

- recognize significant evidence;
- compile complete, accurate Field Notes;
- prepare a complete and accurate incident report.

Testimony preparation continues prior to trial. Just before the trial, you should:

- review Field Notes;
- review case jacket/file;
- mentally organize elements of offense, and the evidence available to prove each element;
- mentally organize testimony to convey observations clearly and convincingly; and
- discuss the case with the prosecutor.

IN COURT

In court, your testimony should be organized chronologically and should cover each phase of the DWI incident:

- initial observation of vehicle, the driver or both;
- reinforcing cues, maneuvers or actions, observed after signaling driver to stop, but before driver's vehicle came to a complete stop;

- statements and other evidence obtained during your initial face-to-face contact with driver;

- pre-arrest screening sobriety tests administered to the driver;

- the arrest itself; including procedures used to inform suspect of arrest, admonish suspect of rights, and so on;

- suspect's actions and statements subsequent to the arrest;

- observation and interrogation of suspect subsequent to the arrest;

- the request for the chemical test; including the procedures used, admonition of rights and requirements, and so on;

- the conduct and results of the chemical test, if you were also the testing officer.

TEST YOUR KNOWLEDGE

INSTRUCTIONS: Complete the following sentences.

1. DWI detection is defined as _____

_____

_____

2. The three phases in a typical DWI contact are:

   Phase One _____

   Phase Two _____

   Phase Three _____

3. In Phase One, the officer usually has an opportunity to _____

_____

_____

4. Phase Three may not occur if _____

_____

_____

5. In Phase Two, the officer must decide _____

_____

_____

6. Each major decision can have any one of _____ different outcomes.

   These are _____

_____

_____

7. At each phase of detection, the officer must determine _____

_____

_____

8. Evidence of DWI is largely _____ in nature.

9. Police officers need a system and tools for recording field notes at scenes of DWI investigations because DWI evidence is _____.

10. Testimony preparations begins _____

_____

_____

11. List two things the officer should do to prepare testimony just before the trial.

a. _____

b. _____

12. In court, the officer's testimony should be organized _____

_____

_____

13. The conditions and results of the Chemical test are included in the arresting officer's testimony if _____

_____

_____

SESSION V

PHASE ONE: VEHICLE IN MOTION

SESSION V

PHASE ONE: VEHICLE IN MOTION

Upon successfully completing this session, the student will be able to:

- Identify typical cues of Detection Phase One.
- Describe the observed cues clearly and convincingly.

CONTENT SEGMENTS		LEARNING ACTIVITIES	
A.	Overview: Tasks and Decision	o	Instructor-Led Presentations
B.	Initial Observations: Visual Cues Impaired Operation	o	Video Presentation
C.	Recognition and Description of Initial Cues	o	Instructor-Led Demonstrations
D.	Typical Reinforcing Cues of the Stopping Sequence	o	Student's Presentations
E.	Recognition and Description of Initial and Reinforcing Cues		

DWI DETECTION PHASE ONE: VEHICLE IN MOTION

Your first task in Phase One: Vehicle in Motion is to observe the vehicle in operation to note any initial cues of a possible DWI violation. At this point you must decide whether there is sufficient cause to stop the vehicle, either to conduct further investigation to determine if the suspect may be impaired, or for another traffic violation. You are not committed to arresting the suspect for DWI based on this initial observation, but rather should concentrate on gathering all relevant evidence that may suggest impairment. Your second task during phase one is to observe the manner in which the suspect responds to your signal to stop, and to note any additional evidence of a DWI violation.

The first task, observing the vehicle in motion, begins when you first notice the vehicle, driver or both. Your attention may be drawn to the vehicle by such things as:

- o a moving traffic violation;
- o an equipment violation;
- o an expired registration or inspection sticker;
- o unusual driving actions, such as weaving within a lane or moving at slower than normal speed; or
- o "Evidence of drinking" or drugs in vehicle.

If this initial observation discloses vehicle maneuvers or human behaviors that may be associated with the influence of alcohol, you may develop an initial suspicion of DWI.

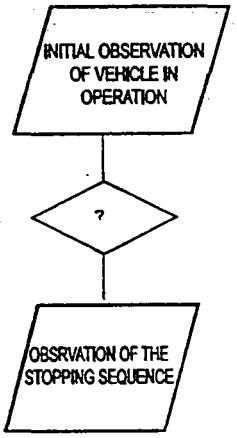
Based upon this initial observation of the vehicle in motion, you must decide whether there is probable cause to stop the vehicle. At this point you have three choices:

- o stop the vehicle;
- o continue to observe the vehicle; or
- o disregard the vehicle.

DWI DETECTION PHASE ONE: VEHICLE IN MOTION

Phase One Tasks and Decisions

PHASE ONE:
Vehice In Motion



SHOULD I
STOP THE VEHICLE?

2. INITIAL OBSERVATIONS: VISUAL CUES TO DWI

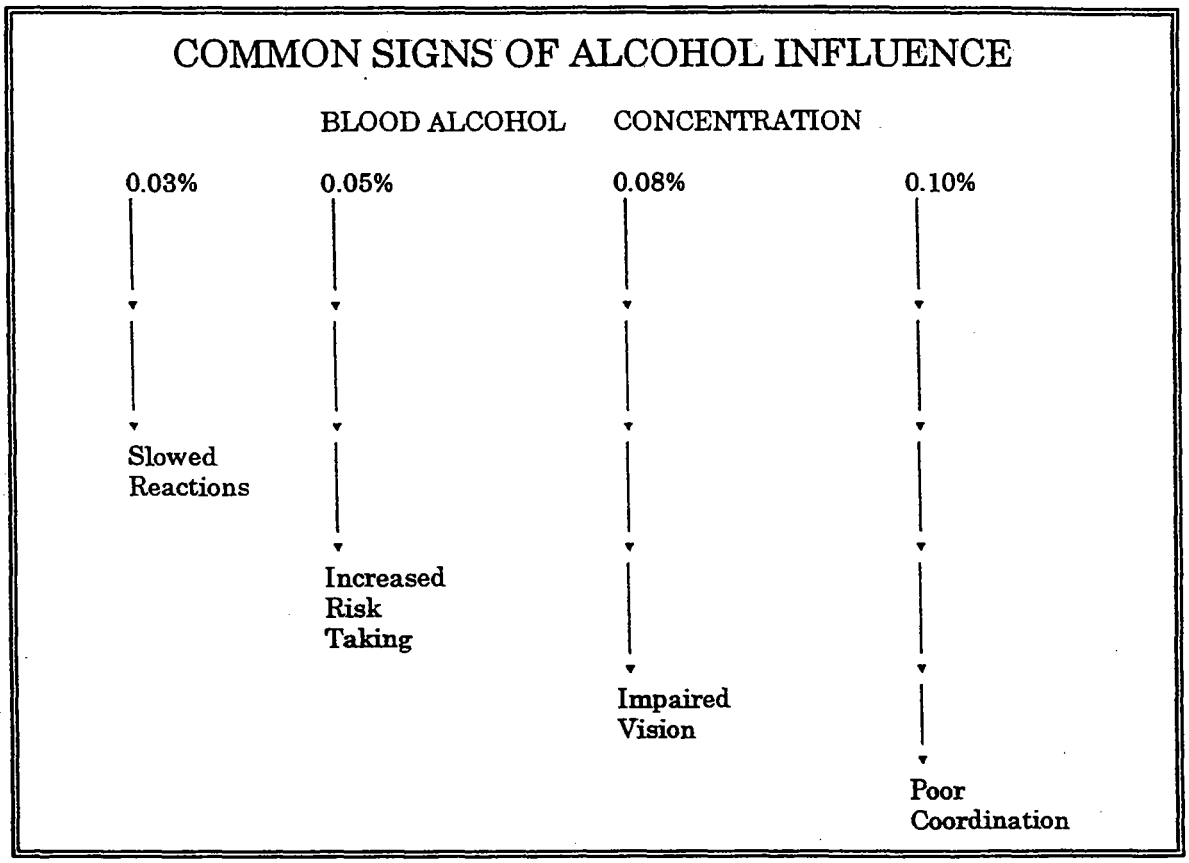
Drivers who are under the influence of alcohol, drugs or both frequently exhibit certain effects or symptoms of impairment. These include:

- o slowed reactions;
- o impaired judgment as evidenced by a willingness to take risks;
- o impaired vision; and
- o poor coordination

The next page presents common symptoms of alcohol influence. This unit focuses on alcohol impairment because research currently provides more information about the effects of alcohol on driving than it does about the effects of other drugs on driving. Remember that whether the driver is under the influence of alcohol or other drugs, the law enforcement detection process is the same, and the offense is still DWI.

The common effects of alcohol on the driver's mental and physical faculties lead to predictable driving violations and vehicle operating characteristics. The National Highway Traffic Safety Administration (NHTSA) sponsored research to identify the most common and reliable initial indicators of DWI. This research identified 20 cues, each with an associated high probability that the driver exhibiting the cue is

under the influence. These cues and their associated probabilities are described in the following Special Section, Initial Visual DWI Detection Cues. They also are discussed in Visual Detection of Driving While Intoxicated, a film sponsored by NHTSA to assist law enforcement officers to recognize DWI detection cues. This film is included in the training videotape.



INITIAL VISUAL DWI DETECTION CUES

Following are 20 cues which police officers may use to detect nighttime drunk drivers. The cues were developed from interviews with a variety of law enforcement specialists in DWI detection; from a detailed analysis of more than 1,000 DWI arrest reports from different geographical regions; and from a field study in which cues observed in more than 600 patrol stops were correlated with driver BAC levels. These cues represent the most systematically developed method available for visually predicting whether a vehicle operated at night is being driven by a DWI driver or a sober driver.

PROBABILITY VALUES

The number given after each visual cue is the probability that a driver exhibiting that cue has a BAC equal to or greater than 0.10 percent. For example, the 65 for the first cue, Turning With Wide Radius, means that chances are 65 out of 100 that a driver who turns with wide radius at night will have a BAC equal to or greater than 0.10 percent. The 50 for Drifting means that chances are 50 out of 100 (50:50) that a driver who is drifting at night will have a BAC equal to or greater than 0.10 percent.

Each value shown is based on seeing only one cue. However, multiple cues are often seen. When two or more cues are seen, add 10 to the highest value among the cues observed. For example:

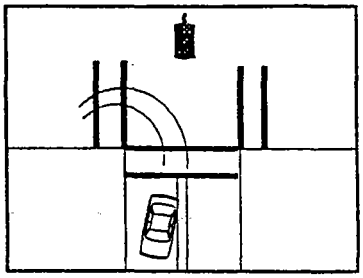
Turning with Wide Radius	65
and	
Drifting (50)	10
	75

Chances are 75 out of 100 that a driver who exhibits both these cues will have a BAC equal to or greater than 0.10 percent.

A pocket-sized booklet listing these cues is available free of charge from:

National Highway Traffic Safety Administration
Office of Alcohol and State Programs
Room 5120, 400 Seventh Street, SW.
Washington, DC 20590

VISUAL CUE DESCRIPTIONS



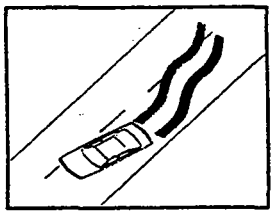
65% - Turning With Wide Radius - During a turn, the radius defined by the distance between the turning vehicle and the center of the turn in greater than normal.

65% - Straddling Center or Lane Marker - The vehicle is moving straight ahead with the center or lane marker between the left-hand and right-hand wheels.

60% - Appearing to be Drunk - This cue is actually one or more of a set of indicators related to the personal behavior or appearance of the driver. Examples of specific indicators might include:

- o Eye fixation
- o Tightly gripping the steering wheel
- o Slouching in the seat
- o Gesturing erratically or obscenely
- o Face close to the windshield
- o Drinking in the vehicle
- o Driver's head protruding from vehicle

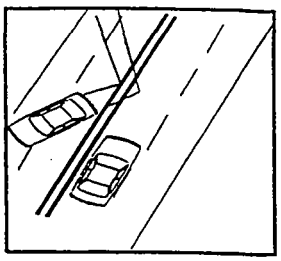
60% - Almost Striking Object or Vehicle - The observed vehicle almost strikes a stationary object or another moving vehicle. Examples include: passing abnormally close to a sign, wall, building, or other object; passing abnormally close to another moving vehicle; and causing another vehicle to maneuver to avoid collision.



60% - Weaving - Weaving occurs when the vehicle alternately moves toward one side of the roadway and then the other, creating a zig-zag course. The pattern of lateral movement is relatively regular as one steering correction is closely followed by another.

55% - Driving on Other Than Designated Roadway - The vehicle is observed being driven on other than the roadway designated for traffic movement. Examples include driving: at the edge of the roadway, on the shoulder, off the roadway entirely, and straight through turn-only lanes or areas.

55% - Swerving - A swerve is an abrupt turn away from a generally straight course. Swerving might occur directly after a period of drifting when the driver discovers the approach of traffic in an oncoming lane or discovers that the vehicle is going off the road; swerving might also occur as an abrupt turn is executed to return the vehicle to the traffic lane. In the illustration below, a swerve was executed to return to a lane after a period of drifting toward opposing traffic.

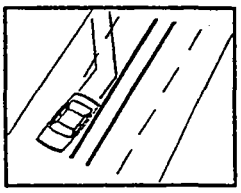


50% - Speed Slower than 10 M.P.H. Below Limit - The observed vehicle is being driving at a speed that is more than 10 MPH below the speed limit.

50% - Stopping Without Cause in Traffic Lane - The critical element in this cue is that there is no observable justification for the vehicle to stop in the traffic lane; the stop is not caused by traffic conditions, traffic signals, an emergency situation, or related circumstances. Intoxicated drivers might stop in lane when their capability to interpret information and make decisions becomes severely impaired. As a consequence, stopping (without cause) in the traffic lane is likely to occur at intersections or other decision points.

50% - Following Too Closely - The vehicle is observed following another vehicle while not maintaining the legal minimum separation.

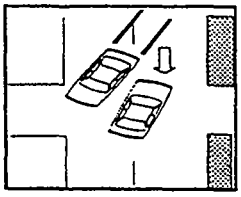
50% - Drifting - Drifting is a straight-line movement of the vehicle at a slight angle to the roadway. As the driver approaches a marker or boundary (lane marker, center line, edge of the roadway), the direction of drift might change. As shown in the illustration, the vehicle drifts across the lane marker into another lane, then the driver makes a correction and the vehicle drifts back across the lane marker. Drifting might be observed within a single lane, across lanes, across the center line, onto the shoulder, and from lane to lane.



45% - Tires on Center or Lane Marker - The left-hand set of tires of the observed vehicle is consistently on the center line, or either set of tires is consistently on the lane marker.

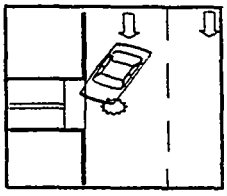
45% - Braking Erratically - The driver of the observed vehicle breaks unnecessarily, maintains pressure on the brake pedal ("riding the brakes"), or brakes in an uneven or jerky manner.

45% - Driving Into Opposing or Crossing Traffic - The vehicle is observed heading into opposing or crossing traffic under one or more of the following circumstances: driving in the opposing lane; backing into traffic; failing to yield the right-of-way; driving the wrong way on a one-way street. The last circumstance is illustrated below.

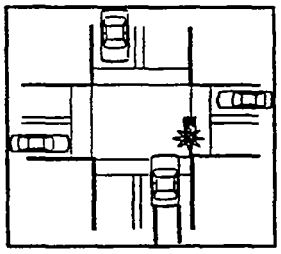


40% - Slow Response to Traffic Signals - The observed vehicle exhibits a longer than normal response to a change in traffic signal. For example, the driver remains stopped at the intersection for an abnormally long period of time after the traffic signal has turned green.

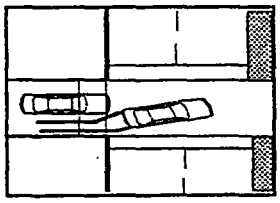
40% - Signaling Inconsistent with Driving Actions - A number of possibilities exist for the driver's signaling to be inconsistent with the associated driving actions. This cue occurs when inconsistencies such as the following are observed: failing to signal a turn or lane change; signaling opposite to the turn or lane change executed; signaling constantly with no accompanying driving action; and driving with four-way hazard flashers on.



35% - Stopping Inappropriately (Other Than in Traffic Lane) - The observed vehicle stops at an inappropriate location or under inappropriate conditions, other than in the traffic lane. Examples include stopping: in a prohibited zone; at a crosswalk; far short of an intersection; on a walkway; across lanes; for a green traffic signal; or for a flashing yellow traffic signal.



35% - Turning Abruptly or Illegally - The driver executes any turn that is abnormally abrupt or illegal. Specific examples include: turning with excessive speed; turning sharply from the wrong lane; making a U illegally; turning from outside a designated turn lane.



30% - Accelerating or Decelerating Rapidly - This cue encompasses any acceleration or deceleration that is significantly more rapid than that required by the traffic conditions. Rapid acceleration might be accompanied by breaking traction; rapid deceleration might be accompanied by an abrupt stop. Also a vehicle might alternately accelerate and decelerate rapidly.

30% - Headlights Off - The observed vehicle is being driven with both headlights off during a period of the day when the use of headlights is required.

A pocket-sized booklet listing these cues is available free of charge from:

National Highway Traffic Safety Administration
Administrative Operations Division
Room 4423, 400 Seventh Street, SW
Washington, DC 20590

Ask for Guide for Detecting Drunk Drivers at Night. (DOT HS 805 711).

NHTSA has also developed research identifying driving impairment cues for motorcyclists (ANACAPA Sciences, DOT HS 807 839, 1993).

Excellent Cues (50% or greater probability)

- Drifting during turn or curve
- Trouble with dismount
- Trouble with balance at a stop
- Turning problems (e.g., unsteady, sudden corrections, late braking, improper lean angle)
- Inattentive to surroundings
- Inappropriate or unusual behavior (e.g., carrying or dropping object, urinating at roadside, disorderly conduct, etc.)
- Weaving

Good Cues (30 to 50% probability)

- Erratic movements while going straight
- Operating without lights at night
- Recklessness
- Following too closely
- Running stop light or sign
- Evasion
- Wrong way

3. DIVIDED ATTENTION

It is important to understand the effects of alcohol are exhibited in driving so that the significance of visual cues will be recognized. Driving is a complex task involving a number of subtasks, many of which occur simultaneously. These include:

- steering;
- controlling the accelerator;
- signaling;
- controlling the brake pedal
- operating the clutch;
- operating to gearshift;
- observing other traffic;
- observing signal lights, stop signs & other traffic control devices; and
- making decisions (whether to stop, turn, speed up, slow down).

Safe driving demands the ability to divide attention among these various tasks. "Divided attention" simply means the ability to concentrate on two or more things at the same time. Under the influence of alcohol or drugs, a driver's ability to divide attention is impaired. As a result, the impaired driver tends to concentrate on only the most important or critical parts of driving and to disregard the less important parts, often creating unexpected or dangerous situations for other drivers. Two examples were particularly evident in the videotape segment Visual Detection of Driving While Intoxicated. In one instance the driver signaled for left turn, but actually turned right. In the other, the driver stopped for a green light. In each case the driver was suffering impaired ability to divide attention.

- The first driver was concentrating on steering, looking for the street where he wished to turn and slowing for the turn. The driver realized that a signal was required and actually operated the signal lever. But the driver didn't have enough attention left to move the lever in the right direction. Therefore he signaled left, but turned right.

- The second driver was concentrating on controlling the car's speed and direction. He noticed the traffic light, but he did not have enough attention left to react to the specific color of the light. Therefore he stopped for a green light.

Some of the most significant evidence from all three phases of DWI detection can be related directly to the effects of alcohol or drugs on divided attention ability. We will return to the concept of divided attention in Session VI. Personal Contact and Session VII. Pre-arrest Screening.

4. RECOGNIZING AND DESCRIBING INITIAL CUES

Observing the vehicle in operation is the first task in DWI detection. Proper performance of that task requires two distinct but related abilities:

- o the ability to recognize evidence of impairment; and
- o the ability to describe that evidence clearly and convincingly.

It is not enough that you observe and recognize symptoms of impaired driving. You also must be able to describe what happened so that others will have a clear mental picture of what took place. Improving your ability to recognize and clearly describe observational evidence requires practice.

5. THE STOPPING SEQUENCE

Your second task during Phase One of the detection process is to observe the manner in which the driver responds to your signal to stop, and to note any additional evidence of a DWI violation.

Cues reinforcing the suspicion of DWI may be found in the stopping sequence. After the command to stop is given, the impaired driver may exhibit additional important evidence of DWI. These cues may include:

- o an attempt to flee;
- o no response;
- o slow response;
- o an abrupt swerve;
- o sudden stop; and
- o striking the curb or another object.

Some of these cues come to light because the stop command places additional demands on the driver's ability to divide attention. The signal to stop creates a new situation with which the driver must cope. Flashing emergency lights or a siren demand and divert the driver's attention, requiring that the driver now divide attention between driving and responding to the stop command. Stopping itself requires the driver simultaneously to turn the steering wheel, put on the brakes, use a turn signal, and so on. Thus the driver's task becomes more complex when the stop command is given. A driver under the influence may not be able to handle this more complex task and additional evidence of impairment may appear.

It is your responsibility to recognize, record and convey the additional evidence of driving impairment that may come to light during the stopping sequence. This task, like Task One, observing the vehicle in operation, requires:

- o the ability to recognize evidence of impairment; and
- o the ability to describe that evidence clearly and convincingly.

Recognizing and describing the reinforcing cues of DWI that appear during the stopping sequence requires practice.

TEST YOUR KNOWLEDGE

INSTRUCTIONS: Complete the following sentences.

1. The Phase One tasks are _____

   _____

2. Two common symptoms of impairment are:

   a. _____

   b. _____

3. When two or more visual cues to DWI are seen add ____ to the largest value observed to calculate the probability that the driver has a BAC equal to or greater than _____ percent.

4. Alcohol impairs the ability to _____ among tasks.

5. Three cues reinforcing the suspicion of DWI which may be observed during the stopping sequence are:

   a. _____

   b. _____

   c. _____

SESSION VI

PHASE TWO: PERSONAL CONTACT

SESSION VI

PHASE TWO: PERSONAL CONTACT

Upon successfully completing this session, the students will be able to:

- o Identify typical clues of Detection Phase Two.
- o Describe the observed clues clearly and convincingly.

CONTENT SEGMENTS		LEARNING ACTIVITIES	
A.	Overview: Tasks and Decision	o	Instructor-Led Presentations
B.	Typical Investigation Clues of the Driver Interview	o	Video Presentation
C.	Recognition and Description of Investigation Clues	o	Instructor-Led Demonstrations
D.	Recognition and Description of Initial, Reinforcing and investigative Clues	o	Student's Presentations
E.	Interview/Questions Techniques		
F.	Typical Clues of the Exit Sequence		

PERSONAL CONTACT

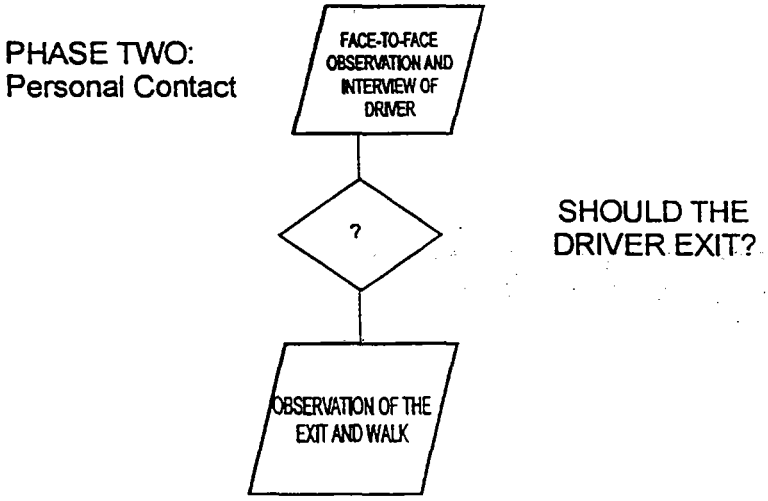
OVERVIEW

DWI Detection Phase Two: Personal Contact, like Phases One and Three, comprises two major evidence gathering tasks and one major decision. Your first task is to approach, observe and interview the driver while they are still in the vehicle to note any face-to-face evidence of impairment. During this face-to-face contact you may administer some simple pre-exit sobriety tests to gain additional information to evaluate whether or not the driver is impaired. After this evaluation, you must decide whether to request the driver to exit the vehicle for further field sobriety testing. In some jurisdictions departmental policy may dictate that all drivers stopped on suspicion of DWI be instructed to exit. It is important to note that by instructing the driver to exit the vehicle, you still are not committed to an arrest; this is simply another step in the DWI detection process. Once you have requested the driver to exit the vehicle, your second task is to observe the manner in which the driver exits to note any additional evidence of impairment.

NOTE: You may initiate Phase Two without Phase One. This may occur, for example, at a roadblock, or when you have responded to the scene of an accident.

TASK ONE

The first task of Phase Two, observation and interview of the driver, begins as soon as the suspect vehicle and the patrol vehicle have come to complete stops. It continues through your approach to the suspect vehicle and involves all conversation between you and the driver prior to the driver's exit from the vehicle.



You may have developed a strong suspicion that the driver is under the influence prior to the face-to-face observation and interview. You may have developed this suspicion by observing something unusual while the vehicle was in motion, or during the stopping sequence, or you may have developed no suspicion of DWI prior to the face-to-face contact. The vehicle operation and the stop may have been normal, you may have seen no actions suggesting DWI. For example, you may have stopped the vehicle for a simple taillight violation, or for speeding, where no erratic or unusual driving was evident. In some cases, Phase One will have been absent. For example, you may first encounter the driver and vehicle after an accident or when responding to a request for motorist assistance.

Regardless of the evidence that may have come to light during Detection Phase One, your initial face-to-face contact with the driver usually provides the first definite indications that the driver is under the influence.

DECISION

Based upon your face-to-face interview and observation of the driver, and upon your previous observations of the vehicle in motion and the stopping sequence, you must decide whether there is sufficient reason to instruct the driver to step from the vehicle.

For some law enforcement officers, this decision is automatic since their agency policy dictates that the driver always be told to exit the vehicle, regardless of the cause for the stop. Other agencies, however, treat this as a discretionary decision, to be based on what the officer sees, hears and smells during observation and interview with the driver while the driver is seated in the vehicle.

If you decide to instruct the driver to exit, you must closely observe the driver's actions during the exit from the vehicle and note any evidence of impairment.

TYPICAL INVESTIGATION CLUES: THE DRIVER INTERVIEW

Face-to-face observation and interview of the driver allows you to use three senses to gather evidence of alcohol or drug influence:

- the sense of sight;
- the sense of hearing; and
- the sense of smell.

SIGHT

There are a number of things you might see during the interview that would be describable clues or evidence of alcohol or drug influence. Among them are:

- o bloodshot eyes;
- o soiled clothing;
- o fumbling fingers;
- o alcohol containers;
- o drugs or drug paraphernalia;
- o bruises, bumps or scratches;
- o unusual actions.

HEARING

Among the things you might hear during the interview that would be describable clues or evidence of alcohol or drug influence are these:

- o slurred speech;
- o admission of drinking;
- o inconsistent responses;
- o abusive language;
- o unusual statements.

SMELL

There are things you might smell during the interview that would be describable clues or evidence of alcohol or drug influence. Typically these include:

- o alcoholic beverages;
- o marijuana;
- o "cover up" odors like breath sprays;
- o unusual odors.

REQUIRED ABILITIES

Proper face-to-face observation and interview of the driver demands two distinct but related abilities:

- o the ability to recognize the sensory evidence of alcohol or drug influence; and

- o the ability to describe that evidence clearly and convincingly.

Developing these abilities requires practice.

PRE-EXIT INTERVIEW TECHNIQUES

A basic purpose of the face-to-face observation and interview of the driver is to identify and gather evidence of alcohol or drug influence. This is the purpose of each task in each phase of DWI detection.

During the face-to-face observation and interview stage, it is not necessary to gather sufficient evidence to arrest the driver immediately for DWI. It is necessary only to gather enough evidence to justify requesting the driver to step from the vehicle for further investigation.

There are a number of techniques you can use while the driver is still behind the wheel. Most of these techniques apply the concept of divided attention. They require the driver to concentrate on two or more things at the same time. They include both questioning techniques and psychophysical (mind-body) tasks.

These techniques are not as reliable as the standardized field sobriety tests but they can still be useful for obtaining evidence of impairment. **THESE TECHNIQUES SHOULD NOT REPLACE THE SFST.**

Questioning Techniques

The questions you ask and the way in which you ask them can constitute simple divided attention tasks. Three techniques are particularly pertinent:

- asking for two things simultaneously;
- asking interrupting or distracting questions; and,
- asking unusual questions.

An example of the first technique, asking for two things simultaneously, is requesting that the driver produce both the driver's license and the vehicle registration. Possible evidence of impairment may come to light as the driver responds to this dual request. Be alert for the driver who:

- forgets to produce both documents;
- produces documents other than the ones requested;
- fails to see the license, registration or both while searching through wallet or purse;
- fumbles or drops wallet, purse, license or registration;
- is unable to retrieve documents using fingertips.

The second technique, asking interrupting or distracting questions, forces the driver to divide attention between searching for the license or registration and answering a new question. While the driver is responding to the request for license, registration or both, you ask an unrelated question like, "Without looking at your watch, can you tell me what time it is right now?" Possible evidence of impairment may be disclosed by the interrupting or distracting question. Be alert for the driver who:

- o ignores the question and concentrates only on the license or registration search;
- o forgets to resume the search after answering the question;
- o supplies a grossly incorrect answer to the question.

The third technique, asking unusual questions, is employed after you have obtained the driver's license and registration. Using this technique, you seek verifying information through unusual questions. For example, while holding the driver's license, you might ask the driver, "What is your middle name?"

There are many such questions which the driver normally would be able to answer easily, but which might prove difficult if the driver is impaired, simply because they are unusual questions. Unusual questions require the driver to process information; this can be especially difficult when the driver does not expect to have to process information. For example, a driver may respond to the question about the middle name by giving a first name. In this case the driver ignored the unusual question and responded instead to a usual -- but unasked -- question.

ADDITIONAL TECHNIQUES

ALPHABET

This technique requires the subject to recite a part of the alphabet. You instruct the subject to recite the alphabet beginning with a letter other than A and stopping at a letter other than Z. For example, you might say to a driver, "Recite the alphabet, beginning with the letter E as in Edward and stopping with the letter P as in Paul." This divides the driver's attention because the driver must concentrate to begin at an unusual starting point and recall where to stop.

COUNT DOWN

This technique requires the subject to count out loud 15 or more numbers in reverse sequence. For example, you might request a driver to, "Count out loud backwards, starting with the number 68 and ending with the number 53." This, too, divides attention because the driver must continuously concentrate to count backwards while trying to recall where to stop. NOTE: This technique should never be given using starting and stopping points that end in 0 or 5 because these numbers are too easy to recall. For example, do not request that the driver count backwards from 65 to 50. Instead, ask the driver to count backwards from 64 to 49.

FINGER COUNT

In this technique, the subject is asked to touch the tip of the thumb in turn to the tip of each finger on the same hand while simultaneously counting up one, two, three, four; then to reverse direction on the fingers while simultaneously counting down four, three, two, one.

In each instance, note whether and how well the subject is able to perform the divided attention task.

THE EXIT SEQUENCE

Your decision to instruct the driver to step from the vehicle usually is made only after you have developed a definite suspicion that the driver is under the influence.* Even though that suspicion may be very strong, usually the suspect is not yet under arrest when you give the instruction.

How the driver steps and walks from the vehicle and actions or behavior during the exit sequence may provide important evidence of impairment. Be alert to the driver who:

- shows angry or unusual reactions;
- cannot follow instructions;
- cannot open the door;
- leaves the vehicle in gear;
- "climbs" out of vehicle;
- leans against vehicle;
- keeps hands on vehicle for balance.

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*Except, however, that you may instruct a suspect to exit the vehicle as a means of ensuring your own safety. Safety considerations take precedence over all other considerations.

Proper face-to-face observation and interview of a driver requires the ability to recognize the sensory evidence of alcohol or drug influence and the ability to describe that evidence clearly and convincingly. Developing these abilities takes practice.

TEST YOUR KNOWLEDGE

INSTRUCTIONS: Complete the following sentences.

1. The two major evidence gathering tasks of Phase Two are _____

_____

_____

2. The major decision of Phase Two is _____

_____

_____

3. Among the describable clues an officer might <u>see</u> during the Phase Two interview are these three:

   a.

   b.

   c.

4. Among the describable clues an officer might <u>hear</u> during the interview are these three:

   a.

   b.

   c.

5. Among the describable clues an officer might smell during the interview are these two:

   a.

   b.

6. Three techniques an officer might use in asking questions constitute simple divided attention tasks. These techniques are:

   a.

   b.

   c.

7. The Count Down Technique requires the subject to _____

   _____

   _____

   _____

8. Leaning against the vehicle is a clue to DWI which may be observed during

   _____

   _____

SESSION VII

PHASE THREE: PRE-ARREST SCREENING

SESSION VII

PHASE THREE: PRE-ARREST SCREENING

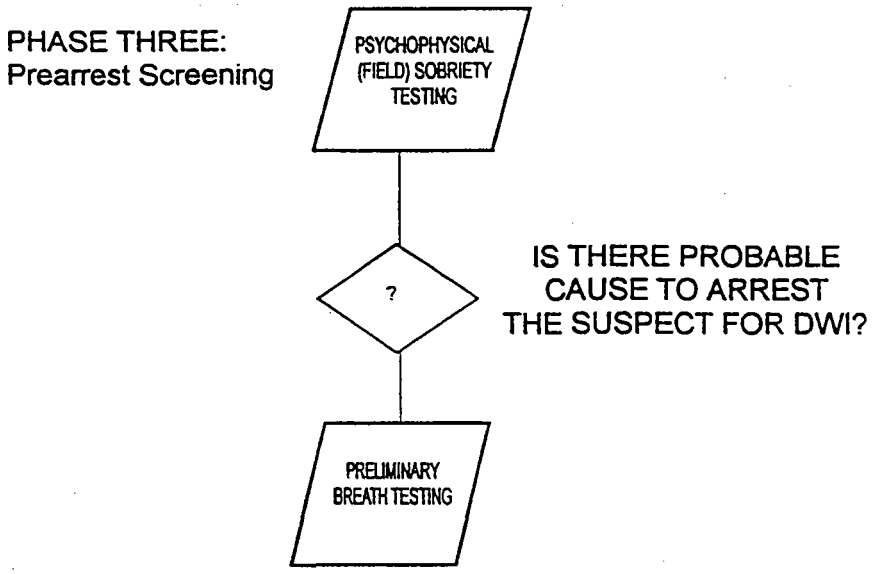
Upon successfully completing this session, the participants will be able to:

- Describe the role of psychophysical and preliminary breath tests.
- Define and describe the concepts of divided attention and nystagmus.
- Discuss the advantages and limitations of preliminary breath testing.
- Discuss the arrest decision process.

CONTENT SEGMENTS	LEARNING ACTIVITIES
A. Overview: Tasks and Decision	o Instructor-Led Presentations
B. Divided Attention Tests: Concepts, Examples, Demonstrations	o Instructor-Led Presentations
C. Horizontal Gaze Nystagmus - Concepts, Demonstration	
D. Vertical Nystagmus	
E. Advantages and Limitations of Preliminary Breath Testing	
F. The Arrest Decision	

PHASE THREE TASKS AND DECISION

Like Phases One and Two, DWI Detection Phase Three, Pre-arrest Screening has two major evidence gathering tasks and one major decision.



Your first task in Phase Three is to administer three scientifically validated psychophysical (field) sobriety tests. Based on these tests and on all other evidence from Phase One and Two, you must decide whether there is sufficient probable cause to arrest the driver for DWI. Your second task may then be to administer (or arrange for) a preliminary breath test (PBT) to confirm the chemical basis of the driver's impairment, if your agency uses PBTs. The entire detection process culminates in the arrest/no arrest decision.

PSYCHOPHYSICAL TESTS

Psychophysical tests are methods of assessing a suspect's mental and physical impairment. These tests focus precisely on the abilities needed for safe driving: balance, coordination, information processing and so on.

Psychophysical testing actually begins as soon as you come into face-to-face contact with the suspect and begin the interview. Psychophysical testing continues as the suspect steps from the vehicle and you observe the manner of the exit and walk from the vehicle. The most significant psychophysical tests are the three scientifically validated structured tests that you administer at roadside.

PRELIMINARY BREATH-TEST

The preliminary breath test (PBT) can help to corroborate all other evidence and to confirm your judgment as to whether the suspect is under the influence. Usually PBT results cannot be introduced as evidence against the driver in court. However, state laws vary in this regard.

THE ARREST DECISION

The DWI detection process concludes with the arrest decision. This decision is based on all of the evidence you have obtained during all three detection phases: on observation of the vehicle in motion and during the stopping sequence; on face to face observation and interview of the driver.

DIVIDED ATTENTION TESTS

INTRODUCTION

Many of the most reliable and useful psychophysical tests employ the concept of divided attention: they require the subject to concentrate on two things at once. Driving is a complex divided attention task. In order to operate a vehicle safely, drivers must simultaneously control steering, acceleration and braking; react appropriately to a constantly changing environment; and perform many other tasks. Alcohol and many other drugs substantially reduce a person's ability to divide attention among tasks like these. Under the influence of alcohol or other drugs, drivers often must ignore the less critical tasks of driving in order to focus their impaired attention on the more critical tasks. For example, a driver may ignore a traffic signal and focus instead on speed control.

Even when they are under the influence, many people can handle a single, focused attention task fairly well. For example, a driver may be able to keep the vehicle well within the proper traffic lane, as long as the road remains fairly straight. However, most people when under the influence cannot satisfactorily divide their attention to handle multiple tasks at once.

The concept of divided attention has been applied to psychophysical testing. Field sobriety tests that simulate the divided attention characteristics of driving have been developed and are being used by police departments nationwide. The best of these tests exercise the same mental and physical capabilities that a person needs to drive safely:

- information processing;
- short-term memory;

- o judgment and decision making;
- o balance;
- o steady, sure reactions;
- o clear vision;
- o small muscle control;
- o coordination of limbs.

Any test that requires a person to demonstrate two or more of these capabilities simultaneously is potentially a good psychophysical test.

Simplicity is the key to divided attention field sobriety testing. It is not enough to select a test that just divides the subject's attention. The test also must be one that is reasonably simple for the average person to perform when sober. Tests that are difficult for a sober subject to perform have little or no evidentiary value.

Two divided attention field sobriety tests that have proven accurate and effective in DWI detection are the Walk-and-Turn and the One-Leg Stand. These tests are described briefly below.

Walk-and-Turn

Walk-and-Turn is a test that has been validated through extensive research sponsored by the National Highway Traffic Safety Administration (NHTSA). It is a divided attention test consisting of two stages:

- o Instructions Stage; and,
- o Walking Stage.

In the Instructions Stage the subject must stand on a line with feet in heel-to-toe position, keep arms at sides, and listen to instructions. The Instructions Stage divides the subject's attention between a balancing task (standing on the line while maintaining the heel-to-toe position) and an information processing task (listening to and remembering instructions).

In the Walking Stage the subject must take nine heel-to-toe steps down the line, turn in a prescribed way, and take nine heel-to-toe steps up the line, while counting the steps out loud. During the turn, the subject must keep front foot on the line, turn in a prescribed manner, and use the other to take several small steps to complete the turn. The Walking Stage divides the subject's attention among a balancing task (walking heel-to-toe and turning on the line); a small muscle control task (counting out loud); and a short-term memory task (recalling the number of steps and the turning instructions).

The Walk-and-Turn test is administered in a standardized fashion, i.e., the same way every time. It is also interpreted in a standardized fashion. Specifically, officers administering Walk-and-Turn carefully observe the suspect's performance for eight clues:

- o can't balance during instructions;
- o starts too soon;
- o stops while walking;
- o doesn't touch heel-to-toe;
- o steps off line;
- o uses arms to balance;
- o loses balance on turn or turns incorrectly; and,
- o takes the wrong number of steps.

Sometimes, suspects cannot complete the test. Inability to complete the test occurs when the suspect:

- o steps off the line three or more times;
- o is in danger of falling;
- o cannot do the test.

Research shows that if a suspect exhibits two or more of the clues, or cannot complete the test, the suspect's BAC is likely to be above 0.10. This criterion has been shown to be reliable 68 percent of the time.

ONE-LEG STAND

The One-Leg Stand test also has been validated through NHTSA's research program. It is a divided attention test consisting of two stages:

- o Instructions Stage; and,
- o Balancing and Counting Stage.

In the Instruction Stage, the subject must stand with feet together, keep arms at sides, and listen to instructions. This divides the subject's attention between a balancing task (maintaining a stance) and an information processing task (listening to and remembering instructions.)

In the Balancing and Counting Stage, the subject must raise one leg, either leg, approximately six inches off the ground, toes pointed out, keeping both legs straight. While looking at the elevated foot, count out loud for 30 seconds in the following manner: "one thousand and one", "one thousand and two", until told to stop. This divides the subject's attention between balancing (standing on one foot) and small muscle control (counting out loud).

The count for a thirty-second period is an important part of the One-Leg Stand test. Research has shown that many impaired subjects are able to maintain one leg balance for up to 25 seconds, but that relatively few can do so for 30 seconds.

One-Leg Stand is also administered and interpreted in a standardized fashion. Officers carefully observe the suspect's performance and look for four specific clues:

- o sways while balancing;
- o uses arms to balance;
- o hops;
- o puts foot down.

Sometimes the suspect cannot complete the test. Inability to complete One-Leg Stand occurs when the suspect.

- o puts the foot down three or more times, during the 30 second count;
- o cannot do the test.

Research shows that, when the suspect produces two or more clues or is unable to complete the test, it is likely that the BAC is above 0.10. This criterion has been shown to be reliable 65 percent of the time.

HORIZONTAL GAZE NYSTAGMUS

"Nystagmus" means an involuntary jerking of the eyes. Horizontal gaze nystagmus (HGN) refers to an involuntary jerking that occurs as the eyes gaze toward the side. In addition to being involuntary the person experiencing the nystagmus ordinarily is unaware that the jerking is happening, and is powerless to stop or control it.

Under the influence of alcohol or certain other drugs, the involuntary jerking of the eyes becomes much more distinct, and readily noticeable. And, as a person's blood alcohol concentration increases, the eyes will begin to jerk sooner as they move to the side.

Horizontal gaze nystagmus is the most reliable field sobriety test. Especially when used in combination with the divided attention tests, it will help police officers correctly distinguish suspects who are under the influence of alcohol from those who are not.

Prior to administration of HGN, the eyes are checked for equal tracking ability (can they follow an object together) and equal pupil size. If the eyes do not track together, or if the pupils are noticeably unequal in size, the chance of medical disorders or injuries causing the nystagmus is present.

When the HGN test is administered always beginning with subject's left eye. Each eye is examined for three specific clues.

- As the eye moves from side to side, does it move smoothly or does it jerk noticeably? (As people become under the influence of alcohol, their eyes exhibit a lack of smooth pursuit as they move from side to side.)

- When the eye moves as far to the side as possible and is kept at that position for several seconds, does it jerk distinctly? (Distinct nystagmus at maximum deviation of the eye is another clue of alcohol influence.)

- As the eye moves toward the side, does it start to jerk before it has moved through a 45-degree angle? (Onset of nystagmus prior to 45-degrees is another clue of alcohol influence.)

As a person's blood alcohol concentration increases it is more likely these clues will appear.

The maximum number of clues that may appear in one eye is three. The maximum total number for any suspect is six. Research shows that if four or more clues are evident, it is likely that the suspect's blood alcohol concentration is above 0.10. The reliability of this four-or-more clues criterion is 77%.

VERTICAL NYSTAGMUS

Vertical nystagmus refers to an involuntary jerking that occurs as the eyes gaze upward to their maximum point. Although this type of nystagmus was not examined in the research that led to the validation of the Standardized Field Sobriety Test battery, field experience has indicated that a check for vertical nystagmus has provided a reliable indicator of high doses of CNS depressants (including alcohol), inhalants, or PCP for that individual.

PRELIMINARY BREATH TESTING

The basic purpose of preliminary breath testing (PBT) is to demonstrate the association of alcohol with the observable evidence of the suspect's impairment. The suspect's impairment is established through sensory evidence: what the officer sees, hears and smells. The PBT provides the evidence that alcohol is the chemical basis of that impairment by yielding an on-the-spot indication of the suspect's blood alcohol concentration (BAC). The PBT provides direct indication of the BAC level. It does not indicate the level of the suspect's impairment. Impairment varies widely among individuals with the same BAC level.

Preliminary breath testing, like psychophysical testing, is a stage in the pre-arrest screening of a DWI suspect. Usually the suspect is not yet under arrest when requested to submit to the preliminary breath test. The DWI incident remains at the investigative stage; the accusatory stage has not yet begun. The PBT result is only one of many factors the officer considers in determining whether the suspect should be arrested for DWI. It should never be the sole basis for a DWI arrest. Nevertheless, the PBT result is an important factor because it provides direct indication of alcohol influence. All other evidence, from initial observation of the vehicle in operation through formal psychophysical testing, indicates alcohol influence indirectly, based on impairment of the suspect's mental and physical faculties.

ADVANTAGES OF PBT

A PBT offers several important advantages for DWI detection. It may:

- corroborate other evidence by demonstrating that the suspicion of alcohol influence is consistent with the officer's observations of the suspect's mental and physical impairment.

- confirm the officer's own judgment and help gain confidence in evaluating alcohol impairment accurately, based on observations and psychophysical tests. (Many officers experienced in DWI enforcement find that they rely less and less on the PBT as their confidence in their own powers of detection increases.)

- disclose the possibility of medical complications or impairment due to drugs other than alcohol. (The PBT can confirm or deny that alcohol is the cause of the observed impairment. For example, observed psychophysical impairment coupled with a PBT result showing a very low BAC indicates an immediate need to investigate the possibility that the suspect has ingested a drug other than alcohol or suffers from a medical problem.)

- help to establish probable cause for a DWI arrest. (The role of the PBT in establishing probable cause may be affected by the evidentiary value of PBT results in your state. Refer to Unit 4, Part 4 for more information. Consult your specific PBT law, your supervisor, or the local prosecutor for clarification, if necessary.)

LIMITATIONS OF PBT

Preliminary breath testing may have both evidentiary limitations and accuracy limitations. Evidentiary limitations vary with specific laws. In some states PBT results are admissible as evidence; in other states they are not admissible. Where the results are admissible, there may be differences in the weight or value they are given. Consult your state PBT law, your supervisor or your local prosecutor, as necessary, for clarification.

PBT instruments have accuracy limitations. Although all PBT instruments currently used by law enforcement are reasonably accurate, they are subject to the possibility of error, especially if they are not used properly. There are factors that can affect the accuracy of preliminary breath testing devices. Some of these factors tend to produce "high" test results; others tend to produce "low" results.

There are two common factors that tend to produce high results on a PBT.

- Residual mouth alcohol. After a person takes a drink, some of the alcohol will remain in the mouth tissues. If the person exhales soon after drinking, the breath sample will pick up some of this left-over mouth alcohol. In this case, the breath sample will contain an additional amount of alcohol and the test result will be higher than the true BAC.

  It takes approximately 15 minutes for the residual alcohol to evaporate from the mouth. Evaporation cannot be speeded up significantly by having the suspect gargle with water or in any other way.

  The only sure way to eliminate this factor is to make sure the suspect does not take any alcohol for at least 15 to 20 minutes before conducting a breath test. Remember, too, that most mouthwashes, breath sprays, cough syrups, etc., contain alcohol and will produce residual mouth alcohol. Therefore, it is always best not to permit the suspect to put anything in their mouth for at least 15 to 20 minutes prior to testing.

- Breath Contaminants. Some types of preliminary breath tests might react to certain substances other than alcohol. For example, substances such as ether, chloroform, acetone, acetaldehyde and cigarette smoke conceivably could produce a positive reaction on certain devices. If so, the test would be contaminated and its result would be higher than the true BAC. Normal characteristics of breath samples, such as halitosis, food odors, etc., do not affect accuracy.

There are two common factors that tend to produce low PBT results.

- Cooling of the breath sample. If the captured breath sample is allowed to cool before it is analyzed, some of the alcohol vapor in the breath may turn to liquid and precipitate out of the sample. If that happens, the subsequent analysis of the breath sample will produce a low BAC result.

- The composition of the breath sample. Breath composition means the mixture of the tidal breath and alveolar breath. Tidal breath is breath from the upper part of the lungs and the mouth. Alveolar breath is deep lung breath. Breath testing should be conducted on a sample of alveolar breath, obtained by having the subject blow into the PBT instrument until all air is expelled from the lungs.

THE ARREST DECISION

Your arrest/no arrest decision is the culmination of the DWI detection process. Your decision is based on all the evidence you have accumulated during each detection phase.

PHASE ONE:
- Initial observation of vehicle in motion;
- Observation of the stop.

PHASE TWO:
- Face-to-face observation and interview;
- Observation of the exit.

PHASE THREE:
- SFSTs;
- Preliminary breath tests.

Your decision involves a careful review of each of the observations you have made. Conduct a "mental summary" of the evidence collected during vehicle in motion, personal contact and pre-arrest screening. If all of the evidence, taken together, establishes probable cause to believe that DWI has been committed, you should effect physical arrest of the suspect for DWI.

Under no circumstances should you charge the suspect with a lesser offense instead of DWI if there is probable cause to believe that DWI has been committed. Any reduction of DWI to a lesser charge is the responsibility of the prosecutor or judge.

TEST YOUR KNOWLEDGE

INSTRUCTIONS: Complete the following sentences.

1. The two major evidence gathering tasks of Phase Three are _____

_____

_____

_____

2. The major decision in Phase Three is _____

_____

_____

_____

3. The entire DWI detection process culminates in _____

_____

_____

_____

4. Divided attention tests require the subject to _____

_____

_____

_____

5. Among the mental and physical capabilities a person needs to drive safely are these four:

   a.

   b.

   c.

   d.

6. The two stages of the Walk-and-Turn are:

   a.

   b.

7. The two stages of the One-Leg Stand are:

   a.

   b.

8. The purpose of PBT is _____

   _____

   _____

   _____

9. Two factors that produce <u>high</u> results on a PBT are:

   a.

   b.

10. Two factors that produce <u>low</u> results on a PBT are:

    a.

    b.

SESSION VIII

CONCEPTS AND PRINCIPLES OF THE STANDARDIZED FIELD SOBRIETY TESTS

SESSION VIII

CONCEPTS AND PRINCIPLES OF THE STANDARDIZED FIELD SOBRIETY TESTS

Upon successfully completing this session, the student will be able to:

- Discuss the development and validity of the standardized field sobriety tests.
- Discuss the different types of nystagmus and their effects on the horizontal gaze nystagmus test.
- Discuss and properly administer the three standardized field sobriety tests.
- Discuss and recognize the clues of the three standardized field sobriety tests.
- Describe in a clear and convincing fashion and properly record the results of the three standardized field sobriety tests on a standard note taking guide.
- Discuss the limiting factors of the three standardized field sobriety tests.

CONTENTS SEGMENTS	LEARNING ACTIVITIES
A. Overview: Development and Validity	o Instructor-Led Presentation
B. Horizontal Gaze Nystagmus	o Instructor-Led Demonstration
C. Walk-and-Turn	o Student Practice Session & Demonstration
D. Combining the Clues of the Horizontal Gaze Nystagmus and Walk-and-Turn	
E. One-Leg Stand	
F. Limitations of the Three Tests	
G. Taking Field Notes on the Standardized Field Sobriety Tests	

OVERVIEW OF SFST
RESEARCH AND DEVELOPMENT

1. First Phase: The Developmental Research

   A. The research objectives

      - To evaluate currently used physical coordination tests to determine their relationship to intoxication and driving impairment.

      - To develop more sensitive tests that would provide more reliable evidence of impairment.

      - To standardize the tests and observations.

   B. Who conducted the research?

      Southern California Research Institute (SCRI)

      The final report:

      Burns, Marcelline and Moskowitz, Herbert
      Psychophysical Tests for DWI; June, 1977
      NHTSA Report Number DOT HS-802 424
      (available from National Technical Information
      Service, Springfield, Virginia 22161)

   C. Who were the test subjects?

      They were 238 volunteers, participating in one testing session.

      The volunteers were interviewed by SCRI staff, and on the basis of the interview they were classified as either light, moderate or heavy drinkers. They were randomly assigned to "target BAC" levels appropriate to their classifications. The following shows the distribution of BACs achieved by volunteers:

	Light Drinkers	Moderate Drinkers	Heavy Drinkers	Totals
No Alcohol (0.00)	26	27	26	79
Approximately 0.05	36	16	3	55
Approximately 0.075	--	6	7	13
Approximately 0.10	--	37	13	50
Approximately 0.15	--	--	41	41

D. Who tested the subjects?

Ten police officers, representing four agencies in the vicinity of Los Angeles, did all of the testing. Each officer examined an average of 23-24 volunteers. While the officer was conducting the examinations, a member of the SCRI staff observed the examinations.

NOTE: Neither the volunteer nor the officer nor the observer knew the volunteer's BAC. Separate members of the SCRI staff handled the dosing and breath testing of volunteers.

E. What tests were administered?

Each volunteer was subjected to six tests:

- o One-Leg Stand
- o Finger-To-Nose
- o Finger Count
- o Walk-and-Turn
- o Tracing (a paper-and-pencil exercise)
- o Nystagmus (called "alcohol gaze nystagmus" in the final report)

Each officer was given one day's training in the administration and scoring of these tests prior to conducting the experiment. NOTE: Only two of the ten officers had any prior experience with nystagmus.

F. What did the researchers learn?

The researchers analyzed their data and found that, using the scores from all six tests, they could correctly classify a volunteer's BAC as being either above or below 0.10 about 83 percent of the time.

Further, the researchers found that this same level of reliability could be achieved just by considering the scores on nystagmus, Walk-and-Turn, and one-leg stand.

What about the 17% of volunteers whose BACs were misclassified? How did the researchers account for them?

First, half of the volunteers who were misclassified had BACs between 0.08 and 0.12, a "borderline" range in which it can be difficult to distinguish slight differences in impairment. Secondly, almost all of the remaining misclassified volunteers were either light drinkers with BACs of at least 0.05 (who may well have appeared and been very impaired at that level), or heavy drinkers with BACs below 0.15 (whose experience with alcohol may have helped them mask the signs of impairment).

G. What was the overall conclusion?

The three-test battery made up of Horizontal Gaze Nystagmus, Walk-and-Turn, and one-leg stand clearly appeared to offer a very reliable field sobriety testing procedure. But these tests were not yet standardized in their final form. Standardization was achieved in the next phase of research.

H. What were the research objectives?

- To complete the development and validation of the sobriety test battery.
- To assess in the field the battery's feasibility, and its effectiveness for estimating BAC and facilitating identification of persons with BACs above 0.10.

Note: Southern California Research Institute (SCRI) conducted the test validation research.

The final report:

Tharp, V., Burns, M. and Moskowitz, H.
Development and Field Test of Psychophysical Tests for DWI Arrest, March, 1981, NHTSA Report Number DOT HS-805 864 (available from NTIS, Springfield, Virginia 22161)

I. Who were the test subjects?

During the first (laboratory) portion of this research effort, the test subjects were 296 volunteers. The 296 laboratory subjects each participated in at least one testing session. And, 145 of them returned for a second session, for a total of 441 subject-days of testing. The following table shows the distribution of these subjects by drinker classification and "target BAC"; the numbers in parenthesis refer to the subjects who returned for a second session.

	Light Drinkers	Moderate Drinkers	Heavy Drinkers	Totals
No Alcohol (0.00)	30 (18)	32 (16)	35 (16)	97 (50)
Approximately (0.05)	33 (15)	33 (16)	36 (17)	102 (48)
Approximately (0.11)	--	30 (15)	34 (14)	64 (29)
Approximately (0.15)	--	--	33 (18)	33 (18)

J. Who tested the subjects?

For the laboratory portion of the study, ten police officers from three agencies in the metropolitan Los Angeles area did the testing. Each officer examined an average of 44 subjects (including returnees). While the officer conducted the examinations, a member of the SCRI staff observed. Neither the volunteer, nor the officer nor the observer knew the volunteer's BAC.

For the field portion of the study, participating officers were drawn from four stations of the Los Angeles County Sheriff's Office. They included a group called the "experimentals" (who received training in the SFSTs), and a group of "controls" (who were not trained until the final stage of the study). Both groups were instructed to complete data forms for all of their traffic stops during the study period. In addition, SCRI researchers periodically rode with every officer to monitor their performance.

K. What tests were administered?

In both the laboratory and field portion of the study, participating officers (except the "controls") administered Horizontal Gaze Nystagmus, Walk-and-Turn, and One-Leg Stand. Some of the officers had some prior experience with these tests, but all received one-half day's training in test administration and scoring.

In both the laboratory and field portions of this study, officers were instructed to record the following nystagmus data, for each eye:

- o Whether onset occurred within 45 degrees, with at least 10% of the white of the eye showing;
- o The estimated angle of onset;
- o Whether the eye was unable to follow smoothly;
- o Whether the nystagmus at maximum deviation was absent, minimal, moderate or heavy.

One "point" was "scored" for each eye if onset occurred within 45 degrees; if the eye was unable to follow smoothly; and, if the nystagmus at maximum deviation was moderate or heavy.

L. What did the researchers learn?

(1) The Laboratory Phase

Results of the laboratory study demonstrated that the battery of three tests could be used reliably to distinguish subjects with BACs of 0.10 or more from those with lower BACs. Collectively, the ten officers and two observers were correct in classifying subjects' BACs (above or below 0.10) about 82% of the time. Subsequent to publication of the SCRI report, NHTSA re-analyzed the laboratory test data and found that the nystagmus test, by itself, could have produced 77% accurate classifications. Similarly, Walk-and-Turn was capable of 68% unaided accuracy, and One-Leg Stand of 65%. NHTSA also found that it would be possible to combine the results of nystagmus and Walk-and-Turn in a "decision matrix", and achieve 80% accuracy.

(2) The Field Phase

SCRI reported a number of problems that plagued the field study, chief among which was a lack of consistency by participating officers in submitting data forms. SCRI concluded that the field test data would not support in-depth statistical analysis, but nevertheless disclosed some favorable trends:

- o after training on the test battery, officers tended to make more DWI arrests; and,

- o trained officers were more accurate in identifying suspects whose BACs are above 0.10.

The overall conclusion of this study was that the test battery works well. But it remained necessary to conduct a rigorous field test.

M. The Field Validation and Standardization of the Tests

(1) What were the research objectives?

- o To develop standardized, practical and effective procedures for police officers to use in reaching arrest/no arrest decisions;
- o To test the feasibility of the procedures in operational conditions; and,
- o To secure data to determine if the tests will discriminate as well in the field as in the laboratory.

In support of the first of the objectives, the NHTSA research staff began by re-analyzing the SCRI data with a view toward systematizing the administrative and "scoring" procedures for the three tests. The intent was to ensure that the tests would be quick and easy to use; that they could each be used independently of one another, i.e., if the officer elected to use only one or two of the tests; and, that they would maximize the detection of drivers with BACs above 0.10 while minimizing the continued investigation of persons below that level.

Essentially, the current administrative and "scoring" procedures, and "scoring" criteria, for the three tests emerged from this re-analysis.

(2) Who conducted the research?

SCRI sponsored by The National Highway Traffic Safety Administration (NHTSA)

The final report:

Anderson, T., Schweitz, R., and Snyder, M.
Field Evaluation of a Behavioral Test Battery for DWI
September, 1983, NHTSA Report Number DOT HS-806 475
(available from NTIS, Springfield, Virginia 22161)

(3) Who were the test subjects?

They were 1,506 drivers stopped for suspicion of DWI during a three-month period during late 1982/early 1983. Of these, approximately 80% were examined using all three tests.

(4) Who tested the subjects?

Police officers representing four large agencies in the eastern portion of the country did the testing. All participating officers completed a one day training session prior to the beginning of the study. The training included practice in administering the tests to volunteer drinkers.

(5) What tests were administered?

The officers used the three tests that make up the Standardized Field Sobriety Testing battery. As previously noted, not all subjects were exposed to all three tests, primarily because circumstances of the stop location and/or the subject sometimes precluded use of one or two of the tests. But 89% of subjects were examined using the horizontal gaze nystagmus test, 84% on Walk-and-Turn and 82% on One-Leg Stand.

(6) What were the test administrative and "scoring" procedures?

The procedures followed in using and interpreting the tests were essentially those spelled out in the current NHTSA training program DWI Detection and Standardized Field Sobriety Testing (1987 Update). The tests are "standardized" in the sense that:

- o they are always administered in the same way;
- o the officer administering the tests always looks for a specific set of clues on each test; and,
- o the officer always assesses a suspect's performance relative to a specific criterion for each test.

N. The "standardized" elements of the Horizontal Gaze Nystagmus test

(1) Standardized Administrative Procedures

- o Hold the stimulus 12-15 inches in front of the suspect's nose.
- o Keep the tip of the stimulus slightly above the suspect's eyes.

- o Always move the stimulus smoothly.
- o Always check for all three clues in both eyes, starting with suspect's left eye.
- o Check the clues in this sequence: lack of smooth pursuit; distinct nystagmus at maximum deviation; onset of nystagmus prior to 45 degrees.
- o Always check for each clue at least twice in each eye.

(2) Standardized Clues

- o Lack of smooth pursuit.
- o Distinct nystagmus at maximum deviation.
- o Onset of nystagmus prior to 45 degrees.

No other "clues" are recognized by NHTSA as valid indicators of horizontal gaze nystagmus. In particular, NHTSA does not support the allegation that onset angle can reliably be used to estimate BAC, and considers any such estimation to be misuse of the horizontal gaze nystagmus test.

(3) Standardized Criterion

The maximum number of clues of horizontal gaze nystagmus that a suspect can exhibit is six. That would occur when all three clues are observed in both eyes. If a suspect exhibits four or more clues, it should be considered evidence that the suspect's BAC is above 0.10. (New information indicates that HGN may be present in suspects under the influence of certain other drugs.)

O. The "standardized" elements of Walk-and-Turn

(1) Standardized Administrative Procedures

- o Always begin by having the suspect assume the heel-toe stance, right foot in front of left.
- o Verify that the suspect understands that the stance is to be maintained while the instructions are given.
- o If the suspect breaks away from the stance as the instructions are given, cease giving instructions until the stance is resumed.

- o Tell the suspect that they will be required to take 9 heel-to-toe steps down the line, to turn around, and to take 9 heel-to-toe steps up the line.

- o Demonstrate several heel-toe steps.

- o Demonstrate the turn.

- o Tell the suspect to keep the arms at the sides, to watch the feet, to count the steps aloud, and not to stop walking until the test is completed.

- o Ask the suspect whether they understand; if not, re-explain whatever is not understood.

- o Tell the suspect to begin.

- o If the suspect staggers or stops, allow them to resume from the point of interruption; do not require the suspect to start over from the beginning.

(2) Standardized Clues

- o Loses balance during the instruction stage (feet must break away from the heel-toe stance).

- o Starts walking too soon.

- o Stops while walking.

- o Misses heel-to-toe while walking (misses by at least one-half inch).

- o Raises arms from side while walking (six inches or more).

- o Steps off the line.

- o Turns improperly.

- o Takes the wrong number of steps.

These eight are the only validated clues of Walk-and-Turn. However, officers may see or hear other noteworthy evidence while the suspect is performing this test, and officers should include any such observations in their reports.

Officers should note in their reports how many times each clue appears. However, for purposes of applying the standardized criterion (discussed below), a clue should be "counted" only once. Except if the suspect steps off the line three or more times, then the test is terminated and scored as if all eight clues were observed.

Also, if the suspect cannot perform or complete the test, it should be considered that they have exhibited all eight clues.

(3) Standardized Criterion

If a suspect exhibits at least two clues on Walk-and-Turn, it should be considered evidence that the suspect's BAC is above 0.10.

P. <u>The "standardized" elements of One-Leg Stand</u>

(1) Standardized Administration Procedures

- o Tell the suspect to stand with feet together, and arms at sides.
- o Tell the suspect not to start the test until told to do so.
- o Ask the suspect if they understand.
- o Tell the suspect to stand on one foot, with the other foot held straight about six inches off the ground, toes pointed out.
- o Demonstrate the stance.
- o Tell the suspect to count for 30 seconds in the following manner: "one thousand and one," "one thousand and two," until told to stop.
- o Demonstrate the count, for several seconds.
- o Ask the suspect whether they understand; if not, re-explain whatever is not understood.

- o Tell the suspect to begin.

- o If the suspect stops or puts the foot down, allow them to resume at the point of interruption; do not require the count to begin again at "one thousand and one".

(2) Standardized Clues

- o Sways
- o Puts foot down
- o Hops
- o Raises arms from side (six inches or more)

These are the only four validated clues of One-Leg Stand. However, officers may see or hear other noteworthy evidence while this test is being performed, and should include any such evidence in their reports.

If the suspect cannot perform or complete the test, it should be considered that they have exhibited all four clues. One event that would warrant this is if the suspect puts the foot down three or more times.

(3) Standardized Criterion

If the suspect exhibits two or more clues on One-Leg Stand, it should be considered evidence that the suspect's BAC is above 0.10. As with Walk-and-Turn, clues should be counted only once in applying this criterion.

Q. <u>What did the researchers learn?</u>

The three standardized tests were found to be highly reliable in identifying subjects whose BACs were 0.10 or more. Considered independently, the nystagmus test was 77% accurate, the Walk-and-Turn, 68% accurate, and the One-Leg Stand, 65% accurate. However, Horizontal Gaze Nystagmus used in combination with Walk-and-Turn was 80% accurate.

The importance of this large scale field validation study deserves to be emphasized. It was the first significant assessment of the "workability" of the standardized field sobriety tests under actual enforcement conditions, and it was the first time that completely objective clues and scoring criteria had been defined for the tests. The results of the study validated the SFSTs.

But it is also necessary to emphasize one final and major point. This validation applies ONLY WHEN THE TESTS ARE ADMINISTERED IN THE PRESCRIBED, STANDARDIZED MANNER; AND ONLY WHEN THE STANDARDIZED CLUES ARE USED TO ASSESS THE SUSPECT'S PERFORMANCE; AND, ONLY WHEN THE STANDARDIZED CRITERIA ARE EMPLOYED TO INTERPRET THAT PERFORMANCE.

IF ANY ONE OF THE STANDARDIZED FIELD SOBRIETY TEST ELEMENTS IS CHANGED, THE VALIDITY IS COMPROMISED.

OVERVIEW OF HORIZONTAL GAZE NYSTAGMUS

Definition

Nystagmus is the involuntary jerking of the eyes, occurring as the eyes gaze toward the side. Also, nystagmus is natural, normal phenomenon. Alcohol and certain other drugs do not cause this phenomenon, they merely exaggerate or magnify it.

Categories of Nystagmus

Nystagmus of several different origins may be seen. There are three general categories of nystagmus:

1. Vestibular Nystagmus is caused by movement or action to the vestibular system.

   A. Types of vestibular nystagmus:

   - Rotational Nystagmus occurs when the person is spun around or rotated rapidly, causing the fluid in the inner ear to be disturbed. If it were possible to observe the eyes of a rotating person, they would be seen to jerk noticeably.

   - Post Rotational Nystagmus is closely related to rotational nystagmus: when the person stops spinning, the fluid in the inner ear remains disturbed for a period of time, and the eyes continue to jerk.

   - Caloric Nystagmus occurs when fluid motion in the canals of the vestibular system is stimulated by temperature as by putting warm water in one ear and cold in the other.

- o Positional Alcohol Nystagmus (PAN) occurs when a foreign fluid, such as alcohol, that alters the specific gravity of the blood is in unequal concentrations in the blood and the vestibular system. This causes the vestibular system to respond to gravity in certain positions, resulting in nystagmus.

  PAN I occurs when the alcohol concentration in the blood is greater than in the inner ear fluid. PAN I occurs while BAC is increasing.

  PAN II occurs when the alcohol concentration in the inner ear fluid is greater than in the blood stream. This occurs while BAC is decreasing.

2. Nystagmus can also result directly from neural activity:

   - o Optokinetic Nystagmus occurs when the eyes fixate on an object that suddenly moves out of sight, or when the eyes watch sharply contrasting moving images.

     Examples of optokinetic nystagmus include watching scenery while looking out the window of a moving train or watching a rapidly spinning wheel that has alternating white and black spokes. The horizontal gaze nystagmus test will not be influenced by optokinetic nystagmus if administered properly.

   - o Physiological Nystagmus is a natural nystagmus that keeps the sensory cells of the eye from tiring. It is the most common type of nystagmus. It happens to all of us, all the time. This type of nystagmus produces extremely minor tremors or jerks of the eyes. These tremors are generally too small to be seen with the naked eye. Physiological nystagmus will have no impact on our standardized field sobriety tests, because its tremors are generally invisible.

   - o Gaze Nystagmus occurs as the eyes move from the center position. Gaze nystagmus is separated into three types:

     (1) Horizontal Gaze Nystagmus occurs as the eyes move to the side. It is the observation of the eyes for horizontal gaze nystagmus that provides the first and most valid test in the standardized field sobriety testing battery. Although this type of nystagmus is most accurate for determining alcohol influence, its presence may also indicate use of PCP, certain inhalants and other central nervous system depressants.

(2) Vertical Gaze Nystagmus occurs as the eyes are held in their upmost position. The presence of this type of nystagmus is associated with PCP. High doses for the individual of CNS depressants (including alcohol) and inhalants may also cause this to occur. The drugs that produce vertical nystagmus are the same ones that produce horizontal gaze nystagmus.

Note: All drugs that induce horizontal gaze nystagmus may also induce vertical nystagmus, if enough of the drug is taken. There is no drug that will cause vertical nystagmus that does not cause horizontal nystagmus. If vertical nystagmus is present and horizontal nystagmus is not, it could be a medical condition.

(3) Resting Nystagmus is referred to as jerking as the eyes look straight ahead. This condition is not frequently seen. Its presence usually indicates high doses of PCP. If detected, take precautions. (**OFFICER SAFETY.**)

3. Nystagmus may also be caused by certain pathological disorders. They include brain tumors and other brain damage or some diseases of the inner ear. These pathological disorders occur in very few people and in even fewer drivers.

4. Medical Impairment.

   A. The examinations that you can conduct to assess possible medical impairment include:

   - o Tracking ability
   - o Pupil size

     Note: If suspect has an obvious abnormal eye disorder or an artificial eye, HGN should not be administered.

Procedures of Horizontal Gaze Nystagmus Testing: The Three Clues

As explained earlier, nystagmus means a jerking of the eyes. There are a number of different kinds of nystagmus. The test you will use at roadside is a test of "horizontal gaze nystagmus" -- the nystagmus that occurs when the eyes move to the side. Many eyes will show some jerking if moved far enough to the side. Under the influence of alcohol and certain other drugs, three signs often will be observed:

1. The suspect cannot follow a slowly moving stimulus smoothly with the eyes; instead, the eyes can be observed to jerk or "bounce" as they move left and right in pursuit of a smoothly moving object, such as a pencil or penlight.

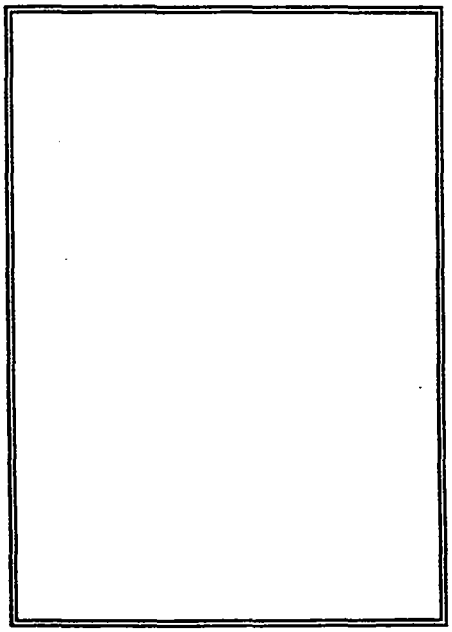
2. When you have the suspect move their eyes as far to the side as possible, distinct nystagmus will be evident when the eye is held at maximum deviation for approximately four seconds; some people exhibit slight jerking of the eye at maximum deviation, even when sober, but when under the influence of alcohol, the jerking is likely to be very pronounced, and easily observable.

3. The more intoxicated a person becomes, the less the eyes have to move toward the side before jerking begins. Usually when a person's BAC is above 0.10, the jerking will begin before the eye has moved 45 degrees to the side.

Estimating a 45-Degree Angle

Because the 45-degree angle is a key factor in assessing a suspect's degree of alcohol influence, it is important to know how to estimate that angle.

For practice, a 45-degree template can be prepared by making a 15"-square cardboard and connecting its opposite corners with a diagonal line.



To use this device, hold it up so that the person's nose is above the diagonal line. Be certain that one edge of the template is centered on the nose and perpendicular to (or, at right angles to) the face. Have the person you are examining follow a penlight or some other object until suspect is looking down the 45-degree diagonal. Note the position of the eye. With practice, you should be able to recognize this angle without using the template.

Specific Procedures

Begin by asking "are you wearing contact lenses", make a note whether or not the suspect wears contacts before starting the test.

If the suspect is wearing eyeglasses, have them removed.

Give the suspect the following instructions from a position of interrogation (FOR OFFICER SAFETY KEEP YOUR WEAPON AWAY FROM THE SUSPECT):

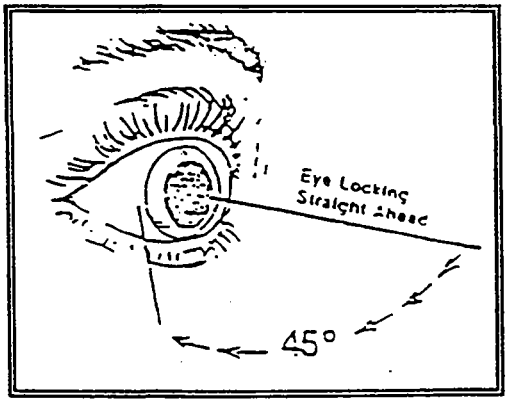
- "I am going to check your eyes."
- "Keep your head still and follow this stimulus with your eyes only."
- "Keep focusing on this stimulus until I tell you to stop."

Position the stimulus approximately 12-15 inches from the suspect's nose and slightly above eye level. Check the suspect's eyes for the ability to track together. Move the stimulus smoothly across the suspect's entire field of vision. Check to see if the eyes track the stimulus together or one lags behind the other. If the eyes don't track together it could indicate a possible medical disorder, injury, or blindness.

Next, check to see that both pupils are equal in size. If they are not, this may indicate a head injury.

Check the suspect's left eye by moving the stimulus to your right. Move the stimulus smoothly, at a speed that requires about two seconds to bring the suspect's eye as far to the side as it can go. While moving the stimulus, look at the suspect's eye and determine whether it is <u>able to pursue smoothly</u>. Now, move the stimulus all the way to the left, back across suspect's face checking if the right eye pursues smoothly. Movement of the stimulus should take approximately two seconds out and two seconds back for each eye. Repeat the procedure.

After you have checked both eyes for lack of smooth pursuit, check the eyes for <u>distinct nystagmus at maximum deviation</u> beginning with the suspect's left eye. Simply move the object to the suspect's left side until the eye has gone as far to the side as possible. Usually, no white will be showing in the corner of the eye at maximum deviation. Hold the eye at that position for approximately four seconds, and observe the eye for distinct nystagmus. Move the stimulus all the way across the suspect's face to check the right eye holding that position for approximately four seconds. Repeat the procedure.



After checking the eyes at maximum deviation, check for onset of nystagmus prior to 45 degrees. Start moving the stimulus towards the right (suspect's left eye) at a speed that would take about four seconds for the stimulus to reach the edge of the suspect's shoulder. Watch the eye carefully for any sign of jerking. When you see it, stop and verify that the jerking continues. Now, move the stimulus to the left (suspect's right eye) at a speed that would take about four seconds for the stimulus to reach the edge of the suspect's shoulder. Watch the eye carefully for any sign of jerking. When you see it, stop and verify that the jerking continues. Repeat the procedure. NOTE: It is important to use the full four seconds when checking for onset of nystagmus. If you move the stimulus too fast, you may go past the point of onset or miss it altogether.

If the suspect's eyes start jerking before they reach 45 degrees, check to see that some white of the eye is still showing on the side closest to the ear. If no white of the eye is showing, you either have taken the eye too far to the side (that is more than 45 degrees) or the person has unusual eyes that will not deviate very far to the side.

ADMINISTRATIVE PROCEDURES

1. EYEGLASSES/CONTACTS
2. VERBAL INSTRUCTIONS
3. POSITION OBJECT (12-15 INCHES)
4. TRACKING
5. PUPIL SIZE
6. CHECK FOR LACK OF SMOOTH PURSUIT
7. CHECK FOR DIST. NYSTAGMUS @ MAX. DEV.
8. CHECK ONSET OF NYSTAGMUS PRIOR TO 45°
9. TOTAL THE CLUES
10. CHECK FOR VERTICAL NYSTAGMUS

NOTE: Nystagmus may be due to causes other than alcohol. These other causes include seizure medications, PCP, inhalants, barbiturates and other depressants. A large disparity between the performance of the right and left eye may indicate a medical condition.

Test Interpretation

You should look for three clues of nystagmus in each eye.

1. The eye cannot follow a moving object smoothly.
2. Nystagmus is distinct when the eye is at maximum deviation.
3. The angle of onset of nystagmus is prior to 45 degrees.

If you observe four or more clues, it is likely that the suspect's BAC is above 0.10. Using this criterion you will be able to classify correctly about 77% of your suspects with respect to whether they are above 0.10. That probability was determined during laboratory and field testing and helps you weigh the various field sobriety tests in this battery as you make your arrest decision.

Vertical Nystagmus

The Vertical Nystagmus test is very simple to administer. During the Vertical Nystagmus test, look for distinct jerking when the eyes are held for four seconds in the upmost position.

1. Position the stimulus horizontally, about 12-15 inches in front of the suspect's nose.

2. Instruct the suspect to hold the head still, and follow the object with the eyes only.

3. Raise the object until the suspect's eyes are elevated as far as possible.

4. Hold for approximately four seconds.

5. Watch closely for evidence of jerking.

Horizontal and Vertical Gaze Nystagmus can be observed directly and does not require special equipment. You will need something for the suspect to follow with the eyes, but this can be as simple as the tip of your index finger, penlight, or pen. The stimulus used should be held slightly above eye level, so that the eyes are wide open when they look directly at it. It should be held about 12-15 inches in front of the nose for ease of focus. Remain aware of your position in relation to the suspect at all times. OFFICER SAFETY IS THE NUMBER ONE PRIORITY ON ANY TRAFFIC STOP.

Procedures for Walk-and-Turn Testing

1. Instructions Stage: Initial Positioning and Verbal Instructions

   For standardization in the performance of this test, have the suspect assume the heel-to-toe stance by giving the following verbal instructions, accompanied by demonstrations:

   - "Place your left foot on the line." (Place your own left foot on the line to demonstrate.)
   - "Place your right foot on the line ahead of the left foot, with heel of right foot against toe of left foot." (Demonstrate).
   - "Place your arms down at your side."
   - "Keep this position until I tell you to begin. Do not start to walk until I tell you to do so."
   - "Do you understand the instructions so far?" (Make sure suspect indicates understanding.)

2. Demonstrations and Instructions for the Walking Stage

   Explain the test requirements, using the following verbal instructions, accompanied by demonstrations:

- "When I tell you to start, take nine heel-to-toe steps down the line, turn around, and take nine heel-to-toe steps back up the line." (Demonstrate 2 or 3 heel-to-toe steps.)

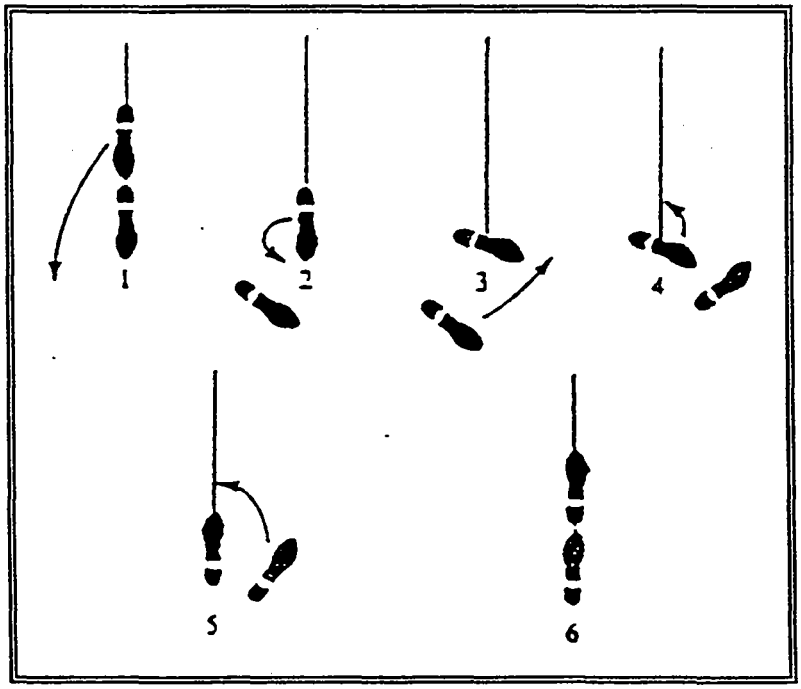
- "When you turn, keep the front foot on the line, and turn by taking a series of small steps with the other foot, like this." (Demonstrate).

- "While you are walking, keep your arms at your sides, watch your feet at all times, and count your steps out loud."

- "Once you start walking, don't stop until you have completed the test."

- "Do you understand the instructions?" (Make sure suspect understands.)

- "Begin, and count your first step from the heel-to-toe position as 'One.'"



3. Test Interpretation

You may observe a number of different behaviors when a suspect performs this test. Research, however, has demonstrated that the behaviors listed below are the most likely to be observed in someone with a BAC above 0.10. Look for the following clues each time this test is given:

A. Cannot keep balance while listening to the instructions. Two tasks are required at the beginning of this test. The suspect must balance heel-to-toe on the line, and at the same time, listen carefully to the instructions. Typically, the person who is intoxicated can do only one of these things. The suspect may listen to the instructions, but not keep balance. Record this clue if the suspect does not maintain the heel-to-toe position throughout the instructions. (Feet must actually break apart.) Do not record this clue if the suspect sways or uses the arms to balance but maintains the heel-to-toe position.

B. Starts before the instructions are finished. The impaired person may also keep balance, but not listen to the instructions. Since you specifically instructed the suspect not to start walking "until I tell you to begin," record this clue if the suspect does not wait.

C. Stops while walking to steady self. The suspect pauses for several seconds after one step. Do not record this clue if the suspect is merely walking slowly.

D. Does not touch heel-to-toe. The suspect leaves a space of one-half inch or more between the heel and toe on any step.

E. Steps off the line. The suspect steps so that one foot is entirely off the line.

F. Uses arms to balance. The suspect raises one or both arms more than 6 inches from the sides in order to maintain balance.

G. Improper turn. The suspect removes the front foot from the line while turning. Record this clue if both feet are removed from the line. Also record this clue if the suspect clearly has not followed directions as demonstrated.

H. Incorrect number of steps. Record this clue if the suspect takes more or fewer than nine steps in either direction.

Note: If suspect cannot do test, record as if all eight clues were observed. Consideration should be given to terminating the test if the suspect cannot safely complete it.

Should the suspect have difficulty with this test (for example, steps off the line), repeat the test from the point of difficulty, not from the beginning. This test tends to lose its sensitivity if it is repeated several times.

Observe the suspect from 3 or 4 feet away and remain motionless while suspect performs the test. Being too close or excessive motion on your part will make it more difficult for the suspect to perform, even if sober.

If the suspect exhibits two or more distinct clues on this test or fails to complete it, classify the suspect's BAC as above 0.10. Using this criterion, you will be able to correctly classify about 68% of your suspects.

4. Test Conditions

Walk-and-Turn test requires a designated straight line, and should be conducted on a dry, hard, level, nonslippery surface, under relatively safe conditions. There should be sufficient room for suspects to complete nine heel-to-toe steps. If these conditions do not exist, suspects should be asked to perform this test elsewhere or only HGN should be used. SUSPECT'S AND OFFICER'S SAFETY SHOULD BE CONSIDERED AT ALL TIMES.

NOTE: In the research study, suspects were only asked to "assume a heel-to-toe position on a designated line". Therefore, a suspect could start with either the right or left foot on the line and not violate the procedures used in the research study. However, for standardization of the administrative procedures for this test, have suspect place left foot on line first, right foot in front, heel-to-toe.

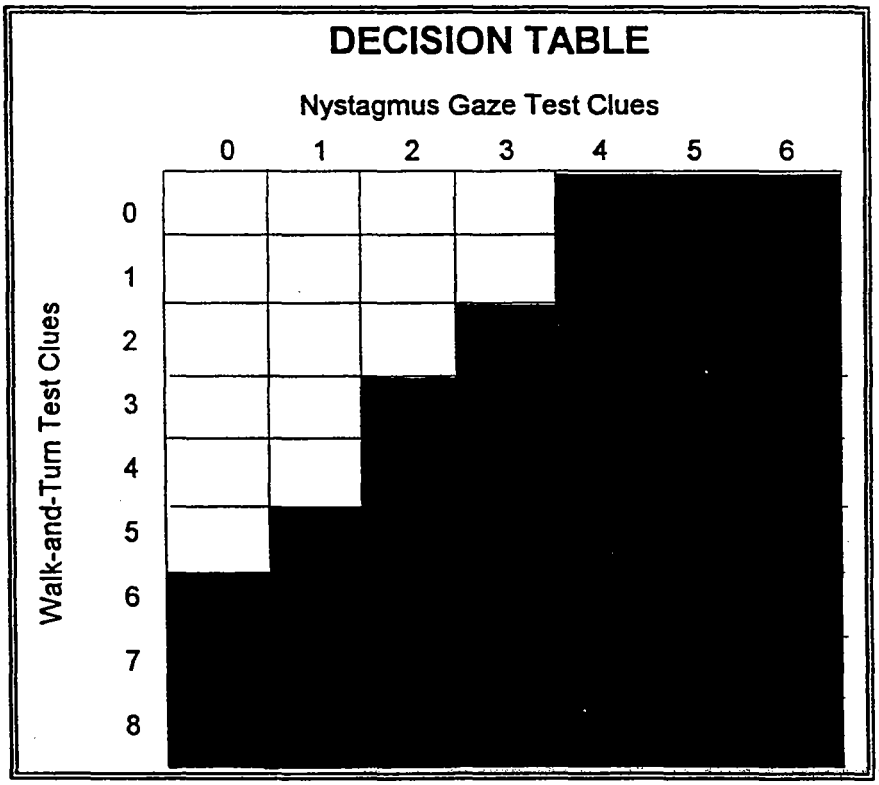
Some people have difficulty with balance even when sober. The test criteria for Walk-and-Turn is not necessarily valid for suspects 65 years of age or older, persons with injuries to their legs, or persons with inner ear disorders. Individuals wearing heels more than 2 inches high should be given the opportunity to remove their shoes. Individuals who cannot see out of one eye may also have trouble with this test because of poor depth perception.

5. Combined Interpretation of Horizontal Gaze Nystagmus and Walk-and-Turn Tests

The Decision Table below is designed to help you classify those suspects with a potential BAC above 0.10. You will recall that the decision point on the Gaze Nystagmus Test was four clues, while on the Walk-and-Turn Test it was two.

However, a suspect may score higher on one test and lower on the other. How do you make your decision? Find the box on the Decision Table where the two test results intersect and see if it falls in the shaded area. (For example, suppose a suspect produced only three clues on the Horizontal Gaze Nystagmus but two clues on the Walk-and-Turn. Is suspect intoxicated? The Decision Table says yes. But if suspect scored three on the Horizontal Gaze Nystagmus and only one on the Walk-and-Turn, the Table indicates the suspect's BAC is probably below 0.10.)

Using this method, you will correctly classify about 80% of your suspects as to whether their BAC's are above or below 0.10.



Procedures for One-Leg Stand Testing

1. Instructions Stage: Initial Positioning and Verbal Instructions

   Initiate the test by giving the following verbal instructions, accompanied by demonstrations.

   - "Please stand with your feet together and your arms down at the sides, like this." (Demonstrate)

- o "Do not start to perform the test until I tell you to do so."

- o "Do you understand the instructions so far?" (Make sure suspect indicates understanding.)

2. Demonstrations and Instructions for the Balancing and Counting Stage

Explain the test requirements, using the following verbal instructions, accompanied by demonstrations:

- o "When I tell you to start, raise one leg, either leg, approximately six inches off the ground, toes pointed out." (Demonstrate one leg stance.)

- o "You must keep both legs straight, arms at your side."

- o "While holding that position, count out loud for thirty seconds in the following manner: "one thousand and one, one thousand and two, until told to stop." (Demonstrate a count, as follows: "one thousand and one, one thousand and two, etc." Officer should not look at his foot when conducting the demonstration - OFFICER SAFETY.)

- o "Keep your arms at your sides at all times and keep watching the raised foot."

- o "Do you understand?" (Make sure suspect indicates understanding.)

- o "Go ahead and perform the test." (Officer should always time the 30 seconds. Test should be discontinued after 30 seconds.)

Observe the suspect from at least 3 feet away. If the suspect puts the foot down, give instructions to pick the foot up again and continue counting from the point at which the foot touched the ground. If the suspect counts very slowly, terminate the test after 30 seconds. If the suspect is counting quickly, have the suspect continue counting until told to stop.

3. Test Interpretation

You may observe a number of different behaviors when a suspect performs this test. Researchers, however, have found that behaviors listed below are the most likely to be observed in someone with a BAC above 0.10. Look for the following clues each time the One-Leg Stand test is administered.

A. The suspect sways while balancing. This refers to side-to-side or back-and-forth motion while the suspect maintains the one-leg stand position.

B. Uses arms for balance. Suspect moves arms 6 or more inches from the side of the body in order to keep balance.

C. Hopping. Suspect is able to keep one foot off the ground, but resorts to hopping in order to maintain balance.

D. Puts foot down. The suspect is not able to maintain the one-leg stand position, putting the foot down one or more times during the 30-second count.

Note: If suspect cannot do test or puts foot down three or more times, record as if all four clues were observed. Consideration should be given to terminating the test if the suspect cannot safely complete it.

Remember that time is critical in this test. Research has shown that a person with a BAC above 0.10 can maintain balance for up to 25 seconds, but seldom as long as 30.

If an individual shows two or more clues or fails to complete the One-Leg Stand, there is a good chance the BAC is above 0.10. Using that criterion, you will correctly classify about 65% of the people you test as to whether their BAC's are above or below 0.10.

Observe the suspect from at least 3 feet away, and remain as motionless as possible during the test so as not to interfere. If the suspect puts the foot down, give instructions to pick the foot up again and continue counting from the point at which the foot touched the ground. If the suspect counts very slowly, terminate the test after 30 seconds. If the suspect is counting quickly, have the suspect continue counting until 30 seconds have elapsed.

4. Test Conditions

One-Leg Stand requires a reasonably level, and smooth surface. There should be adequate lighting for the suspect to have some visual frame of reference. Suspect's safety should be considered at all times.

Some people have difficulty with the One-Leg Stand even when sober. The test criteria for the One-Leg Stand is not necessarily valid for suspects 65 years of age or older, or 50 pounds or more overweight. Persons with injuries to their legs, or inner ear disorders, may have difficulty with the test. Individuals wearing heels more than 2 inches high should be given the opportunity to remove shoes.

5. Taking Field Notes on Suspects' Performance of Field Sobriety Tests

For purposes of the arrest report and courtroom testimony, it is simply not enough to record the total number of clues on the three tests. The number of clues is important to the police officer in the field because it helps determine whether there is probable cause to arrest. But to secure a conviction, much more descriptive evidence is needed.

The officer must be able to describe how the suspect performed on the tests, and exactly what the suspect did.

The standard note taking guide provided in this Manual is designed to help you develop a clear description of the suspect's performance on the tests.

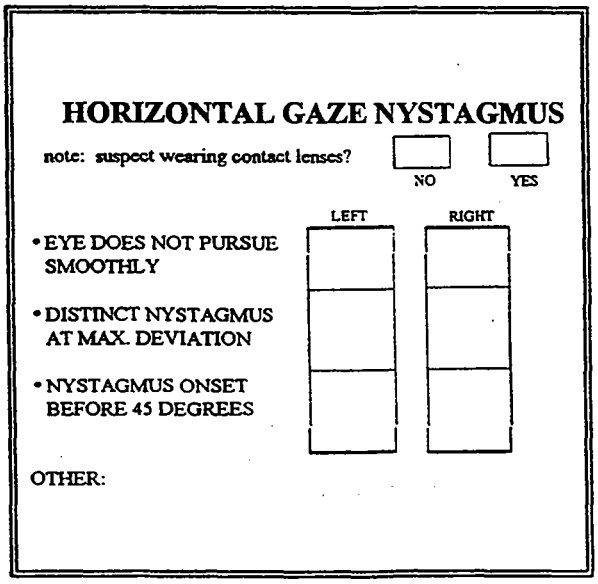
6. Taking Field Notes on Horizontal Gaze Nystagmus Testing

The section on the horizontal gaze nystagmus test appears on the bottom of the guide's front side.

First, make sure that you inquire whether the suspect is wearing contact lenses. Check the "No" or "Yes" box to record the suspect's response.

Complete the entire test for both eyes, writing "yes" or "no" for each nystagmus clue.

- Write "yes" if the clue is present;
- Write "no" if the clue is not present.



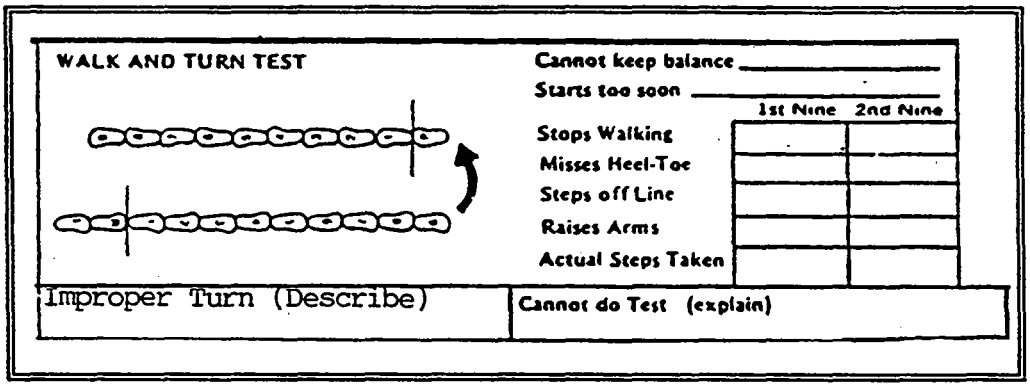
In the section labeled "other," record any facts, circumstances, conditions or observations that may be relevant to this test.

- o Examples of additional evidence of alcohol impairment emerging during nystagmus test:
  - suspect unable to keep head still;
  - suspect swaying noticeably;
  - suspect utters incriminating statements.

- o Examples of conditions that may interfere with suspect's performance of the horizontal gaze nystagmus test:
  - wind, dust, etc. irritating suspect's eyes;
  - numerous visual or other distractions impeding the test (always face suspect away from flashing or strobe lights).

7. Taking Field Notes on Walk-and-Turn Testing

The section on the Walk-and-Turn test appears at the top of the guide's back side.



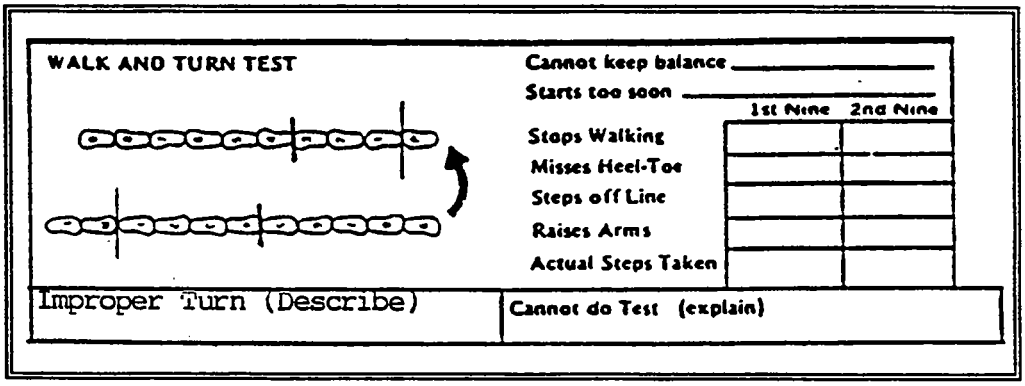
The first two clues, "cannot keep balance" and "starts too soon" apply only during the instructions stage of the test. Record the number of times each of those clues appear.

For example, if the suspect's feet "break apart" from the heel-to-toe stance twice during the instructions stage, write "2" in the box alongside the "cannot keep balance" clue. Similarly, if the suspect never "starts too soon," write "0" in that box. Note: Actual steps taken is for scoring purposes only. Wrong number of steps is the validated clue.

Don't leave boxes blank. If a particular clue never shows up, write "0" in the corresponding box.

Record the next five clues separately for the walk down the line, and then up the line.

A. If a suspect stops walking, record how many times in the following manner: Draw a vertical line across the toe of the step at which the stop occurred. Do this for the first as well as the second nine steps. Place the letter "S" at top of the vertical line to indicate stops walking.



B. If suspect fails to touch heel-to-toe, record how many times this happens. Draw a vertical line across the toe of the step at which the miss occurred. Place the letter "M" at the top of the vertical line to indicate missed heel to toe.

C. If suspect steps off the line while walking, record how many times this happens in the following manner. Draw a line from the appropriate foot print at an angle in the direction in which the foot stepped. Do this for the first as well as the second nine steps.

D. If suspect uses arms to balance, give some indication of how often or how long this happens.

- Example: suspect raised arms from sides three times; place a check for each occurrence in appropriate box.
- Example: suspect held arms away from sides during 3 through 7; place a check for each occurrence in appropriate box.
- Example: suspect "flapped" arms continuously; make a note.

E. Record the actual number of steps taken by suspect in each direction.

For the next point, "improper turn," record a description of the turn.

If you note that the suspect "cannot perform test," indicate explicitly why you did so.

- o Example: "off line three times;"
- o Example: "staggered six steps to right, nearly fell;"
- o Example: "fear of injury."

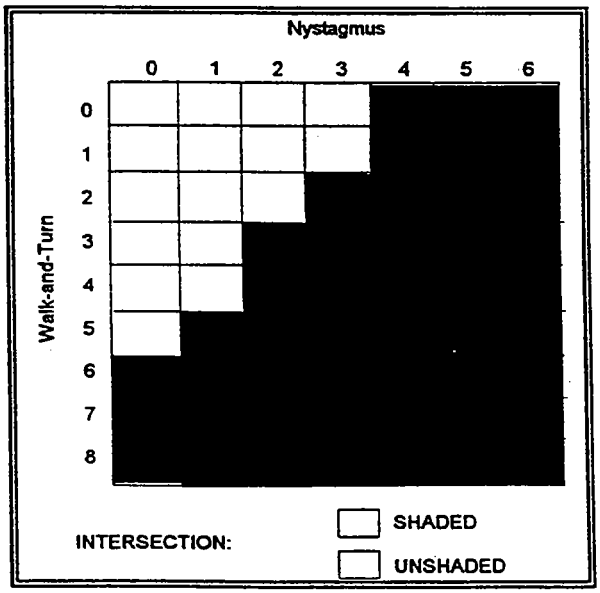
At end of the test, examine each factor and determine how many distinct clues have been recorded. Remember, each clue may appear several times, but still only constitutes one distinct clue. Failure to perform test should be recorded as "eight" clues observed.

In the section labeled "other," record any facts, circumstances, conditions or observations that may be relevant to this test.

- o Examples of additional evidence of impairment during Walk-and-Turn test:
  - suspect verbally miscounts steps;
  - suspect utters incriminating statements.
- o Examples of conditions that may interfere with suspect's performance of the Walk-and-Turn test:
  - wind/weather conditions;
  - suspect's age, weight;
  - suspect's footwear.

8. Taking Field Notes on the Combined Interpretation of Nystagmus and Walk-and-Turn

The decision table for combining nystagmus and Walk-and-Turn scores appears on the upper right of the page.



Along the top of the table, circle the number corresponding to the suspect's nystagmus clues. Along the left side of the table, circle the number corresponding to the suspect's Walk-and-Turn clues.

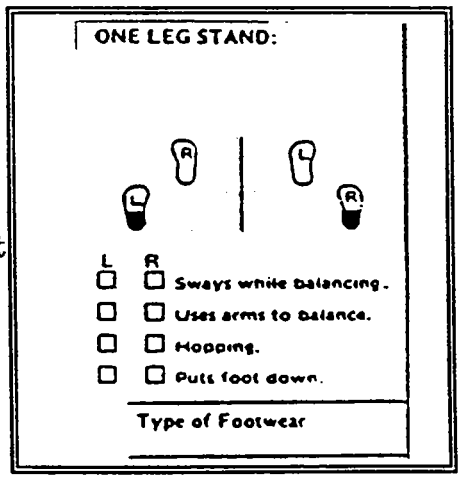
On the "intersection" line immediately below the table, check either "shaded" or "unshaded."

- Check "shaded" if the intersection of the two test results falls in the black or shaded area of the table;

- Check "unshaded" if the intersection falls in the white or unshaded area.

Remember: Combined interpretation of nystagmus and Walk-and-Turn is more reliable than either test, separately. By using the decision table, you can correctly classify about 80% of your suspects in terms of whether their BAC's are above or below 0.10.

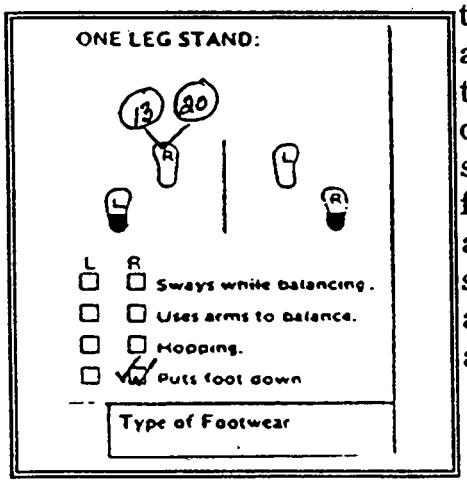
9. Taking Field Notes on One-Leg Stand Testing



The section on the One-Leg Stand test appears midway down the page.

By recording when things happen as well as what happens, you will be able to prepare a more descriptive arrest report.

You will place check marks in or near the small boxes to indicate how many times you observed each of the clues. You will do this separately for the test on the left leg (L) or on the right leg (R). In addition, if the suspect puts the foot down during the test, you will record when it happened (write the count on new note guide). For example, when standing on the left leg the suspect lowered the right foot at a count of "one thousand and thirteen", and again at "one thousand and twenty". Your diagram should look like the sketch to the right. You must also pay attention to the suspect's general appearance and behavior while the test is being performed.



At end of the test, examine each factor and determine how many distinct clues have appeared.

Remember: A clue may appear several times, but will constitute only one distinct clue, except if suspect puts foot down three or more times.

At end of the test, examine each factor and determine how many distinct clues have been recorded. Remember, each clue may appear several times, but still only constitutes one distinct clue. Failure to perform test should be recorded as "four" clues observed, as should putting foot down three or more times.

TEST YOUR KNOWLEDGE

INSTRUCTIONS: Complete the following sentences.

1. Walk-and-Turn is an example of _____ field sobriety test.

2. The Walk-and-Turn requires a visible straight line and _____

   _____

3. During the _____ stage of the Walk-and-Turn, the suspect is required to count out loud.

4. When properly administered, the Walk-and-Turn can determine whether a suspect's BAC is above or below 0.10, _____ percent of the time.

5. In the Walk-and-Turn test, a suspect who steps off the line during the first 9 steps and once again during the second 9 steps and who raises arms for balance twice during the second nine steps has produced _____ distinct clue(s).

6. The Walk-and-Turn may not be valid when administered to persons who are over _____ years of age.

7. During the _____ stage of the One-Leg Stand the suspect must maintain balance for 30 seconds.

8. The One-Leg Stand requires that the suspect keep the foot elevated for _____ seconds.

9. When properly administered, the One-Leg Stand can determine whether a suspect's BAC is above or below 0.10, _____ percent of the time.

10. In the One-Leg Stand test, a suspect who sways has exhibited _____ distinct clue(s).

11. In the One-Leg Stand test, a suspect who raises arms, hops, and puts foot down has exhibited _____ distinct clue(s).

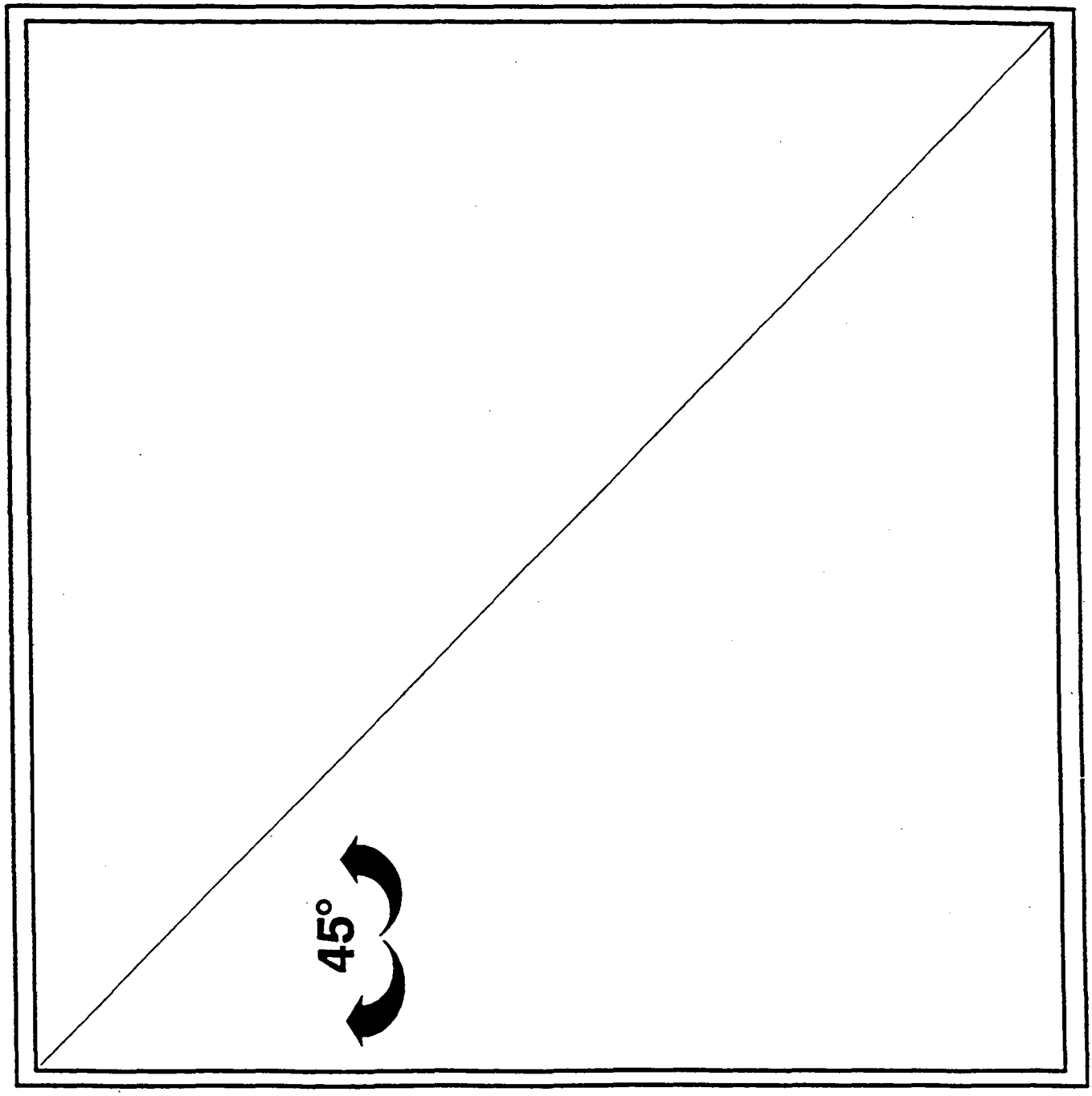
12. The maximum number of clues for Horizontal Gaze Nystagmus that can appear in <u>one</u> eye is _____.

13. When properly administered, the HGN test can determine whether a suspect's BAC is above or below 0.10, _____ percent of the time.

14. The third clue of HGN is an onset of nystagmus prior to angle of _____ degrees.

ATTACHMENT

45° Template


45°

SESSION IX

TEST BATTERY DEMONSTRATIONS

SESSION IX

TEST BATTERY DEMONSTRATIONS

Upon successfully completing this session, the student will be able to:

- Demonstrate the appropriate administrative procedures for the Standardized Field Sobriety Testing Battery.

CONTENT SEGMENTS	LEARNING ACTIVITIES
A. Live Classroom Demonstrations	o Instructor-Led Demonstration
B. Video Tape Demonstration	o Student Demonstration
	o Video Tape Presentation

TEST BATTERY DEMONSTRATIONS

In this session, you will have the opportunity to observe several demonstrations of the three standardized field sobriety tests. Your instructors will conduct some of these demonstrations. Other demonstrations will be provided on video tape.

SESSION X

"DRY RUN" PRACTICE SESSION

SESSION X

"DRY RUN" PRACTICE SESSION

Upon successfully completing this session, the student will be able to:

- o Demonstrate the proper administration of the three Standardized Field Sobriety Tests.

CONTENT SEGMENTS		LEARNING ACTIVITIES	
A.	Procedures and Group Assignments	o	Instructor-Led Presentation
B.	Hands On Practice	o	Student Practice Session

"DRY RUN" PRACTICE SESSION

In this session, you will work with other students, taking turns administering the standardized field sobriety tests to each other. When you are not administering a test or serving as the test subject, you will be expected to observe the test administrator and subsequently help critique their performance.

The Student Performance Checklist (shown on the next two pages) should be used to help you monitor a fellow student's performance as a test administrator.

STUDENT PERFORMANCE CHECKLIST
STANDARDIZED FIELD SOBRIETY TEST BATTERY

Student Name: _____ Date: _____

I. HORIZONTAL GAZE NYSTAGMUS

_____ 1. Asks if subject is wearing contact lenses.

_____ 2. Object held in proper position (12"-15" from nose, just above eye level).

_____ 3. Check equal tracking.

_____ 4. Check pupil size.

_____ 5. Smooth movement from center of nose to maximum deviation in 2 seconds and then back across subject's face to maximum deviation in right eye, then back to center. Check left eye, then right eye. (Repeat)

_____ 6. Eye held at maximum deviation for four seconds (no white showing). Check left eye, then right eye. (Repeat)

_____ 7. Eye moved slowly (4 sec.) from center to 45 angle. Check left eye, then right eye. (Repeat)

_____ 8. Check for vertical nystagmus. (Repeat)

II. WALK-AND-TURN

_____ 1. Instructions given from a safe position.

_____ 2. Tells subject to place feet on line in heel-to-toe manner (left foot behind right foot) with arms at sides and gives demonstration.

_____ 3. Tells subject not to begin test until instructed to do so and asks if subject understands.

_____ 4. Tells subject to take nine heel-to-toe steps and demonstrates.

_____ 5. Explains and demonstrates turning procedure.

_____ 6. Tells subject to return with nine heel-to-toe steps.

_____ 7. Tells subject to count steps out loud.

_____ 8. Tells subject to look at feet while counting.

_____ 9. Tells subject not to raise arms from sides.

_____ 10. Tells subject not to stop once they begin.

_____ 11. Asks subject if all instructions are understood.

III. ONE-LEG STAND

_____ 1. Instructions given from a safe position.

_____ 2. Tells subject to stand straight, place feet together, and hold arms at sides.

_____ 3. Tells subject not to begin test until instructed to do so and asked if subject understands.

_____ 4. Tells subject to raise one leg, either leg, approximately 6" from the ground, keeping raised foot pointed out, and gives demonstration.

_____ 5. Tells subject to keep both legs straight and to look at elevated foot.

_____ 6. Tells subject to count for 30 seconds by thousands in the following manner: one thousand and one, one thousand and two, until told to stop, and gives demonstration.

_____ 7. Checks actual time subject holds leg up.

Instructor: _____

SESSION XI

"TESTING SUBJECTS" PRACTICE: FIRST SESSION

SESSION XI

"TESTING SUBJECTS" PRACTICE: FIRST SESSION

Upon successfully completing this session, the student will be able to:

- Properly administer the SFST's.
- Properly observe and record subject's performance utilizing the standard notetaking guide.
- Properly interpret the subject's performance.
- Proper use and maintenance of the SFST Field Arrest Log. **(The use of the log is recommended, but not required)**

CONTENT SEGMENTS	LEARNING ACTIVITIES
A. Procedures	o Instructor-Led Presentation
B. Hands-on Practice	o Student Practice Session
C. Use and Maintenance of SFST Field Arrest Log	o Instructor-Led Presentation
D. Session Wrap-Up	o Instructor-Led Discussion

"TESTING SUBJECTS" PRACTICE: FIRST SESSION

During this session, you will work with several other students to administer standardized field sobriety tests to volunteers who have consumed alcoholic beverages. Some of these volunteers will have BACs above 0.10. Others will be below that level. You will carefully note and record the volunteers' performance, and attempt to distinguish those above 0.10 from those below 0.10.

You will also learn to record your observations on a SFST Field Arrest Log.

SESSION XI-A

"TESTING SUBJECTS" PRACTICE: FIRST SESSION
(OPTIONS ONE OR TWO)

SESSION XI-A

"TESTING SUBJECTS" PRACTICE: FIRST SESSION (OPTIONS ONE OR TWO)

Upon successfully completing this session, the student will be able to:

- o Properly administer the SFST's.
- o Properly observe and record subject's performance utilizing the standard notetaking guide.
- o Properly interpret the subject's performance.
- o Proper use and maintenance of the SFST field arrest log.

CONTENT SEGMENTS	LEARNING ACTIVITIES
A. Procedures	o Instructor-Led Presentation
B. Practical Exercise	o Student Practice Session
C. Use and Maintenance of SFST Field Arrest Log	o Instructor-Led Presentation
D. Session Wrap-Up	o Instructor-Led Discussion

"TESTING SUBJECTS" PRACTICE: FIRST SESSION

If you are attending either OPTION ONE OR OPTION TWO OF THIS TRAINING PROGRAM, you will work with several other students in observing video-taped volunteers who have consumed alcoholic beverages. Some of these volunteers will have BACs above 0.10. Others will be below that level. You will carefully note and record the volunteers' performance, and attempt to distinguish those "0.10 and above" from those "below 0.10".

You will also learn to record your observations on a SFST Field Arrest Log. IACP strongly recommends that students attending OPTION ONE OR OPTION TWO OF THIS TRAINING maintain a SFST Field Arrest Log. However, this log is not required.

SFST FIELD ARREST LOG

Date	Name	HGN	WAT	OLS	BAC +/- .10%	Arrest Not Arrest	Measured BAC	Remarks

SESSION XII

PROCESSING THE ARRESTED SUSPECT
AND
PREPARATION FOR TRIAL

SESSION XII

PROCESSING THE ARRESTED SUSPECT AND PREPARATION FOR TRIAL

Upon successfully completing this session, the student will be able to:

- Discuss the importance of correct processing and report writing procedures in DWI arrests.
- Discuss the correct sequence of DWI suspect processing procedures.
- Discuss the essential elements of the DWI arrest report.
- Discuss the importance of pre-trial conferences and presentation of evidence in the DWI trial.

CONTENT SEGMENTS	LEARNING ACTIVITIES
A. The Processing Phase	o Instructor-Led Presentations
B. Preparing the DWI Arrest Report: Documenting The Evidence	o Video-Tape Presentations
C. Narrative DWI Arrest Report	o Interactive Discussion
D. Case Preparation and Pre-trial Conference	
E. Guidelines for Direct Testimony	

PROCESSING THE ARRESTED SUSPECT AND PREPARATION FOR TRIAL

The successful prosecution of a DWI case is dependent upon the officer's ability to organize and present all relevant evidence of each element of the DWI violation. The officer must keep in mind that virtually all of this evidence must be compiled during the three phases of detection -- vehicle in motion, personal contact, and pre-arrest screening. The officer must be able to establish the level of impairment at the time that the violation occurred, therefore, observations are of critical importance. Subsequent evidence of impairment, such as the evidential chemical test result(s) and/or the evidence gathered during a drug evaluation, will be admissible only when a proper arrest has been made. The efforts expended in detecting, apprehending, investigating and testing/evaluating the DWI violator will be of little value if there is not sufficient evidence to prove every element of the violation.

Accordingly, if the evidence is not presented clearly and convincingly in court, the case may be lost, no matter how good that evidence may be. Therefore, it is essential that officers develop the ability to write a clear and concise report describing their observations and results of their investigation for presentation to the prosecutor.

What is evidence? Evidence is any means by which some alleged fact that has been submitted to investigation may either be established or disproved. Evidence of a DWI violation may be of various types:

a. Physical (or real) evidence: something tangible, visible, audible (e.g. a blood sample or a partially empty can of beer).

b. Well established facts (e.g. judicial notice of accuracy of the breath test device when proper procedures are followed).

c. Demonstrative evidence: demonstrations performed in courtroom (e.g. field sobriety tests).

d. Written matter of documentation (e.g. the citation, the alcohol influence report, the drug evaluation report, evidential chemical test results, etc.).

e. Testimony (the officer's verbal description of what was seen, heard, smelled, etc.).

The prosecutor must be able to establish that the defendant was driving or operating a vehicle on a highway or within the state while under the influence of alcohol or drugs. The prosecutor also must establish that the following procedures were followed:

a. That there were reasonable grounds for arrest.

   1. That the accused was the operator or in physical control of the vehicle.

   2. That there were grounds for stopping/contacting the accused.

   3. That there was probable cause to believe that the accused was under the influence, or impaired.

b. That proper arrest procedures were followed.

c. That proper and due regard was given to suspect's rights.

d. That subsequent observation and interrogation of the suspect provided additional evidence relevant to the alleged offense.

e. That there was a proper request for the suspect to submit to the chemical test.

f. If drugs other than alcohol are involved, the prosecutor also must establish that there were grounds to request a drug evaluation and:

   1. That the evaluation was properly administered.

   2. That the results establish the cause of impairment was a drug or drugs other than alcohol or in combination with alcohol.

   3. That there was a proper request for the suspect to submit to an additional evidential chemical test.

The prosecutor's case will largely be based upon the officer's investigation, and in particular on the arrest report.

While it is true that many items which are critical to the prosecution are documented on special forms, the officer must keep in mind that the prosecutor may not have the time to search out relevant facts. The decision may be made to amend or reduce or even dismiss the case on the basis of the arrest report alone.

It is, therefore, essential that the report clearly and accurately describe the total sequence of events from the point the subject was first observed, through the arrest, the drug evaluation (if conducted), and subsequent release or incarceration.

Guidelines for Note Taking

One of the most critical tasks in the DWI enforcement process is the recognition and retention of facts that establish probable cause to stop, investigate and subsequently arrest persons suspected of driving or operating a vehicle while under the influence of alcohol and/or drugs. The evidence gathered during the detection process must establish the elements of the violation, and must be documented to support successful prosecution of the violator. This evidence is largely sensory (see-smell-hear) in nature, and therefore is extremely short lived.

Police officers must be able to recognize and act on facts and circumstances with which they are confronted. But the officer must also be able to recall those observations, and describe them clearly and convincingly, to secure a conviction. The officer is inundated with evidence of DWI (sights, sounds, smells, etc.) recognizes it, and bases the decision to stop, investigate and arrest on their observations.

Since evidence of a DWI violation is short lived, police officers need a system and tools for recording field notes at scenes of DWI investigations. Technological advances have made it possible to use audio tape recorders and video tape recorders in the field and they provide an excellent means of documenting this short lived evidence. However, the vast majority of officers must rely on their own field notes.

One way of improving the effectiveness of field notes is to use a structured note taking guide. This type of form makes it very easy to record brief "notes" on each step of the detection process, and ensures that vital evidence is documented. The field notes provide the information necessary for completion of required DWI report forms and assist the officer in preparing a written account of the incident. The field notes will also be useful if the officer is required to provide oral testimony, since they can be used to refresh the officer's memory.

A model note taking guide has been developed for use in the basic course. DWI Detection and Standardized Field Sobriety Testing course (see attached copy).

Section I provides space to record basic information describing the suspect, the vehicle, the location, and the date and time the incident occurred.

Section II provides space to record brief descriptions of the vehicle in motion (Detection Phase One), including initial observation of the vehicle in operation, and observation of the stopping sequence.

Section III provides space to record brief descriptions of the personal contact with the suspect (Detection Phase Two), including observation of the driver, statements or responses made by the driver or passengers, the results of any pre-exit sobriety tests, observation of the driver exiting the vehicle, and any odors that may be present.

Section IV provides space to record the results of all field sobriety tests that were administered, and the results of the preliminary breath test (PBT) if it was given.

Section V provides space to record the officer's general observations, such as the suspect's manner of speech, attitude, clothing, etc. Any physical evidence collected should also be noted in this section.

The Processing Phase

The Processing Phase of a DWI Enforcement incident is the bridge between arrest and conviction of a DWI offender. Processing involves the assembly and organization of all of the evidence obtained during the detection phase, to ensure that the evidence will be available and admissible in court. Processing also involves obtaining additional evidence, such as a scientific chemical test or tests of the suspect's breath, blood, etc.

Typically, the processing phase may involve the following tasks:

- Inform the offender that they are under arrest.
- "Pat-down" or frisk the offender.
- Handcuff the offender.
- Secure the offender in the patrol vehicle.
- Secure the offender's vehicle, passengers, property.
- Transport the offender to an appropriate facility.
- (If applicable) arrange for video taping.
- Advise offender of rights and obligations under the Implied Consent Law.
- Administer the evidential chemical test(s).
- Advise offender of Constitutional Rights (Miranda Admonition).
- Interview the offender.
- Incarcerate or release the offender.
- Complete the required reports.

Guidelines for Writing the Narrative Report

Report writing is an essential skill for a police officer. Good report writing becomes second nature with practice. While there is no one best way to write an arrest report, it is helpful to follow a simple format. Departmental policies and/or special instructions or requirements of the prosecutor provide some guidance.

Detection and arrest

During the detection phase of the DWI arrest process, the arresting officer must mentally note relevant facts to support the decision to arrest.

These facts are then recorded in the form of field notes and are used to refresh officer's memory when the formal arrest report is prepared.

The following block outline format identifies some of the essential ingredients in a DWI offense (arrest) report:

- Initial Observations - Describe your first observations of the subject's actions. What drew your attention to the vehicle? Your first observations are important. Be sure to record the time and location of the first event.

- Vehicle Stop - Record any unusual actions taken by the subject. How did the subject react to the emergency light and/or siren? Was it a normal stop? Be specific.

- Contact Driver - Record your observations of the subject's personal appearance, condition of the eyes, speech, etc. Record the name and number of passengers in the vehicle and where they sat. Describe any unusual actions taken by the subject.

- Driving or Actual Physical Control - In some cases, you may not use the subject's driving behavior as the basis for the contact. Your first contact could result from an accident investigation or a motorist assistance type of contact. Your observations and documentation must establish that the subject was driving or in actual physical control of the vehicle.

- Field Sobriety Tests - Describe the subject's actions when you administered the field sobriety tests. Be specific.

- Arrest - Document the arrest decision and ensure that all elements of the violation have been accurately described.

- Disposition/Location of Vehicle and Keys - Indicate where the vehicle was secured or towed and the location of the keys. If the vehicle was released to another party or was driven by a backup officer, record that fact.

- Disposition of Passenger and/or Property - Ensure that passengers and property are properly cared for.

- Transportation - Describe where the subject was transported for evidential testing. Document time of departure and arrival. (This information can be obtained from the radio log). Note any spontaneous comments made by the suspect.

- o Evidential Test - Document which test(s) were administered and by whom. Be sure to include the evidential test(s).

- o Implied Consent/Miranda Warning - Document that the admonishments were given at the appropriate point in the investigation.

- o Witness Statements - List all witnesses and attach copies of their statements.

- o Notification of Offender's Attorney or Other Party - Document the time and result of subject's telephone call to an attorney or other party.

- o Citation/Complaint - Document that the traffic citation/complaint was issued at the appropriate time if applicable.

- o Incarceration or Release - Document the time and place of incarceration or the name and address of the responsible party to whom the offender was released. Be sure to record the time.

- o Additional Chemical Test - If the subject is authorized to request additional chemical tests and does so, record the type of test, time administered, location, and party administering the test.

The foregoing list is not intended to be all inclusive. In many cases, several points will not be needed.

The narrative does not have to be lengthy, but it must be accurate. Remember, successful prosecution depends on your ability to describe the events you observed. Often a trial can be avoided (i.e., an offender may plead guilty) when you do a good job in preparing your arrest report.

A sample report providing an example of the block outline format is attached.

Case Preparation and Pre-trial Conference

Case preparation begins with your first observation and contact with the suspect. It is essential that all relevant facts and evidence are mentally noted and later documented in field notes or other official forms.

Guidelines for Case Preparation

- o Use field notes to document evidence.

- o Accurately note statements and other observations.

- o Review the case with other officers who witnessed the arrest or otherwise assisted you and write down relevant facts.
- o Collect and preserve all physical evidence.
- o Prepare all required documents and a narrative report.
- o Resume.

Remember, it is essential that all reports be consistent. If differences occur, be sure to adequately explain them. The defense will try to impeach your testimony by pointing out seemingly minor inconsistencies.

Preparation for Trial

Upon receipt of a subpoena or other notification of a trial date, review all records and reports to refresh your memory. If appropriate, revisit the scene of the arrest. Compare notes with assisting officers to ensure that all facts are clear.

During discovery, list all evidence and properly document it. Remember, evidence may be excluded if proper procedures are not followed.

Attention to detail is very important.

Pre-trial Conference

Successful prosecution is dependent upon the prosecutor's ability to present a clear and convincing case based on your testimony, physical evidence, and supporting evidence/testimony from other witnesses and experts.

If at all possible, arrange a pretrial conference with the prosecutor. Review with the prosecutor all evidence and all basis for your conclusions. If there are weak points in your case, bring them to the prosecutor's attention. Ask the prosecutor to review the questions to be asked on the witness stand. Point out when you do not know the answer to a question. Ask the prosecutor to review questions and tactics the defense attorney may use. Make sure your resume is current. Review your credentials and qualifications with the prosecutor.

If you cannot have a pretrial conference, try to identify the main points about the case, and be sure to discuss these with the prosecutor during the few minutes you will have just before the trial.

Guidelines for Direct Testimony

Your basic task is to establish the facts of the case: that the suspect was driving or in actual physical control of a vehicle, on a highway or other specified location, within the court's jurisdiction, and was under the influence of alcohol, or drugs or some combination thereof. In other words, to present evidence to establish probable cause for the arrest and conclusive evidence that the violation in fact was committed.

Describe in a clear and convincing manner all relevant observations during the three detection phases and those subsequent to the arrest. When you testify about the suspect's performance of the standardized field sobriety tests, do not use the terms "pass" or "fail". Also, do not refer to the suspect's "score" on the test or the number of "points" produced. Instead, describe clearly and explicitly how the suspect performed (e.g., "stepped off the line twice, raised the arms three times, etc."). By presenting your observations clearly and convincingly, you will allow the fact of the suspect's impairment to speak for itself.

Always keep in mind that juries typically focus on an officer's demeanor as much or more than on the content of the testimony. Strive to maintain your professionalism and impartiality. Be clear in your testimony; explain technical terms in layman's language; don't use jargon, abbreviations, acronyms, etc. Be polite and courteous. Do not become agitated in response to questions by the defense. Above all, if you don't know the answer to a question, say so. Don't guess at answers, or compromise your honesty in any way. Be professional and present evidence in a fair and impartial manner.

Typical Defense Tactics

In many cases, you will be the key witness for the prosecution. Therefore, the defense will try very hard to cast doubt on your testimony.

The defense may ask some questions to challenge your observations and interpretations. For example, you may be asked whether the signs, symptoms and behaviors you observed in the suspect couldn't have been caused by an injury or illness, or by something other than the alcohol/drugs you concluded were present. You may also be asked questions whose purpose is to make it appear as if you weren't really certain that you actually saw what you say you saw. Answer these questions honestly, but carefully. If your observations are not consistent with what an illness or injury would produce, explain why not. Make it clear that your conclusions about alcohol/drug influence are based on interpretation of the observed facts.

The defense may also attempt to challenge your credentials by asking questions to cast doubt on the formal training you have had. There may also be an attempt to ask questions to "trip you up" on technical or scientific issues, and make it appear that you are less knowledgeable than you should be or claim to be. Stick to absolute honesty. Answer all questions about your training fully and accurately, but don't embellish. Don't try to make the training appear to have been more elaborate or extensive than it really was. Answer scientific or technical questions only if you know the answer. Otherwise, admit that you don't know. Don't try to fake or guess the answers.

And, the defense may ask questions to challenge your credibility. You may be asked several very similar questions, in the hope that your answers will be inconsistent. You may be asked questions whose purpose is to show that you had already formed your opinion well before the suspect completed the field sobriety tests. And, you may be asked questions that try to suggest that you eliminated portions of the tests or only gave incomplete or confusing instructions. Guard against these kinds of defense challenges by always performing complete, standardized field sobriety tests, exactly as you have been taught. Standardization will ensure both consistency and credibility.

DWI INCIDENT REPORT

#16347

Defendant:	Mary Katherine Webster
Age:	24
Date of Arrest:	4-14-XX
Time of Arrest:	4:00 pm

Initial Observation:

At approximately 3:56 pm Sgt. Tower and Trooper Pang were observing traffic at the intersection of Druid Lake Drive and Park Height's Avenue. The defendant, a white female, was driving a silver jeep NB on Druid Lake Drive approaching Park Height's Avenue. The defendant did not reduce speed as she approached the intersection and failed to stop for a solid red traffic signal facing her lane. The defendant made a wide left turn onto Park Height's Avenue and accelerated.

There were two male and two female occupants in the jeep. The occupants were loud and boisterous and the radio was playing loudly.

Park Height's Avenue is a two-lane roadway with one lane in each direction. Traffic was heavy. A light rain was falling.

Pursuit:

Sgt. Tower immediately pursued the jeep. After the jeep completed the turn a male passenger in the right front seat threw a can (later determined to be a beer can) at and struck a large yellow traffic control sign. As the jeep continued westbound, Sgt. Tower observed the brake lights flicker momentarily and the vehicle lurched slightly as if driver was having difficulty changing gears.

The jeep drifted to the left toward the center line and the left wheels actually touched the center line. At that point, the jeep suddenly swerved to the right as a pick up truck approached in the eastbound lane.

The jeep drifted toward the center line, then to the right, again to the center and once more to the right. The jeep stayed within the lane and did not cross the center line or run off the right edge of the road.

Sgt. Tower followed the jeep for approximately 3/4 mile before activating the red lights to find a suitable stopping location.

Vehicle Stop:

The jeep slowly pulled to the right shoulder and continued moving at approximately 10 mph. At that point Sgt. Tower activated the siren. The jeep traveled approximately 200 ft. before coming to a complete stop.

Contact With Driver:

Sgt. Tower approached the driver's side of the vehicle and Trooper Pang remained in the area of the right rear side. Sgt. Tower asked the driver to produce both her driver's license and the vehicle registration. The driver produced both documents, but appeared nervous and uneasy. She was identified as Mary K. Webster from her drivers license. Sgt. Tower asked her a series of brief questions:

1. What is your middle name? A = Katherine

2. Without looking at your watch, what time is it? A = 4:30 (Actual time approximately 4:00)

3. Can you tell me your date of birth? The month and the day? A = 7-8-24.

Sgt. Tower then demonstrated and asked her to perform simple dexterity tests.

1. Finger count with thumb touching fingers on same hand. 1-2-3-4, 4-3 (hesitated) 2-1.

2. Alphabet E-P, correctly done.

3. Count backwards 67-54. She stopped at 60 to tell the occupants of the jeep to "shut up". She seemed confused on where to start again after being asked to resume the count, Sgt. Tower reminded her where she left off. She then completed the count.

Sgt. Tower asked Ms. Webster if she had been drinking. She responded "YES". During this interview, Sgt. Tower detected a moderate odor of an alcoholic beverage on her breath, her eyes were bloodshot. She continued to appear nervous and unsure of herself.

The passengers were rowdy and abusive throughout the contact. The driver asked them to be quiet several times and at one point she told them to "shut up".

Sgt. Tower asked Ms. Webster to step out of the Jeep to perform field sobriety tests. She agreed to do so voluntarily. As she stepped out and walked to the sidewalk at the rear of the jeep, her balance appeared unsteady and she used her left hand to balance on the jeep.

Field Sobriety Tests:

Sgt. Tower first administered the Horizontal Gaze Nystagmus test. Sgt. Tower observed a lack of smooth pursuit, distinct jerkiness at maximum deviation, and an onset of nystagmus prior to reaching 45 degrees in both eyes.

The Walk and Turn test was demonstrated and administered on the sidewalk behind the jeep. Ms. Webster was asked to walk in a straight line parallel to the curb. On the first nine steps she stepped out of the straight line walk on the 3rd step, raised her arms for balance on the 3rd and 5th step, missed heel to toe by 4" on the 7th and 9th steps, and took 10 steps before turning. She also turned by swivelling in one motion rather than as directed. On the 2nd nine steps, she stepped off the straight line, raised her arms for balance, and stopped to look behind her on the 2nd step. She missed heel to toe by approximately 3" on the 7th step.

Sgt. Tower then demonstrated and administered the One-Leg Stand test. Ms. Webster elected to stand on her right leg. On the count from 1014-1015, she jumbled the count. On 1017, she swayed noticeably, raised both arms for balance and hopped briefly. On 1025, she swayed noticeably again.

Based on observations of the driving, physical appearance and performance of the field sobriety tests, Sgt. Tower placed Ms. Webster under arrest for DWI.

Disposition of Vehicle/Passengers:

The vehicle was towed to Ron's Shell, 1022 Western Avenue, Rockville at Ms. Webster's request.

The passengers, Sam Johnson, Mary Jones and Mark Anderson were transported to the Rockville Barrack by Trooper Smith and were subsequently picked up at 5:00 pm by John Johnson, Sam's father.

Transport:

Ms. Webster was transported to the Rockville Barrack by Sgt. Tower and Trooper Pang. She made no statements during the trip. Sgt. Tower departed the scene at 4:20 pm and arrived at the Rockville Barrack at 4:25 pm.

Admonishments:

Sgt. Tower administered the implied consent warning at 4:30 pm and the Miranda warning at 4:35 pm. Both admonishments were noted and witnessed on the appropriate forms.

Evidential Chemical Tests:

Trooper Jim Williams administered an Intoxilizer test at 5:00 pm. The test result was 0.13 BAC.

Notifications:

Ms. Webster called her mother, Joan Webster, at 5:15 pm and asked her to come to the Barrack to pick her up. She stated she would arrive at approximately 6:30 pm.

Incarceration/Release

Ms. Webster was held in the Barrack detention cell until her mother arrived. She was released to her mother's custody at 6:40 pm.

SESSION XIII

REPORT WRITING EXERCISE
AND MOOT COURT

SESSION XIII

REPORT WRITING EXERCISE AND MOOT COURT

Upon successfully completing this session, the student will be able to:

- Discuss the required information on a narrative arrest report.
- Successfully complete a narrative arrest report.
- Discuss the need for competent courtroom testimony.
- Demonstrate the proper techniques of courtroom testimony.

CONTENT SEGMENTS	LEARNING ACTIVITIES
A. Procedures and Assignments	o Instructor-Led Presentation
B. Report Writing Exercise	o Video Presentation
C. Courtroom Testimony Exercise	o Writing Skills Exercise
	o Courtroom Testimony Exercise
	o Instructor-Led Discussion

REPORT WRITING EXERCISE AND MOOT COURT

In this session, you will view a video tape of a simulated DWI arrest, after which you will write a narrative arrest report based on your observations. Some students subsequently will be selected to "testify" about the incident in a moot court.

SESSION XIV

"TESTING SUBJECTS" PRACTICE: SECOND SESSION

SESSION XIV

"TESTING SUBJECTS" PRACTICE: SECOND SESSION

Upon successfully completing this session, the student will be able to:

- Properly administer the SFST's.
- Properly observe and record subject's performance utilizing the standard notetaking guide.
- Properly interpret the subject's performance.

CONTENT SEGMENTS	LEARNING ACTIVITIES
A. Procedures	o Instructor-Led Presentation
B. Hands-on Practice	o Student Practice Session
C. Session Wrap-Up	o Instructor-Led Discussion

"TESTING SUBJECTS" PRACTICE: SECOND SESSION

During this session, if you are attending the CORE CURRICULUM or OPTION ONE training class, you will work with several other students to administer standardized field sobriety tests to volunteers who have consumed alcoholic beverages. Some of these volunteers will have BACs above 0.10%. Others will be below that level. You will carefully note and record the volunteers' performance, and attempt to distinguish those "0.10% and above" from those "below 0.10%".

You will be recording your observations on the SFST Field Arrest Log.

STUDENT PERFORMANCE CHECKLIST
STANDARDIZED FIELD SOBRIETY TEST BATTERY

Student Name: _____ Date: _____

I. HORIZONTAL GAZE NYSTAGMUS

_____ 1. Asks if subject is wearing contact lenses.

_____ 2. Object held in proper position (12"-15" from nose, just above eye level).

_____ 3. Check equal tracking.

_____ 4. Check pupil size.

_____ 5. Smooth movement from center of nose to maximum deviation in 2 seconds and then back across subject's face to maximum deviation in right eye, then back to center. Check left eye, then right eye. (Repeat)

_____ 6. Eye held at maximum deviation for four seconds (no white showing). Check left eye, then right eye. (Repeat)

_____ 7. Eye moved slowly (4 sec.) from center to 45 angle. Check left eye, then right eye. (Repeat)

_____ 8. Check for vertical nystagmus. (Repeat)

II. WALK-AND-TURN

_____ 1. Instructions given from a safe position.

_____ 2. Tells subject to place feet on line in heel-to-toe manner (left foot behind right foot) with arms at sides and gives demonstration.

_____ 3. Tells subject not to begin test until instructed to do so and asks if subject understands.

_____ 4. Tells subject to take nine heel-to-toe steps and demonstrates.

_____ 5. Explains and demonstrates turning procedure.

_____ 6. Tells subject to return with nine heel-to-toe steps.

_____ 7. Tells subject to count steps out loud.

_____ 8. Tells subject to look at feet while counting.

_____ 9. Tells subject not to raise arms from sides.

_____ 10. Tells subject not to stop once they begin.

_____ 11. Asks subject if all instructions are understood.

III. ONE-LEG STAND

_____ 1. Instructions given from a safe position.

_____ 2. Tells subject to stand straight, place feet together, and hold arms at sides.

_____ 3. Tells subject not to begin test until instructed to do so and asked if subject understands.

_____ 4. Tells subject to raise one leg, either leg, approximately 6" from the ground, keeping raised foot pointed out, and gives demonstration.

_____ 5. Tells subject to keep both legs straight and to look at elevated foot.

_____ 6. Tells subject to count for 30 seconds by thousands in the following manner: one thousand and one, one thousand and two, until told to stop, and gives demonstration.

_____ 7. Checks actual time subject holds leg up.

Instructor: _____

SESSION XIV-A

"TESTING SUBJECTS" PRACTICE: SECOND SESSION
(OPTION TWO ONLY)

SESSION XIV-A

"TESTING SUBJECTS" PRACTICE: SECOND SESSION (OPTION TWO ONLY)

Upon successfully completing this session, the student will be able to:

- o Properly administer the SFST's.
- o Properly observe and record subject's performance utilizing the standard notetaking guide.
- o Properly interpret the subject's performance.
- o Proper use and maintence of SFST Field Arrest Log.

CONTENT SEGMENTS	LEARNING ACTIVITIES
A. Procedures	o Instructor-Led Presentation
B. Practical Exercise (OPTION TWO ONLY)	o Video Presentations
C. Session Wrap-Up	o Instructor-Led Discussion

"TESTING SUBJECTS" PRACTICE: SECOND SESSION

During this session, if you are attending the OPTION TWO version of this training program, you will be administering the SFSTs to other students and viewing video-taped volunteers who have consumed alcoholic beverages. Some of these volunteers will have BACs above 0.10%. Others will be below that level. You will carefully note and record the volunteers' performance, and attempt to distinguish those "0.10% and above" from those "below 0.10%".

You will record your results on the SFST Field Arrest Log. NOTE: The IACP strongly recommends that students attending this option of the training maintain an SFST field arrest log. However, this log is not required.

SFST FIELD ARREST LOG

Date	Name	HGN	WAT	OLS	BAC +/- .10%	Arrest Not Arrest	Measured BAC	Remarks

SESSION XV

REVIEW AND PROFICIENCY EXAMINATIONS

SESSION XV

REVIEW AND PROFICIENCY EXAMINATIONS

Upon successfully completing this session, the student will be able to:

- Demonstrate knowledge and proficiency in administering the standardized field sobriety testing battery.

CONTENT SEGMENTS	LEARNING ACTIVITIES
A. Review of Horizontal Gaze Nystagmus	o Instructor-Led Presentation
B. Review of Walk and Turn	o Instructor-Led Demonstration
C. Review of One-Leg Stand	o Student-Led Demonstration
D. Video Tape Demonstration	o Video Tape Demonstration
E. Proficiency Exam	o Student Proficiency Examination

REVIEW AND PROFICIENCY EXAMINATIONS

During this session, you will review the administrative procedures for the three standardized field sobriety tests. You will participate in and observe demonstrations of those tests in the classroom and you will view video taped demonstrations.

Near the end of this session, you will be examined to determine proficiency in administering the three tests. Study the Student's Performance Checklist. You must perform each administrative step perfectly to pass the proficiency examination.

ATTACHMENT

Student Proficiency Examination

ATTACHMENT A

STUDENT PROFICIENCY EXAMINATION
STANDARDIZED FIELD SOBRIETY TEST BATTERY

Student Name: _____ Date: _____

I. HORIZONTAL GAZE NYSTAGMUS

_____ 1. Asks if subject is wearing contact lenses.

*_____ 2. Object held in proper position (12"-15" from nose, just above eye (level).

_____ 3. Check equal tracking.

_____ 4. Check pupil size.

*_____ 5. Smooth movement from center of nose to maximum deviation in 2 seconds and then back across subject's face to maximum deviation in right eye, then back to center. Check left eye, then right eye. (Repeat)

*_____ 6. Eye held at maximum deviation for four seconds (no white showing). Check left eye, then right eye. (Repeat)

*_____ 7. Eye moved slowly (4 sec.) from center to 45 angle. Check left eye, then right eye. (Repeat)

_____ 8. Check for vertical nystagmus. (Repeat)

II. WALK-AND-TURN

_____ 1. Instructions given from a safe position.

*_____ 2. Tells subject to place feet on line in heel-to-toe manner (left foot behind right foot) with arms at sides and gives demonstration.

*_____ 3. Tells subject not to begin test until instructed to do so and asks if subject understands.

*_____ 4. Tells subject to take nine heel-to-toe steps and demonstrates.

*_____ 5. Explains and demonstrates turning procedure.

*_____ 6. Tells subject to return with nine heel-to-toe steps.

*_____ 7. Tells subject to count steps out loud.

*_____ 8. Tells subject to look at feet while counting.

*_____ 9. Tells subject not to raise arms from sides.

*_____ 10. Tells subject not to stop once they begin.

*_____ 11. Asks subject if all instructions are understood.

III. ONE-LEG STAND

_____ 1. Instructions given from a safe position.

_____ 2. Tells subject to stand straight, place feet together, and hold arms at sides.

_____ 3. Tells subject not to begin test until instructed to do so and asked if subject understands.

*_____ 4. Tells subject to raise one leg, either leg, approximately 6" from the ground, keeping raised foot pointed out, and gives demonstration.

*_____ 5. Tells subject to keep both legs straight and to look at elevated foot.

*_____ 6. Tells subject to count for 30 seconds by thousands in the following manner: one thousand and one, one thousand and two, until told to stop, and gives demonstration.

_____ 7. Checks actual time subject holds leg up.

Instructor: _____

SESSION XVI

WRITTEN EXAMINATION AND PROGRAM CONCLUSION

SESSION XVI

WRITTEN EXAMINATION AND PROGRAM CONCLUSION

Upon successfully completing this session, the student will be able to:

- Pass a written examination.
- Provide comments and suggestions for improving the course.

CONTENT SEGMENTS	LEARNING ACTIVITIES
A. Post Test	o Written Student Examination
B. Critique	o Written Student Critique
C. Review of Post Test	o Instructor-Led Presentation
D. Concluding Remarks	
E. Certificates and Dismissal	

WRITTEN EXAMINATION AND PROGRAM CONCLUSION

During this session, you will take a written test to demonstrate your knowledge of the key topics covered in this course. Study the manual prior to the test. Become familiar with its contents.

Suggested topics for review to prepare for the test.

1. Deterrence and DWI

   What approximate percentage of fatal crashes involve drivers who have been drinking?

   On any typical weekend night, approximately what percentage of cars are driven by persons who are DWI?

   Approximately what percentage of adult Americans are estimated to commit DWI at least occasionally?

   About how many times per year does the average DWI violator commit DWI?

   An alcohol-related crash is more likely to result in death than is a non-alcohol related crash. How many times more likely?

   It is estimated that the current odds of being arrested for DWI on any one impaired driving event are about one-in-_____.

2. Detection Phases

   What are the three phases of detection?

   What is the definition of "detection"?

   What is the police officer's principal decision during Detection Phase One? During Phase Two? During Phase Three?

   Suppose you are on night time patrol and you see a vehicle following another too closely. What are the odds that the driver of the following vehicle is DWI?

3. Laws

   What does "Per Se" mean?

   The "Illegal Per Se" law makes it an offense to operate a motor vehicle while _____.

True or False: The Implied Consent Law grants the suspect the option of refusing the chemical test.

True or False: A person cannot be convicted of DWI if BAC was below 0.05.

4. Alcohol Physiology

True or False: Vision will be impaired for virtually all people by the time BAC reaches 0.08.

Name at least three factors that may affect the accuracy of a preliminary breath test.

5. Field Sobriety Testing

What does "nystagmus" mean?

Walk and Turn is an example of a _____ attention test.

Name the eight distinct clues of Walk and Turn.

Name the four distinct clues of One-Leg Stand.

Name the three distinct clues of Horizontal Gaze Nystagmus.

What is the critical angle for determining whether the third clue of HGN is present?

How many steps in each direction must the suspect take in the Walk and Turn test?

How long must the suspect stand on one foot in the One-Leg Stand test?

Suppose a suspect produces three clues on the HGN test and one clue on the Walk and Turn test. Should you classify the suspect's BAC as above or below 0.10?

How reliable is each test?

During this session, you will also be asked to complete -- anonymously -- a critique form. The instructors need your comments and suggestions to help them improve the course.

U.S. DEPARTMENT
OF
TRANSPORTATION

NATIONAL HIGHWAY
TRAFFIC SAFETY
ADMINISTRATION

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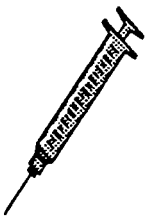
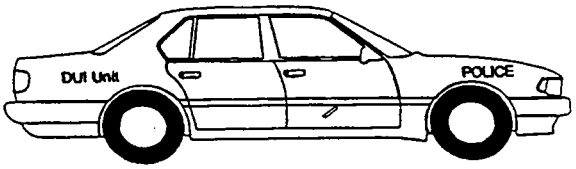
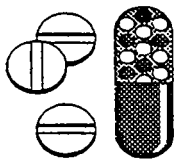
INTRODUCTION TO DRUGGED DRIVING







STUDENT MANUAL

INTRODUCTION TO DRUGGED DRIVING

STUDENT'S MANUAL

HS 178A R10/95

INTRODUCTION TO DRUGGED DRIVING

Upon successfully completing this module of instruction, the participant will be able to:

- o define the term "drug" in the context of DWI enforcement.
- o describe in approximate, quantitative terms the incidence of drug involvement in motor vehicle crashes and in DWI enforcement.
- o name the major categories of drugs.
- o describe the observable signs generally associated with the major drug categories.
- o describe medical conditions and other situations than can produce similar signs.
- o describe appropriate procedures for dealing with drug-impaired or medically-impaired suspects.

Content Segments	Learning Activities
A. Overview	o Instructor-Led Presentations
B. Eye Examinations: Detecting Signs of Drug Influence	o Student Practice
C. Drug Categories and Their Observable Effects	o Video Presentations
D. Combinations of Drugs	
E. Dealing with Suspected Drug Influence or Medical Impairment	
F. Topics For Study	

A. OVERVIEW

The purpose of this module is to acquaint you with the information now becoming available on the recognition of individuals who may be medically impaired or under the influence of drugs other than alcohol, and to assist you in preparing to prosecute such cases.

It is clear that police officers responsible for traffic law enforcement will encounter drug-impaired drivers. The best available data suggest that tens of millions of Americans routinely use drugs other than alcohol. And, some of these people at least sometimes drive when they are under the influence of those drugs.

Some drug-impaired drivers look and act very much like alcohol-impaired drivers. Others look and act very differently. All of them are dangerous, to themselves and to everyone else on the road.

1. What is a "drug"

The word "drug" means many things to many people. The word is used in a number of different ways, by different people, to convey some very different ideas.

Some sample definitions from dictionaries:

"A drug is a substance used as a medicine or in making medicines." (Webster's Seventh New Collegiate Dictionary, 1971)

This definition seems to exclude any substance that has no medicinal value. But there are many non-medicinal substances that regularly are abused. Model airplane glue is one such substance.

"A drug is a narcotic substance or preparation." (Also from Webster's).

Webster's further defines a narcotic as something that "soothes, relieves or lulls". Clearly, not all drugs that are of concern to police officers are narcotics. Cocaine, for example, is very different from a narcotic.

"A drug is a chemical substance administered to a person or animal to prevent or cure disease or otherwise to enhance physical or mental welfare." (From Random House's College Dictionary, 1982)

Here again, anything that has no medicinal value apparently does not fit the dictionary notion of a "drug".

From the perspective of traffic law enforcement, a non-medicinal concept of "drug" is needed. The definition we will use is adapted from the California Vehicle Code, Section 312:

> **A drug is any chemical substance, natural or synthetic which, when taken into the human body, can impair the ability of the person to operate a motor vehicle safely.**

2. Categories of drugs

Within the simple, enforcement-oriented definition of "drug" that we have adopted, there are seven broad categories. The categories differ from one to another in terms of how they affect people and in terms of the observable signs of impairment they produce.

Central Nervous System Depressants This category includes a large number of different drugs, all of which slow down the operation of the brain and other parts of the central nervous system (CNS). The most familiar drug of all--alcohol--is a central nervous system depressant.

Central Nervous System Stimulants This category also includes a large number of drugs, all of which act quite differently from the depressants. Central nervous system stimulants impair by "speeding up", or over-stimulating the brain. Cocaine is an example of a CNS stimulant.

Hallucinogens This category includes some natural, organic substances, and some synthetic chemicals. All hallucinogens impair the user's ability to perceive the world as it really is. Peyote (which comes from a particular variety of cactus) is a naturally-occurring hallucinogen. LSD is an example of a synthetic hallucinogen.

Phencyclidine This category consists of the drug PCP and its various analogs (or "chemical cousins"). Originally developed for use as an anesthetic, PCP is a powerful drug that in some ways acts like a depressant, in other ways like a stimulant, and in still other ways like an hallucinogen.

Narcotic Analgesics This category includes the natural derivatives of opium, such as morphine, heroin, codeine and many others. The category also includes many synthetic drugs, such as demerol, methadone and others. All narcotic analgesics relieve pain (that is what "analgesic" means) and produce addiction.

Inhalants This category includes many familiar household materials such as paint, model airplane glue, aerosol sprays, etc. None of these substances is manufactured for use as a drug. However, they produce volatile fumes that can produce significant impairment, and they are abused by some people.

Cannabis This is the category that includes marijuana and the other forms of the leaves, etc. of the Cannabis Sativa plant.

Each category of drugs produces a distinct set of observable effects. No two categories affect people in exactly the same way.

3. Frequency of drug use

No one knows with any appreciable degree of certainty how many Americans use drugs, or how frequently the various drugs are used. Estimates of drug use vary widely, and the estimates apparently depend on the kinds of people who were surveyed, where they were surveyed and the methods used. But all estimates agree that an appreciable segment of this country's population do use drugs.

The Los Angeles Police Department reviewed a number of drug-use studies, and concluded (in 1986) that approximately 40-50 million Americans regularly use drugs other than alcohol. These include:

- 20 million marijuana users
- 8-20 million cocaine users
- 6 million prescription drug users
- 1 million users of hallucinogens
- one-half million heroin users

One statistic, in particular, suggests the potential magnitude of America's substance abuse problem: in 1986, more than sixty million prescriptions were written for Valium, Librium and other so-called minor tranquilizers. (Of course, some people had multiple prescriptions.)

Drug use among juveniles is a particularly worrisome phenomenon. During 1975-1983, the National Institute of Drug Abuse surveyed high school seniors around the nation. They found that, during the 12 months immediately preceding the survey, only about 5-10% of the high school seniors did not use alcohol or other drugs.

- o 85% said they drank alcohol
- o 40% smoked marijuana
- o 25% used "stimulants" (other than cocaine)
- o 10% used cocaine
- o 10% used hallucinogens or tranquilizers, or both (in these surveys, PCP was considered an hallucinogen)
- o 5% used barbiturates

The National Highway Traffic Safety Administration published a review of several studies of chemical tests performed on drivers fatally injured in crashes. The studies consistently showed that more than 10 percent of these drivers had drugs other than alcohol in them.

B. EYE EXAMINATIONS: IMPORTANT CLUES OF DRUG INFLUENCE

A suspect's eyes often disclose some very important, and easy-to-observe indicators of drug influence or medical impairment. Four eye examinations are especially helpful:

- o Tracking Ability
- o Pupil Size
- o Horizontal Gaze Nystagmus
- o Vertical Nystagmus

Tracking ability refers to the ability of the eyes to track together when the subject attempts to follow an object moving side-to-side. The test of tracking ability is conducted in exactly the same fashion as the check for "lack of smooth pursuit" in the horizontal gaze nystagmus test. If the two eyes do not track together, i.e., if one moves smoothly but the other moves only slightly, or in a very jerky fashion, or not at all, the possibility of a serious medical condition or injury exists.

Pupil size is an important indicator of certain categories of drugs. Of course, the size of a person's pupils changes naturally, in response to changing light conditions. Usually, the diameter of the pupils constricts in bright light, and dilates in dark conditions.

If the two pupils are noticeably different in size, the suspect may have a glass eye, or be suffering from an injury or medical condition.

Subjects under the influence of narcotic analgesics usually have constricted pupils. Subjects under the influence of CNS stimulants or hallucinogens usually have dilated pupils. Cannabis may cause a slight dilation of the pupils, but not necessarily in all cases. Most CNS depressants, PCP and inhalants usually leave pupil size within normal range.

It is not necessary that a precise estimate of pupil size be obtained. It is enough to estimate whether the pupils are of equal size, and whether they look noticeably small, about normal, or noticeably large.

Horizontal Gaze Nystagmus usually occurs with subjects under the influence of three categories of drugs:

- o CNS depressants (including alcohol)
- o PCP
- o Most inhalants

The nystagmus usually is very distinct when PCP is involved, and the onset of jerking usually occurs almost immediately, i.e., very soon after the eyes start to move to the side.

Vertical Nystagmus is another easy-to-administer test. Position the object horizontally, about 15 inches in front of the subject's nose. Instruct the subject to hold the head steady and follow the object with the eyes only. Then, slowly and steadily raise the object until the eyes are elevated as far as possible. If the eyes can be observed to jerk noticeably, vertical nystagmus is present.

Vertical nystagmus usually occurs with PCP, and may occur with relatively high doses of CNS depressants or inhalants.

C. SUMMARIES OF DRUG CATEGORIES AND THEIR OBSERVABLE EFFECTS

1. CNS Depressants

Action

CNS depressants slow down the operations of the brain. They depress the heartbeat, blood pressure, respiration and many other processes controlled by the brain.

Examples
Alcohol
Barbiturates
Anti-Anxiety Tranquilizers (e.g., Valium, Librium)
Many Others

General Indicators

"Drunken" behavior	Sluggish
Uncoordinated	Disoriented
Drowsy	Thick, Slurred Speech

Eye Indicators
Horizontal Gaze Nystagmus usually present.
Vertical Nystagmus possibly present.
Pupil size usually normal (except that the drug Methaqualone causes pupils to dilate).

2. CNS Stimulants

Action
CNS stimulants accelerate the heart rate and respiration, elevate the blood pressure, and "speed up" or over-stimulate many other processes of the body.

Examples
Cocaine
The Amphetamines (e.g., methamphetamine, dextroamphetamine, amphetamine sulfate, etc.)

General Indicators

Restlessness	Grinding Teeth (Bruxism)
Talkative	Redness to Nasal Area (if "snorting")
Excitation	Runny Nose (if "snorting")
Euphoria	Body Tremors
Exaggerated Reflexes	Loss of Appetite

Eye Indicators
Nystagmus usually will not be present.
Pupils usually will be noticeably dilated.

3. Hallucinogens

Action
Hallucinogens cause hallucinations, i.e., they cause the user to perceive things differently from the way they really are.

Examples
Peyote (derives from cactus)
Psilocybin (derives from mushrooms)
LSD
MDA
Many Others

General Indicators

Hallucinations	Disorientation
Dazed Appearance	Paranoia
Body Tremors	Difficulty in Speech
Uncoordinated	Nausea
Perspiring	

Eye Indicators
Nystagmus usually will not be present.
Pupils usually will be noticeably dilated.

4. PCP

Action
PCP is a powerful anesthetic. However, it also causes bizarre and sometimes violent behavior.

General Indicators

Perspiring	Blank Stare
Repetitive Speech	Incomplete Verbal Responses
Confused	Muscle Rigidity
Possibly Violent and Combative	

Eye Indicators
Horizontal gaze nystagmus usually will be present, with very early onset and very distinct jerking.
Vertical nystagmus usually will be present.
Pupil size usually normal.

5. Narcotic Analgesics

Action
All narcotic analgesics share three important characteristics: they will relieve pain; they will produce withdrawal signs and symptoms when the drug is stopped after chronic administration; and, they will suppress the withdrawal signs and symptoms of chronic morphine administration.

Examples

Morphine	Demerol
Heroin	Methadone
Codeine	Many Other Synthetic Opiates
Many Other Opium Derivatives	

General Indicators

"On the Nod"	Facial Itching
Droopy Eyelids	Low, Raspy Speech
Depressed Reflexes	Fresh Puncture Marks May Be
Dry Mouth	Evident

NOTE: A tolerant user who has taken his or her "normal" dose of narcotic analgesic may not exhibit these general indicators.

Eye Indicators
Nystagmus usually will not be present.
Pupils usually will be severely constricted.

6. Inhalants

Action
Some inhalants include psychoactive chemicals that produce a variety of effects. Others exert their major effect by blocking the passage of oxygen to the brain.

Examples
Volatile Substances (glue, paint, gasoline, many others)
Aerosols (hair sprays, insecticides, many others)
Anesthetics (nitrous oxide, ether, chloroform, etc.)

General Indicators

Disorientation	Slurred Speech
Confusion	Possible Nausea

Possible residue of substance on face, hands, clothing.

Eye Indicators
Horizontal gaze nystagmus usually present.
Vertical nystagmus possibly present.
Pupil size usually normal.

7. Cannabis

Action
Marijuana and other Cannabis products apparently impair the attention process. Ability to perform divided attention tasks diminishes under the influence of Cannabis.

Examples
Marijuana
Hashish
Hash Oil

General Indicators

Very Bloodshot Eyes	Disoriented
Body Tremors	Relaxed inhibitions
Odor of Marijuana	Difficulty in Dividing Attention

Eye Indicators
Nystagmus usually will not be present.
Pupil size will be near normal or possibly slightly dilated.

D. DRUG COMBINATIONS

Many substance abusers apparently routinely use more than one drug at a time. For example, some like to drink alcohol while smoking marijuana. Others prefer to use PCP by sprinkling it on marijuana cigarettes, or "joints". Some prefer their heroin mixed with cocaine.

The term "polydrug use" describes these and numerous other examples of drug combinations. The prefix "poly" derives from the Greek word for "many". People who routinely use two or more drugs in combination are polydrug users.

Polydrug use appears to be very common, at least among people involved in impaired driving incidents. For example, the National Highway Traffic Safety Administration and the Los Angeles Police Department (LAPD) conducted a careful study of blood samples drawn from nearly 200 suspected drug-impaired drivers arrested in Los Angeles. Nearly three-quarters of those arrestees had two or more drugs in their systems.

Research has long indicated that young males (aged 15-34) have a higher incidence of drug use than do many other segments of the population. A California study of more than 400 young male drivers fatally injured in crashes revealed that nearly half had two or more drugs in their bodies at the time of the crash.

Because polydrug use is so common, it is highly likely that police will encounter suspects who are impaired by a combination of drugs, and who use alcoholic beverages to mask drug use.

When police come in contact with a polydrug user, a combination of effects, may be observed as the different drugs in his or her system affect the suspect in their various ways. The effects may vary widely, depending on exactly what combination of drugs is involved, how much of each drug was ingested, and when they were ingested.

In general, any combination of drugs may act together in three general ways.

1. Additive Effects
   The two drugs independently may produce some similar effects. In combination, those effects may be enhanced.

   For example, both CNS depressants and Narcotic Analgesics induce drowsiness. A person who has combined a depressant with a narcotic may become very drowsy, and difficult to awaken.

2. Antagonistic Effects
   The two drugs may produce some effects that are exactly opposite. In combination, it can be difficult to predict which drug will exert the stronger effect. It is even possible that the opposing effects will mask each other for a time.

For example, CNS stimulants usually cause pupil dilation, while narcotic analgesics usually cause pupil constriction. A person under the combined influence of a stimulant and a narcotic may have pupils that are nearly normal in size. And, it is possible that his or her pupils may be dilated at one time, and then become constricted, as the effects of one drug diminish or the effects of the other increase.

3. Overlapping Effects
Each drug may affect the suspect in some distinct ways. In combination, both effect may be observed.

For example, PCP causes nystagmus but does not usually affect pupil size. Narcotic Analgesics constrict pupils but do not cause nystagmus. A person under the influence of both drugs may exhibit nystagmus and constricted pupils.

E. DEALING WITH SUSPECTED DRUG INFLUENCE OR MEDICAL IMPAIRMENT

Students should become familiar with their agency's policies and procedures for handling drug- or medically-impaired subjects.

F. TOPICS FOR STUDY

Test your knowledge of the subject matter covered in this module by trying to answer the following questions. Answers are given on the next page.

1. What is a "drug" as the term is used in this course?

2. What are the seven major categories of drugs?

3. What kind (category) of drug is alcohol? What about cocaine? What about heroin?

4. How would you respond to someone who suggests that the "drug problem" basically occurs only in a few metropolitan areas, and doesn't apply to their community?

5. Name the four eye examinations that provide important indicators of drug influence or medical impairment.

6. What kind (category) of drug is PCP? What about marijuana? What about Valium?

7. What category (or categories) of drug usually causes (or cause) the pupils to constrict?

8. What category (or categories) of drug causes (or cause) the pupils to dilate?

9. What categories of drugs usually will not induce horizontal gaze nystagmus?

10. What kind (category) of drug is methamphetamine? What about LSD? What about Peyote?

11. What does the term "polydrug use" mean?

Answers To Review Questions

1. For purposes of this training, "a drug is any chemical substance, natural or synthetic which, when taken into the human body, can impair the ability of the person to operate a motor vehicle safely."

2. The seven categories are:
   Central Nervous System Depressants
   Central Nervous System Stimulants
   Hallucinogens
   Phencyclidine
   Narcotic Analgesics
   Inhalants
   Cannabis

3. Alcohol is a CNS depressant. Cocaine is a CNS stimulant. Heroin is a narcotic analgesic.

4. There might be some rare communities in this country that are free of the "drug problem", but they would be very rare indeed. A conservative estimate suggests that 40-50 million Americans regularly use drugs other than alcohol. These drugs routinely show up in the bodies of an appreciable number of crash-involved drivers. Certainly, most American communities are not immune to the "drug problem".

5. The four key eye examinations include:
   Tracking Ability
   Pupil Size
   Horizontal Gaze Nystagmus
   Vertical Nystagmus

6. PCP is Phencyclidine; that category consists only of PCP and its various analogs. Marijuana is Cannabis. Valium is a CNS depressant.

7. Narcotic Analgesics usually cause the pupils to constrict.

8. CNS stimulants and Hallucinogens usually cause the pupils to dilate. Cannabis might cause a slight dilation of the pupils.

9. CNS stimulants, Hallucinogens, Narcotic Analgesics and Cannabis do not induce horizontal gaze nystagmus.

10. Methamphetamine is a CNS stimulant. LSD and peyote are Hallucinogens.

11. "Polydrug use" is the practice of using two or more drugs at the same time, i.e., combining drugs.

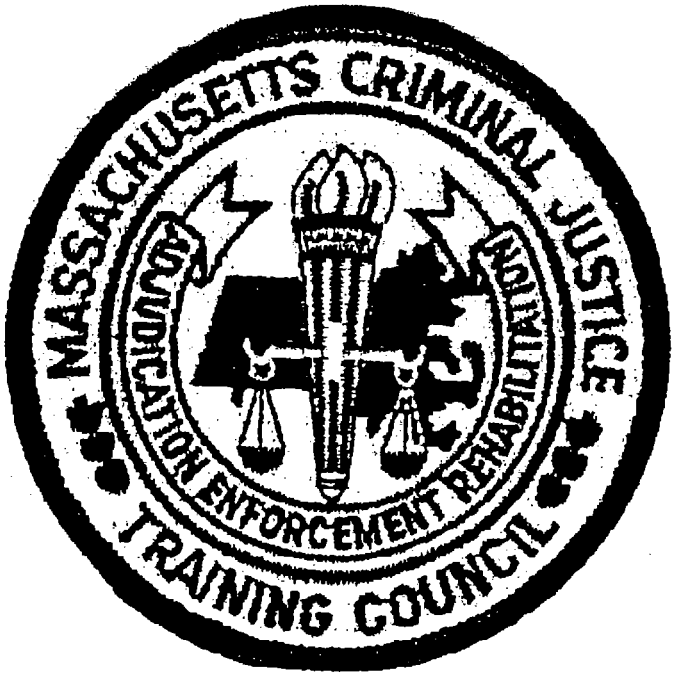
CATEGORY

Signs/ Symptoms	CNS Depressants	CNS Stimulants	Hallucinogens	PCP
ACTION	Slow down the operations of the brain. Depress the heartbeat, blood pressure, respiration and many other processes controlled by the brain.	Accelerate the heartrate and respiration, elevate the blood pressure and "speed up" or overstimulate many other processes of the body.	Cause hallucinations, i.e., they cause the user to perceive things differently from the way they really are.	Powerful anesthetic. It also causes bizarre and sometimes violent behavior.
GENERAL INDICATORS	"Drunken" behavior, Uncoordinated, Drowsy, Sluggish, Disoriented, Thick, Slurred Speech	Restlessness, Talkative, Excitation, Euphoria, Exaggerated Reflexes, Loss of Appetite, Grinding Teeth (Bruxism), Redness to Nasal Area (if "snorting"), Body Tremors	Hallucinations, Dazed Appearance, Body Tremors, Uncoordinated, Perspiring, Disorientation, Paranoia, Difficulty in Speech. Nausea	Perspiring, Repetitive Speech, Confused, Possibly Violent and Combative, Blank Stare, Incomplete Verbal Responses, Muscle Rigidity
EYE INDICATORS Nystagmus -Horizontal	Usually is present	Usually not present	Usually not present	Usually will be present, with very early onset and very distinct jerking
Nystagmus -Vertical	May be present	Usually not present	Usually not present	Usually will be present
Pupil Size	Is usually normal (except that the drug Methaqualine causes pupils to dilate)	Usually will be noticeably dilated	Usually will be noticeably dilated	Is usually normal

CATEGORY

Signs/ Symptoms	Narcotic Analgesics	Inhalants	Cannabis
ACTION	All narcotic analgesics share three important characteristics: they will relieve pain, they will produce withdrawal signs and symptoms when the drug is stopped after chronic administration; and, they will suppress the withdrawal signs and symptoms of chronic morphine administration.	Some inhalants include psychoactive chemicals that produce a variety of effects. Others exert their major effect by blocking the passage of oxygen to the brain.	Marijuana and other Cannabis products apparently impair the attention process. Ability to perform divided attention tasks diminishes under the influence of Cannabis.
GENERAL INDICATORS	"On the Nod", Droopy Eyelids, Depressed Reflexes, Dry Mouth, Facial Itching, Low, Raspy Speech, Fresh Puncture Marks May be Evident	Disorientation, Confusion, Slurred Speech, Possible Nausea, Possible residue of substance on face, hands, clothing	Very Bloodshot Eyes, Body Tremors, odor of Marijuana, Disoriented, Relaxed Inhibitions, Difficulty in Dividing Attention
EYE INDICATORS Nystagmus -Horizontal	Usually not present	Usually will be present	Usually not present
Nystagmus -Vertical	Usually not present	May be present	Usually not present
Pupil Size	Usually will be severely constricted	Usually is normal	Will be near normal or possibly slightly dilated

MASSACHUSETTS
CRIMINAL JUSTICE TRAINING COUNCIL



PRELIMINARY BREATH TESTING INSTRUMENT OPERATORS MANUAL

PREPARED BY:
DEPARTMENT OF STATE POLICE
OFFICE OF ALCOHOL TESTING

PRINTING PROVIDED BY:
MASSACHUSETTS GOVERNOR'S HIGHWAY SAFETY BUREAU

PRELIMINARY BREATH TESTING INSTRUMENTS OPERATOR'S MANUAL

SECTION 1.0 - TRAINING PROGRAM

There are no current statutes or regulations requiring officers to be trained prior to conducting preliminary breath tests (PBT). The Massachusetts Criminal Justice Training Council is certifying officers as Preliminary Breath Test Operators. The Council and the Office of Alcohol Testing strongly suggest that each chief or executive officer should decide which officers within the department should be trained. The officers need not be breath test operators to be eligible for training. The officers do not need to have chapter 90 powers to be eligible for training.

Officers can be trained as Preliminary Breath Test operators by attending and successfully completing any of the following Council classes;

a) a PBT class;

b) a Breath Test Operators class that includes PBT instruction;

c) a Standardized Field Sobriety Testing class that includes PBT instruction.

SECTION 2.0 - CERTIFIED PRELIMINARY BREATH TESTING INSTRUMENTS

The Office of Alcohol Testing suggests that only PBTs that are on the National Highway Safety Traffic Administration "conforming products list" and are also on OAT's list of approved preliminary breath testing instruments should be used in the Commonwealth. Instruments on OAT's list have been extensively tested in the laboratory as well as in the field. A list of approved PBTs is found in this manual.

SECTION 3.0 - HOW THE PRELIMINARY BREATH TESTING INSTRUMENT OPERATES

All PBTs use a fuel cell sensor to identify and quantitate the amount of alcohol in a subject's breath sample. Fuel cells are electrochemical in nature. Fuel cells are specific for alcohol. PBTs require the subject to blow at a preset flow rate for a preset amount of time. This allows the operator to collect a deep lung air sample which correlates to the subject's blood alcohol.

SECTION 4.0 - ADMINISTERING A PRELIMINARY BREATH TEST

Prior to administering a PBT, the officer should inquire as to whether the subject has either ingested or inhaled any substances within the last two minutes, and if so what.

To administer a breath test the operator should use a new mouthpiece for each subject. The test should be administered following the directions received in training. "Operational procedure sheets" have been prepared for each approved PBT. The OPS are to be used for training only. It is not necessary to follow the sheets when administering the PBT in the field.

Each department should develop a policy for disposing of the mouthpieces used during roadside testing.

SECTION 5.0 - RECORDING PBT RESULTS

Each PBT has a Maintenance and Use Log, similar to the logs used by the infrared breath testing instruments. The officer in charge of the PBT at each location is responsible for the proper upkeep of the log.

Each PBT result should be entered into the log. If the subject has also been arrested for a chapter 90 offense and infrared test has been administered, the breath test result should be entered into the PBT log.

SECTION 6.0 - MAINTENANCE OF PBT

The officer in charge is responsible for maintaining the PBT. Once a month the officer should run the simulator five times and record the results on the PBT Calibration Record. The solution need not be changed in the simulator prior to running of the monthly tests unless the solution has expired.

Any problems with the operation of the PBT should be recorded in the maintenance and repair log. Representatives of the Office of Alcohol Testing will be able to answer any questions regarding the use or care of the units.

The Commonwealth of Massachusetts
Department of State Police

OFFICE OF ALCOHOL TESTING
59 HORSE POND ROAD
SUDBURY, MA 01776
(508) 358-3120
FAX (508) 358-3123

APPROVED PRELIMINARY BREATH TESTING INSTRUMENTS

The following preliminary breath testing instruments are approved by the Office of Alcohol Testing for use in conducting preliminary screening tests in the Commonwealth.

COMPANY	INSTRUMENT
CMI / MPH A subsidiary of MPD, Inc. 316 East Ninth Street Owensboro, KY 42301 (502) 685-6545	**Intoxilyzer 300** **Intoxilyzer 400**
Intoximeter, Inc. 1901 Locust Street St. Louis, MO 61303 (314) 241-1158	**Alco-Sensor III** **Alco-Sensor IV**
National Draeger, Inc. Breathalyzer Division 185 Suttle Street, Suite 105 Durango, CO (970) 385-5555	**Alcotest Model 7410** **Alcotest Model 7410 Plus**

A/O 09/09/97

The Commonwealth of Massachusetts
Department of State Police

OFFICE OF ALCOHOL TESTING
59 HORSE POND ROAD
SUDBURY, MA 01776
(508) 358 - 3120
FAX (508) 358 - 3123

PRELIMINARY BREATH TESTING INSTRUMENTS

All officers in charge of PBTs will be trained by the Office of Alcohol Testing or the manufacturer of the instrument in the proper use, maintenance and calibration of the PBTs. All officers administering PBTs will be trained in their proper use by the officer in charge at their agency or department, the Office of Alcohol Testing, or an officer in charge at another agency or department trained in the use of such instruments.

SECTION 1. PRELIMINARY BREATH TEST LOG

1. The PBT is to be the ***last*** field sobriety test offered.
2. The PBT can be administered only with the defendant's consent.
3. All field tests must be entered into the PBT log.

SECTION 2. MAINTENANCE AND REPAIR LOG

1. Each officer in charge will be responsible to keep the PBT instrument in working order.
2. All service to the PBT instrument should be noted in the maintenance and repair log.

SECTION 3. CALIBRATION RECORD LOG

1. Once a month a calibration record must be completed on the PBT.
2. The simulator solution must be tested five times and the corresponding results noted on the calibration record. Valid results are 0.14%, 0.15% and 0.16%.
3. All results are to be recorded in the two decimal mode, truncating any third or subsequent decimal. Record test number if applicable.
4. The simulator solution does not need to be changed prior to the monthly PBT simulator tests.

EFFECTIVE 11/13/97

OAT 101A 1/08/98

DEPARTMENT OF STATE POLICE

OFFICE OF ALCOHOL TESTING

PBT LOG

PBT__________SERIAL NO.________________DEPARTMENT_____________________

DATE	TIME	TEST #	NAME	PBT Y/N	PBT BAC %	BT RESULT	BT TIME

OAT-103A. 1/8/98 PAGE_______

DEPARTMENT OF STATE POLICE
OFFICE OF ALCOHOL TESTING
PBT
MAINTENANCE AND REPAIR LOG

SERIAL #	OUT-OF-SERVICE DATE	REMARKS	REMEDY	IN-SERVICE DATE

OAT-105A, 1/27/98

PAGE

#_____

DATE_____

DEPARTMENT OF STATE POLICE

OFFICE OF ALCOHOL TESTING

PBT CALIBRATION RECORD

OPERATOR_____ BADGE/ID #_____

POLICE DEPARTMENT_____

SIMULATOR SERIAL NO._____

SIMULATOR SOLUTION LOT #_____

SIMULATOR SOLUTION EXPIRATION DATE_____

PBT SERIAL NO._____

SIMULATOR TEST RESULTS RUN NO. (OPT)

1._____

2._____

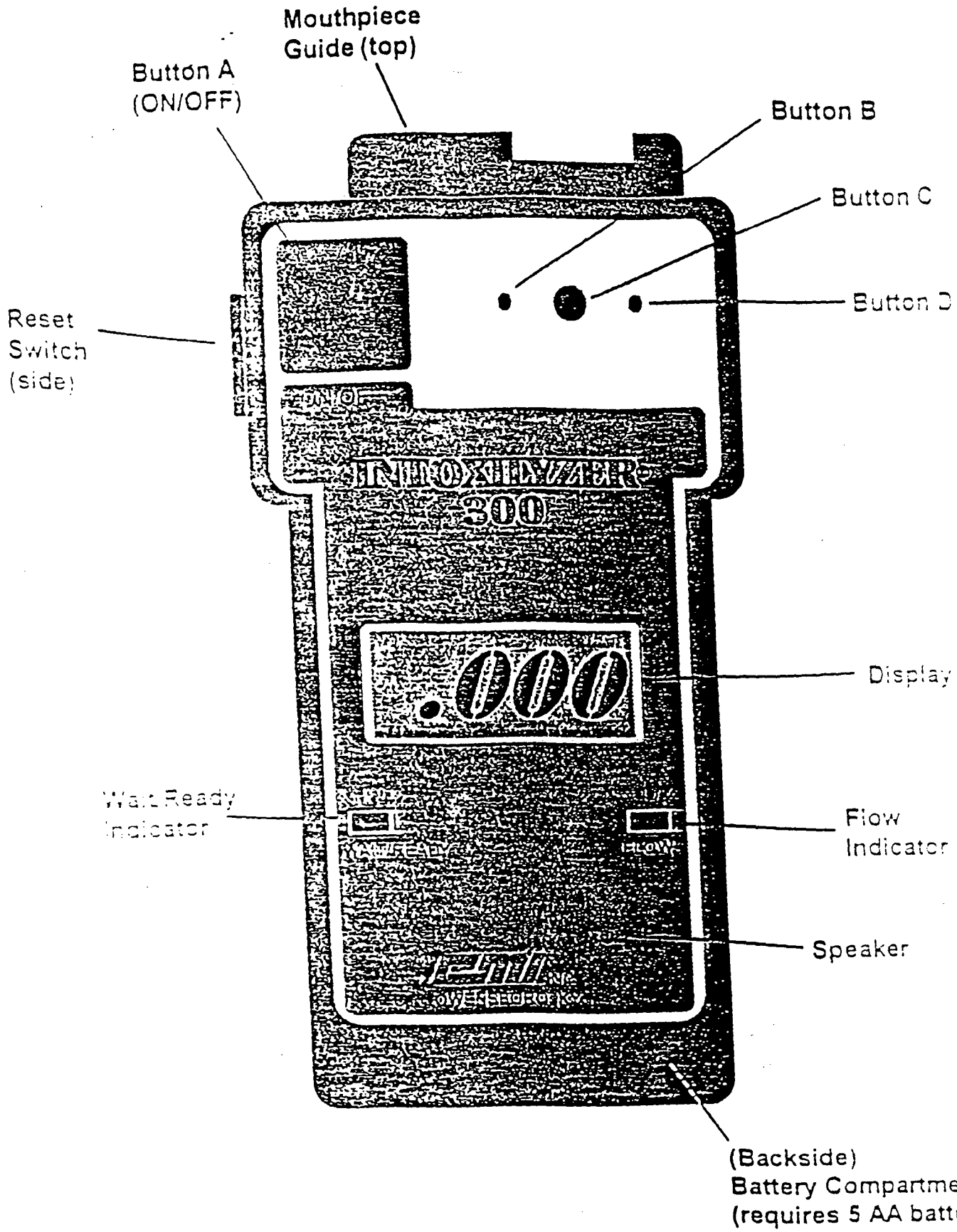
3._____

4._____

5._____

DATE TESTS RUN:_____

PBT CALIBRATION RECORD


Mouthpiece Guide (top)
Button A (ON/OFF)
Button B
Button C
Button D
Reset Switch (side)
300
.000
Display
Wait Ready Indicator
Flow Indicator
Speaker
(Backside) Battery Compartme
(requires 5 AA batte

DEPARTMENT OF STATE POLICE
OFFICE OF ALCOHOL TESTING

OPERATIONAL PROCEDURE SHEET

INTOXILYZER 300

1. Press Round Button "A" to turn the PBT on. Green lights will flash left, "wait" to right, "flow" and then turn red, "wait".

2. When the green light, "ready" appears on the left side the instrument is ready to take a breath sample.

3. Place mouthpiece in top of unit. The raised end of the mouthpiece will be on the left, the rounded indented end on the right. The mouthpiece should be pressed into the unit.

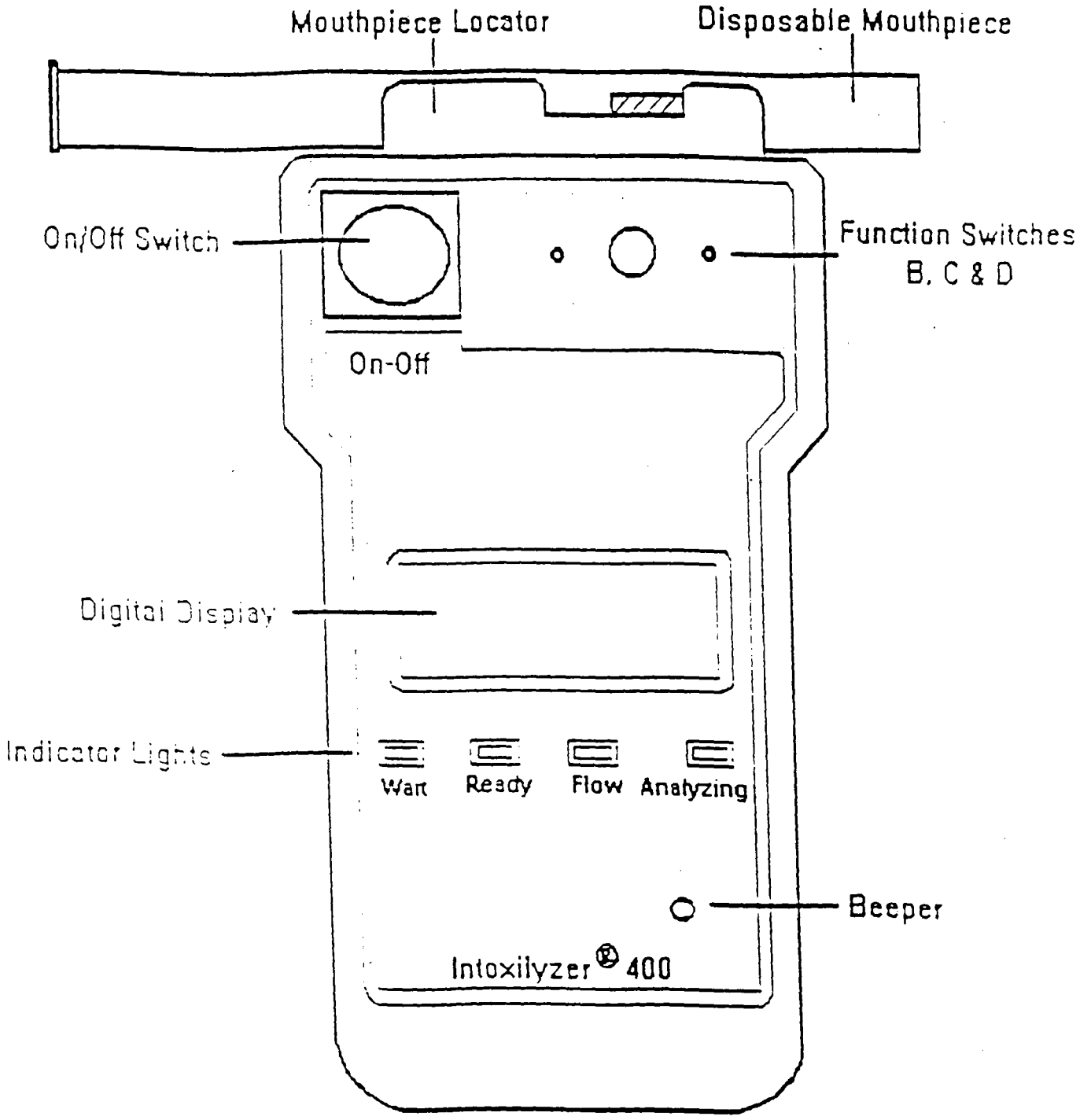
4. Have subject blow a continuous breath for six to eight seconds. You will hear the instrument beep twice when it has received a sufficient amount of breath. Two red lights will come on when this happens.

5. When the instrument beeps once, the reading will appear in the three decimal mode. The red "wait" light will then appear.

6. Reset the instrument by pressing in the black rectangular switch on the upper left side of the unit. Wait for the green ready light to appear before administering another breath test.

7. If no further testing is to be done, press the round "A" button to turn the instrument off.

8. Change mouthpieces for each subject.



Intoxilyzer 400 - Front View

DEPARTMENT OF STATE POLICE
OFFICE OF ALCOHOL TESTING

OPERATIONAL PROCEDURE SHEET

INTOXILYZER 400

1. Press round "on" button to turn the PBT on. The lights will illuminate left to right and then go out. The digital display will exhibit zeros, eights, then the time and the date. The red wait light will be on. There will be a digital display of a number, for example 0005. This is the number of the subject's test. The test resultst can be downloaded to a computer.

2. When the green "ready" light is illuminated, the instrument is ready to take a breath sample.

3. Place mouthpiece in top of unit. The raised end of the mouthpiece will be on the left, the rounded indented end on the right. The mouthpiece should be pressed into the unit.

4. Have subject blow a continuous breath for six to eight seconds. The yellow "flow" light will illuminate . You will hear the instrument beep twice when it has received a sufficient amount of breath.

5. The red "analyzing" light will illuminate. When the instrument beeps once, the reading will appear in the three decimal mode. The red "wait" light will then appear.

6. The instrument will automatically reset. Prior to the green "ready" light the instrument will again give you the number of the test. Wait for the green "ready" light to appear before administering another breath test.

7. If no further testing is to be done, press the round "off" button to turn the instrument off.

8. Change mouthpieces for each subject.

DEPARTMENT OF STATE POLICE
OFFICE OF ALCOHOL TESTING

OPERATIONAL PROCEDURE SHEET

BREATHALYZER 7410

1. Press square switch on right middle side of PBT. The yellow on light will illuminate. The digital display will exhibit , eights, u , and --- . There will be a digital display of a number, for example no_ 123. This is the number of the subject's test. The test results can be downloaded to a computer.

2. When the yellow and green lights are illuminated. the instrument is ready to take a breath sample.

3. Place mouthpiece in top of unit.

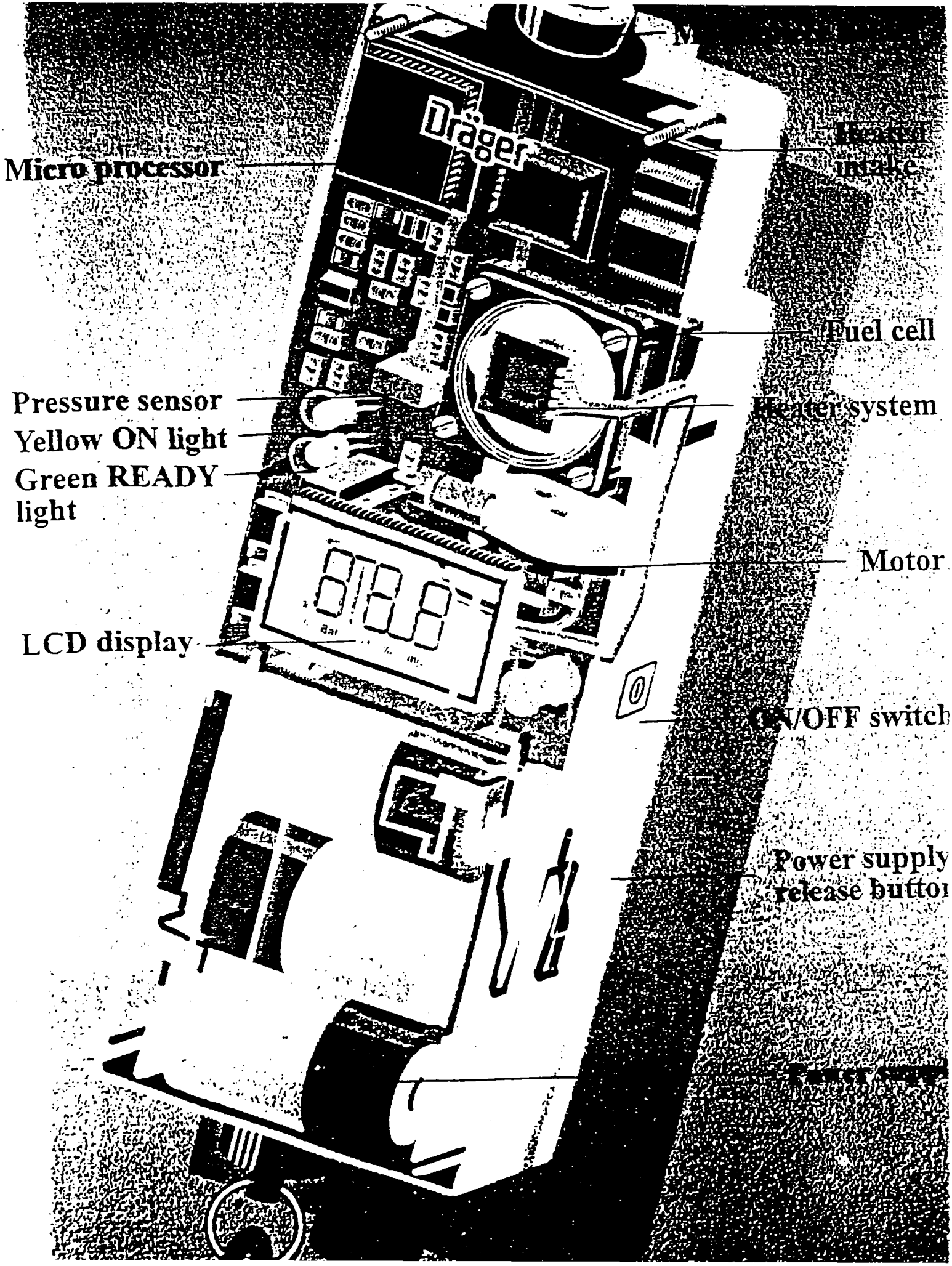
4. Have subject blow a continuous breath for six to eight seconds.

5. The yellow on light will illuminate and the reading will appear in the three decimal mode.

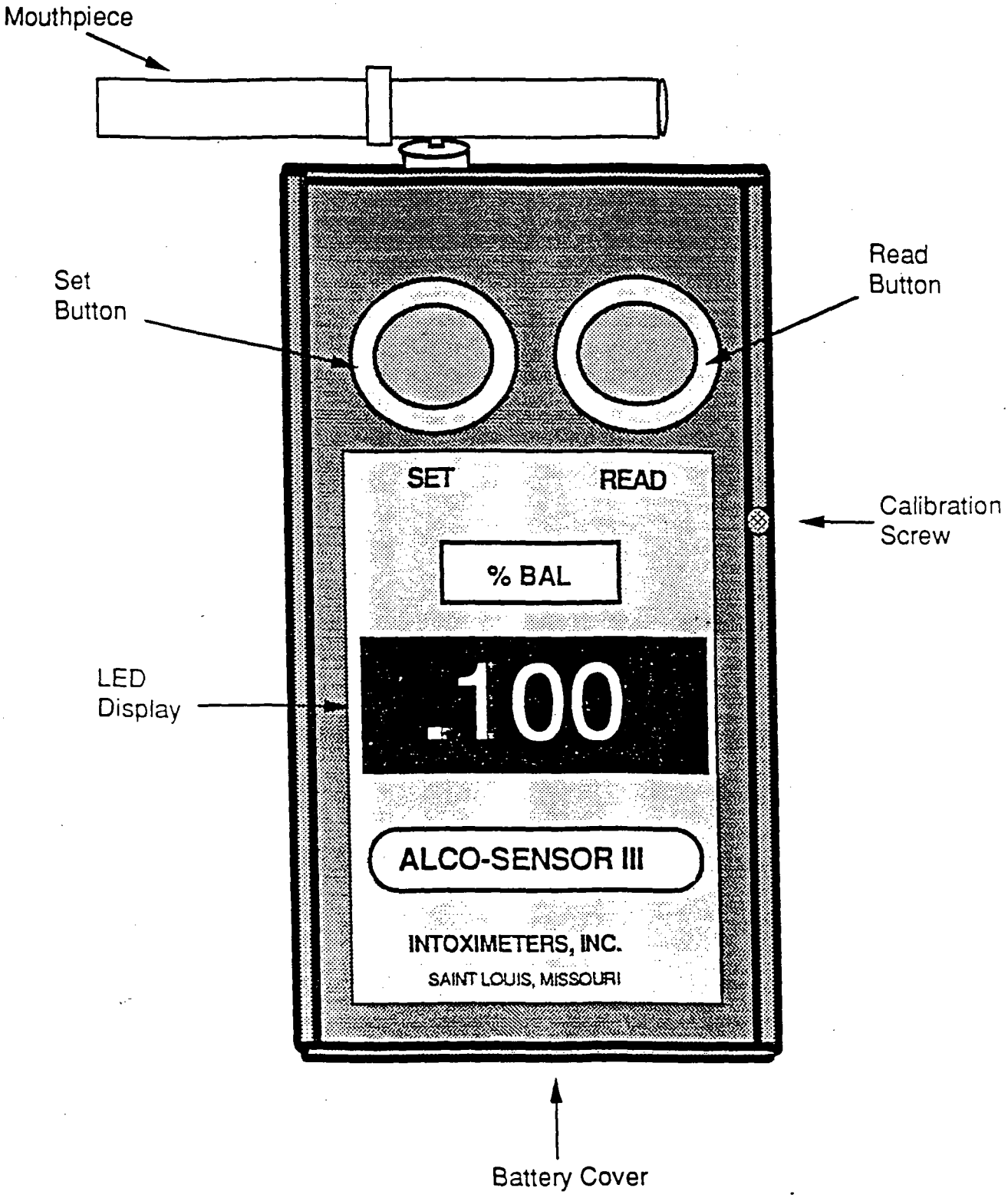
6. To reset the PBT press the square switch on the right side of the unit .Prior to the yellow and green lights illuminating the instrument will again give you the number of the test. Another breath test can be administered at this time.

7. If no further testing is to be done, press the side button twice to turn off the instrument.

8. Change mouthpieces for each subject.


Micro processor
Pressure sensor
Yellow ON light
Green READY light
LCD display
Fuel cell
Motor
Power supply
release button

ALCO SENSOR III



ALCO-SENSOR III BACKPLATE

OPERATING INSTRUCTIONS

1. Check TEMPERATURE. ▼ If any number or symbol shows, proceed to step No. 2.
   If not, place instrument in pocket close to body for 2 minutes & re-check.
2. Attach mouthpiece.
3. Press READ BUTTON for 10 seconds. If DISPLAY is zero, proceed. If not, depress SET BUTTON and return to pocket.
4. Depress SET BUTTON.
5. Instruct subject to blow steadily for as long as possible.
6. Press READ BUTTON before exhalation ceases (but not less than 3 seconds after blowing starts).
7. Keep READ BUTTON depressed until maximum reading is obtained.
8. Discard mouthpiece & depress SET BUTTON.

Serial No. 1234567

Temperature Window

DEPARTMENT OF STATE POLICE
OFFICE OF ALCOHOL TESTING

OPERATIONAL PROCEDURE SHEET

ALCO-SENSOR III

1. Check temperature. Insert mouthpiece.

2. Press the READ button for ten seconds. The unit will display zero. If zero is not displayed, the unit is not at proper temperature.

3. Press the SET button.

4. Have the subject blow a steady continuous breath for approximately six seconds. Then press the READ button while subject is still blowing into the unit.

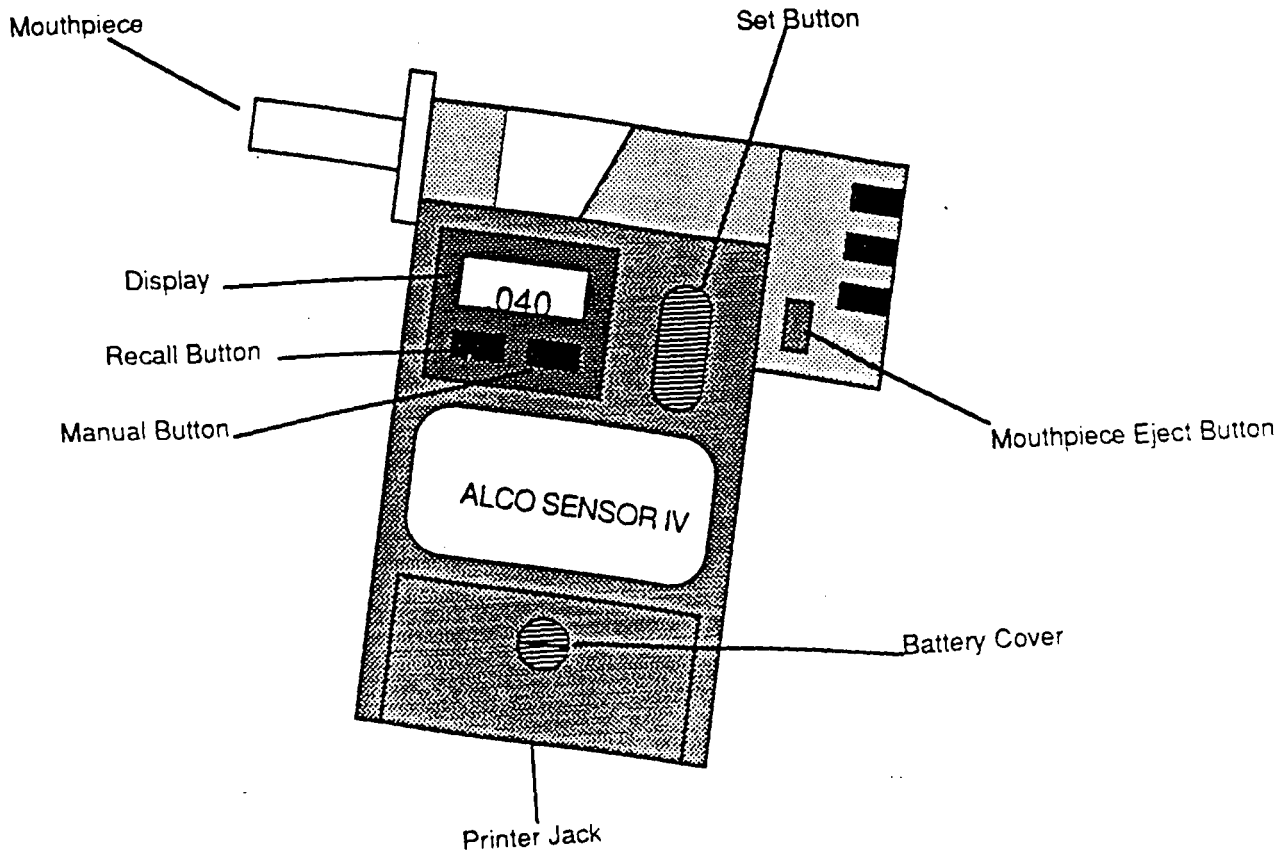
5. Keep the READ button depressed until the blood alcohol reading is obtained.

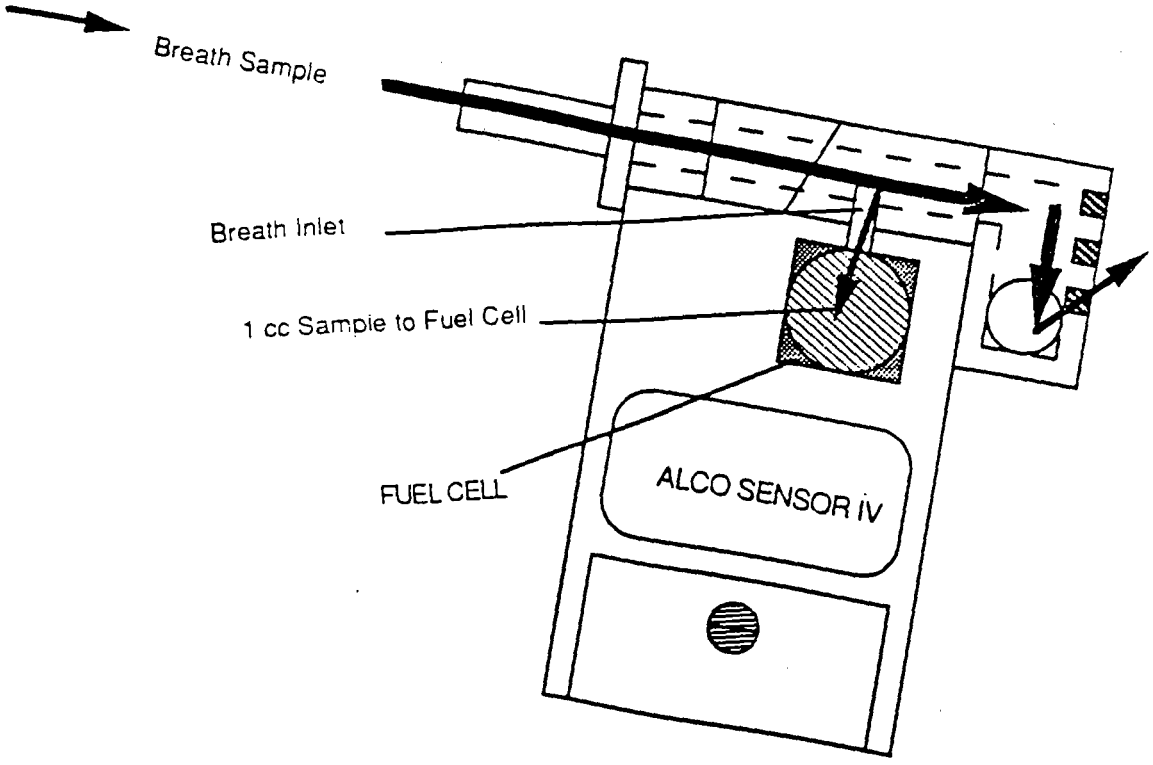
6. Discard the mouthpiece and press in the set button.

7. The instrument is ready to begin the testing sequence for another subject's test.

8. Change mouthpiece for each subject.

ALCO SENSOR IV





ALCO-SENSOR IV BACK PLATE

OPERATING
INSTRUCTIONS

1. INSERT MOUTHPIECE.

Unit turns on.

2. NOTE PRE-TEST INFORMATION.

If unit displays Set,

3. DEPRESS *SET* BUTTON.

When unit displays Blnk,
Unit runs Blank automatically & displays .000.

If unit displays Set,

4. DEPRESS *SET* BUTTON.

When unit displays Test,

5. COLLECT A BREATH SAMPLE.

6. RECORD READING.

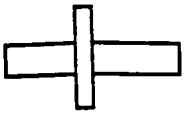
7. DEPRESS *SET* BUTTON AND REMOVE MOUTHPIECE.

If unit displays a message not mentioned above, consult manual.

U.S. Patent No. 4,487,055
4,770,026
5,291,898
U.K. Patent No. 2201245

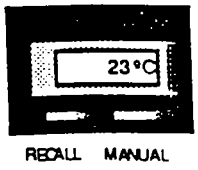
SERIAL NUMBER

Components & Operations



Mouthpiece

The mouthpiece contains a plastic check valve which permits only one way air flow. Shaking the mouthpiece and hearing a rattle ensures that the check valve is functional. Use only mouthpieces manufactured or approved by Intoximeters. The design of the mouthpiece can affect the readings which the Alco-Sensor IV provides. Using other mouthpieces may cause damage to the instrument and/or influence the accuracy of test results.

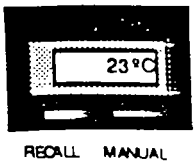


Display

The display turns on when a mouthpiece is inserted properly. Various commands and symbols appear on the display to direct the operator through the testing protocol and to alert the operator of improper testing conditions detected by the system.

Set Button

The **SET** button cocks the sampling pump when depressed. It is best that the internal pump be cocked when the Alco-Sensor IV is not in use. In this position the chance of contaminants entering the fuel cell chamber is eliminated.

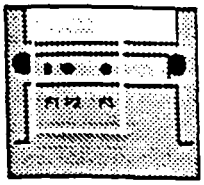


Recall Button

The **RECALL** button is located below the display on the front panel to the left of the **MANUAL** button. Its primary function is to re-display the current test result. Once the mouthpiece is removed the result of the previous test can not be recalled.

Mouthpiece Release Button

When depressed, the red mouthpiece release (**RELEASE**) button on the right hand side of the instrument releases the mouthpiece from the mount and ejects it from the chamber. The mouthpiece should never be pulled from the mount without depressing the **RELEASE** button.

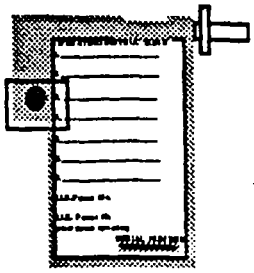


Function Switches (F1, F2, F3)

The function switches (**F1, F2, F3**) are located under the cover of the Alco-Sensor IV. The three switch access holes are used in the calibration procedure.

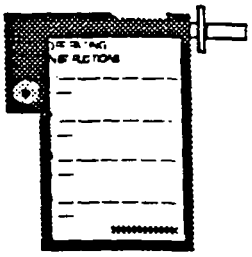
Function Switch Key

The Function Switch Key is located in the case under the Alco-Sensor IV. It is used to press the function switches.



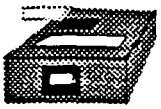
Air Flow Exit Port

This port is located on the back of the Alco-Sensor IV. It is surrounded by a ring of plastic ridges. The function of this opening is to allow the expired breath to pass unimpeded, out of the instrument. During operation, position the instrument so that the expired breath is directed away from the operator, also avoid blocking this passage with your hand at any time during operation.



Back Plate

On the back plate of the Alco-Sensor IV are step-by-step directions providing a general explanation of how to run a test. These steps only refer to the operating procedures of the instrument. The operator should be thoroughly familiar with the protocols under which s/he is performing the test.



Cable Connector Port

Located at the bottom of the Alco-Sensor IV; it is used when connecting the instrument to a printer or a computer with a compatible cable.

DEPARTMENT OF STATE POLICE
OFFICE OF ALCOHOL TESTING

OPERATIONAL PROCEDURE SHEET

ALCO-SENSOR IV

1. Insert mouthpiece to turn unit on. The temperature, date and time will be displayed on a scrolling line. Then the test number will be displayed twice on a scrolling line.

2. The unit will display either **Test** or **Set.**

If the unit displays **Test** have subject blow a continuous breath sample till the instrument clicks. While the subject is blowing you will hear a tone.

If the unit displays **Set** , push the set button in and then have subject blow when the word test is displayed. The subject should blow a continuous breath sample till the instrument clicks. While the subject is blowing you will hear a tone.

3. Note the result of the test which is displayed when the tone sounds.

4. Press the set button.

5. Press the red button to eject the mouthpiece and turn the instrument off. The instrument will beep if you do not remove the mouthpiece. Note that the mouthpiece will be ejected with some force.

6. To test a new subject, insert a new mouthpiece and resume the testing sequence.

7. Change mouthpiece for each subject.

DEPARTMENT OF STATE POLICE
OFFICE OF ALCOHOL TESTING

59 Horse Pond Road
Sudbury MA 01776

The Office of Alcohol Testing has relocated to the new Crime Laboratory in Sudbury. The new phone numbers are as follows:

Nancy J. Burns	**(508) 358-3120**
Barbara O'Brien	**(508) 358-3124**
Trooper John P. Jakobowski	**(508) 358-3122**
Trooper Stephen C. Mullaney	**(508) 358-3121**
Fax	**(508) 358-3123**

DIRECTIONS FROM ROUTE 495:

-Rte 495 to Rte 20 EAST
-Follow Rte 20 EAST through Marlborough
-After passing the "99 Restaurant" in Sudbury, turn LEFT onto Horse Pond Road
-Crime Lab is 1/4 mile on left

DIRECTIONS FROM ROUTE 128:

-Route 128 to Rte 20 WEST
-Follow Rte 20 WEST through Weston, Wayland and into Sudbury
-After passing the fire station on right, continue approximately ½ mile before turning RIGHT onto Horse Pond Road
-Crime Lab is 1/4 mile on left

ENTRANCE TO THE BUILDING

-Facing the building, drive to the right side
-Use the door on the side of the building
-Ring buzzer to gain access
-OAT is first lab on the left